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GEORGE H. SIMMONS, M.D.

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Original Articles

THE DIETETIC TREATMENT OF NEPHRITIS.*

F. C. SHATTUCK, M. D.

BOSTON.

So powerless are we directly to influence the kidneys by drugs that diet becomes of prime importance in our efforts to do our best for patients suffering from disablement of these organs, which play so leading a rôle in excretion.

The principle which should guide us may be expressed in one word—rest, provided that we remember that in the living body rest is a relative term. Absolute rest, as evidenced by cessation of the output of the kidneys, means death before many days. By rest we mean here, of course, such limitation of demand as may promote either complete restoration of functional activity, or such measure of it as may be possible, together with maintenance of the same for the longest possible time and without injury to the body as a whole or to its other important constituent parts.

Acute nephritis is of all grades of intensity, varying from a trivial process, the only danger of which is lest it become chronic, to one which totally and suddenly disables the kidneys. It is probably nearly always the result of an infection in which the kidneys may bear the brunt of the poisoning or may participate in a wide-spread disturbance, perhaps early, but more often later, in the course of the disease.

For twenty-five years it was almost universally considered the best practice to give a rigid milk diet in these cases and to force water. Water, of which milk is, of course, largely composed, was regarded as the best diuretic. Milk, moreover, contains, in an easily assimilable form, every nutritious principle necessary for the maintenance of life. The idea underlying the large ingestion of water was to scour the blocked tubules. But we have learned of late years that in many cases the main trouble lies behind the tubules in the glomeruli, the incapacity of which to filter is, in the acute stage, more likely to be increased than diminished by increasing the blood mass and blood pressure.

Experience teaches us that recovery, often complete and lasting, is the rule in acute nephritis provided that a brief danger period can be tidied over. Starvation is, therefore, now considered the best dietetic treatment of acute nephritis, absolute starvation for a few days in the severe cases with very scanty or suppressed urine and edema of rapid onset and growth. In cases of less severity, the kidneys allowing the passage of water and dropsy not increasing, about a quart of milk can be given daily and the needs of the system eked out by cereals and fats in moderate amount. The phosphoric acid in

the milk which may be difficult of excretion can be precipitated in the intestine by the addition of small quantities of calcium carbonate, as suggested by von Noorden, who also acutely calls attention to the inconsistency of those who absolutely prohibit alcohol but permit kounyss and matzoon. Moderate quantities of alcohol do no harm, he believes, though he seldom uses it. The quantity of food is to be gauged by the degree of kidney disablement as measured by the amount of urine rather than by the amount of albumin, the state of nutrition of the patient and his gastrointestinal digestive power, all combined. As convalescence advances the quantity and variety of food should be increased, including proteids. Animal broths are almost the last things to be allowed, containing little of nutritive value but extractives, which are dangerous to those liable to renal intoxication.

From a practical point of view the dietetic management of acute nephritis and of acute exacerbations of the chronic forms is essentially the same. The general condition of patients suffering from the latter may not tolerate as complete or prolonged starvation as may be safe in the former.

We have learned in these latter days that our knowledge of the real pathology of nephritis is more limited than we once thought it to be and that consequently our classification of its forms is as unsatisfactory as it is tentative. The clinician who, discouraged by his frequent failure to apply the classification of the pathologist to practice, makes a classification mainly on clinical lines, does not help matters much. For our present purpose, therefore, I shall divide the chronic cases into two classes—those cases with and those without dropsy. The second class is chiefly made up of the arterio-sclerotic and other cortically atrophied kidneys in which dropsy is conspicuously absent as long as compensatory left ventricular hypertrophy is present. In cases of chronic nephritis with dropsy, especially if the dropsy is mainly of cardiac origin, limitation of liquids is important as a rule.

As far as diet alone is concerned the chief, if not the sole, difference in the treatment of dropsical and non-dropsical cases lies in the degree of limitation of liquids, including water. In some cases, and in some stage of any case, water may be excreted with difficulty by the kidneys and, if the myocardium be at all insufficient, increasing the blood mass merely increases the load of the already overburdened heart.

In the chronic cases we have, as a rule, little hope of true recovery and yet we now and then see such a case as this. A young woman who has had renal albuminuria for more than a year marries. She is cautioned with regard to pregnancy. She nevertheless becomes pregnant before long, passes through it and labor successfully, loses her albuminuria, has a second child and remains absolutely well some years later. In other cases, apparently of the so-called parenchymatous or dif-

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

fuse type, we note the maintenance of apparent perfect health in combination with a highly albuminous and cast-rich urine for years and years. Apart from these exceptions, however, our aim must be to enable the patient to tolerate his disease as long and as comfortably as possible. Thoughtful attention must be given to the body as a whole, and its nutrition. What does it avail a man to gain sound kidneys if he lose his life? This means careful individualization of our cases and the effort in each case to adjust the amount, quality and variety of the food to the needs of that particular case at the given time, according to the stage and intensity of the renal process, the condition of other organs and of the whole organism. The best place for printed diet lists so kindly furnished us by the manufacturers of dietetic preparations for Bright's disease, diabetes, gout and other entities, is the fireplace. The physician should be his own prescriber of food as well as of drugs.

The exercise of that form of common sense which, if the ideal be not obtainable, knows how to recognize and secure the best regimen and mode of life possible for the case in hand is no mean help.

In cases with dropsy, with a strictness largely proportional to the degree thereof, a relatively dry diet is advisable. In the cases of contracted kidney, including the "gouty kidney" of the English, I am inclined to think von Noorden right in his opinion that we have erred in the past in forcing water, even in the absence of dropsy, thereby endangering the compensatory hypertrophy of the left ventricle, on the maintenance of which life often depends more than on the kidneys, to the slow wasting of which the system has a chance to accommodate itself.

It seems to me that the main service which von Noorden has rendered is his cogent advocacy of the limitation of liquids. The pendulum had already begun to swing away from an exclusive milk diet in chronic cases, at least, before his views became common property in this country. His varied diet with a fair amount of proteid is in all essentials the same as that which I have advised my patients and taught my students to follow for at least fifteen years past. I never could see anything in the ban put on red meat save an ingenious mode of limiting the amount of meat. He who eats no meat save practically the breast of chicken eats very little, and less as time goes on, so weary of it does he become. Is it not better to talk straight as well as to think straight? I have long been in the habit of allowing my chronic nephritis meat of any color they please once a day, with fish or eggs at the other meals. As to amount I believe that the best results are to be attained only by study of the special case. We have all seen cases in which nephritis has been overlooked for some reason or another and which were suffering from too much food of all kinds. But I am sure that I have seen more patients with recognized nephritis suffering from an insufficiency than an excess of proteids. Cooking should be simple. Spices and condiments may be undesirable and their prohibition involves no hardship, at all events. Green vegetables and fresh fruits in their season are almost without exception permissible, nay desirable. The more perishable fruits, such as peaches and berries, which have traveled long distances to market, are apt to be poor things for anybody. Varieties are selected with more reference to their appearance on arrival than to their digestibility or palatability. I note that von Noorden forbids celery. I do not know how things may be now, but when I studied in Germany

thirty-odd years ago the only form of celery I ever saw on the table was the root. In this country I have seen only the stalk, which, either in the raw or cooked state, I can not think detrimental to nephritis.

The red meat calls up another fad—that of the avoidance of water with meals. Its true purpose may originally have been to limit alike food and drink and thus to reduce weight. But many persons have got it into their heads that water between meals is no longer water. The interdiction of red meat and of water with meals may be an easy way for the physician to attain a certain end. But the easy way is not always the best way, and I believe that we serve our patients, humanity and ourselves better if we avoid shibboleths, even if the so doing involves trouble and time.

Many women and some men seem to have nothing better to do than to exchange confidences—if those things can be called confidences which are openly talked of in street cars or in places of public amusement—as to their ailments, their physicians and their remedies. I recall a story which I heard of the late Dr. H. J. Bigelow, the great surgeon. A woman sent for him and talked for more than half an hour without interruption from him. When she had concluded he remarked: "Well, as near as I can find out, you have sent for me to ask whether a remedy which Dr. A. prescribed for Mrs. B. for a complaint which you have not got would be good for you." This woman had the sense to refer the question to her physician. Some have not, but go ahead and take the remedy. The practice of medicine is even to-day more of a black art than it would be if physicians always thought clearly and took the trouble to explain principles broadly to their patients. Of course, our knowledge is most imperfect and we must often base our action on half or quarter truths, even on what is not the truth although we believe it to be such at the time. But let us recognize that a fraction of truth is but a fraction, and bear in mind the saying credited to the late Speaker (Tom) Reed—"People say truth is simple: half truths are simple but the whole truth is the most complicated thing on God's earth."

I have no personal experience with the restriction of salt in the diet of nephritis. The investigations of Vidal, Javal, Lemièrre Kövesi, Róthe-Schultz, Strauss and others make it certainly desirable that further clinical evidence be acquired as to its value in kidney disease with dropsy. While the reports of the many observers are by no means unanimous, the evidence in favor of a low sodium chlorid allowance is sufficient to make us ask for more light. I am only too conscious of the sketchiness of my remarks on this important subject. The imperfection of our knowledge and the size of the subject render it impossible, for me at least, to qualify or to go into minute detail. Principles are more important and of chief concern to us here.

The leading ones pertaining to the dietetic treatment of nephritis may be stated somewhat as follows:

1. Such control as we may have to-day of nephritis lies in diet and mode of life rather than in drugs.

2. Such drugs as are useful are so in their effect on the general organism or on the heart rather than on the kidneys directly.

3. In all cases of nephritis our broad aim is to spare the kidneys unnecessary work, not forgetting that the urinary is but one of the systems which comprise the body.

4. In acute nephritis, as well as in acute exacerbations of the chronic forms, Doctors Diet and Quic should work together. Starvation for a few days, pro

portional to the intensity of the process and the strength of the patient, is the keynote of the dietetic management.

5. In the chronic forms we seek to lengthen and lighten life, an aim often largely within our power of attainment. Especially in the contracted form of kidney disease many years of life, much of the happiness which comes from achievement, days and nights of comfort, may hinge on our skill in adapting sound principles to the particular case and in securing the co-operation of the patient in carrying out the same, persistently, not spasmodically. Dietary restriction should be in the main quantitative rather than qualitative. Alcohol in moderation is not necessarily a poison and may be an aid to digestion.

6. The excess of proteid, not proteid in itself, is harmful to the chronically sick kidney.

7. A varied is more likely than a monotonous diet to promote the manufacture of good blood and thus to promote good nutrition of the body in general and of the myocardium in particular.

8. The amount of albumin is in itself no guide as to the extent of dietary restrictions.

ALBUMINURIA IN NEPHRITIS AND BRIGHT'S DISEASE.*

ALFRED STENGEL, M.D.
PHILADELPHIA.

Nicholas Cotugno, in the latter part of the eighteenth century, called attention to the coagulable quality of the urine in cases of dropsy, and Richard Bright showed the relation of disease of the kidney to dropsy and albuminuria in the early part of the succeeding century. Subsequently the pathologic observations of Bright, of Rayer and of others seemed to establish the invariable association of these conditions. Pathologists of the new school of cellular pathology confirmed the relationship of albuminuria and dropsy with an inflammatory lesion of the kidney so that in the course of time "albuminuria" and "nephritis" became terms of nearly identical practical significance.

As time went on, however, some of the physiologic chemists found that transient albuminuria or cyclical albuminuria might occur without any evidence of lasting disease of the kidneys. In the ordinary course of practice, however, physicians have looked on albuminuria as significant of nephritis, unless the evidence in favor of some temporary congestive or other condition has been well nigh overwhelming. The determination of the proper relations of these conditions to one another was made more difficult by the classifications suggested by various pathologists and clinical pathologists who sought to distinguish a number of types of nephritis and laid down complicated criteria of differential diagnosis, with the result that practically every form of albuminuria might be made to fall in some artificial group. The more accurate urinary examinations and the more careful medical diagnosis of recent years, however, have established the fact that it is necessary to distinguish between nephritis in the sense of the pathologist and nephritis or Bright's disease in the clinical sense.

It must be recognized that the kidney is a highly differentiated organ subjected to exceptional irritations in its important function of excretion, and that inflam-

matory lesions in the minute pathologic sense may be extremely frequent without of necessity leaving any lasting results. Furthermore, it is obvious that nephritis does not become a condition of grave significance until the pathologic changes have attained a degree of intensity or have involved a proportion of the kidney substance sufficient to interfere with the complex functions of the organ so as to imperil the general health. The presence of slight intertubular exudation, of moderate or even extensive, if uncomplicated, degeneration of the epithelia of the tubules, or of slight alterations in the glomeruli, would not justify a positive assertion that the case was one of Bright's disease in the clinical sense. The distinction, of course, is one of degree rather than of kind, but the point at which I am aiming is to bring out the fact that an excretory organ like the kidney is excessively prone to slight and transient alterations which in all probability will undergo satisfactory resolution without permanent impairment of the integrity of the organ.

Much difference of opinion has arisen on account of this discrepancy between slight pathologic lesions and functional or clinical manifestations. In all of the cases now in mind, albuminuria, the great criterion of nephritis, is likely to be encountered, and yet the pathologic conditions are frequently neither serious at the time nor lasting and progressive in character. It is hopeless to attempt a classification based on minute differences in the pathologic findings, and for practical purposes the old clinico-pathologic classification is still the most satisfactory. According to this, two forms of Bright's disease may be recognized, the acute and chronic parenchymatous nephritis, and a third form of nephritis, somewhat different in its clinical course and effects, chronic interstitial nephritis. Individual instances of the first and second forms vary much in the actual pathologic lesions. Sometimes epithelial degeneration is paramount; at other times exudative changes are conspicuous; changes in the glomeruli are usually pronounced and hemorrhagic processes may be conspicuous. In chronic cases, fibrosis sometimes becomes nearly as extensive as in chronic interstitial nephritis. The pathologic picture, therefore, is variegated in the extreme. Contrasted with these cases and essentially distinct from them is chronic interstitial nephritis. Analogy would indicate that the acute interstitial nephritis of the pathologist, occurring in acute infections and toxemias, might go on to the development of the granular contracted kidney, but, so far as definite knowledge is concerned, it must be recognized that this is probably rarely the sequence of events and that practically chronic interstitial nephritis is usually one of the concomitants and generally a comparatively late one of arteriosclerosis.

At the present time chronic interstitial nephritis is recognized as constituting but a subsidiary part of a more general disease in the majority of cases; while, in older days, it was regarded as an independent condition. According to this later view, polyuria and albuminuria may be regarded as significant merely of a renal form, or a renal phase, of a general vascular disease.

Contrasted with these three types of permanent renal disease, there is a large number of conditions in which the kidney is temporarily involved, in which evidences of renal irritation or inflammation exist, and in which the pathologist might discover some pathologic changes, though the subsequent course is one of rapid resolution. The mere element of speedy restoration is evidently not

* Read in the section of Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

dependent so much on the extent as on the character and intensity of the renal trouble. Such cases are frequent in association with infectious febrile processes and with circulatory disturbances. It is in these cases that some of the clinical signs, especially albuminuria, of Bright's disease occur, and it is these that cause the difficulty in distinguishing between true Bright's disease in the sense of the clinician and the nephritis of the pathologist. Doubtless until some means have been devised for estimating accurately the functional capacity of the kidney, it will remain difficult for the clinician to establish positive diagnoses and prognoses in certain borderline cases, but in the meantime a close study of the general features of the cases in which albuminuria and casts are encountered, but in which lasting nephritis does not follow, will enable the clinician to avoid error in the majority of instances.

Before proceeding to further discussion let me emphasize with all earnestness that diagnosis in renal disease can not proceed from the urinary examination alone any more than can the diagnosis of cardiac disease from physical exploration alone, or that of typhoid fever solely from the examination of the serum for the reaction of agglutination. Taken in conjunction with the general symptomatology, accurate examinations of the urine are indispensable, but without the general conditions as a check urinary examination may be as misleading as would be the symptoms without the urinary findings.

It has interested me to look over the records of my private cases to determine how frequently albuminuria occurs in the run of cases in general office practice. These figures have the advantage that they represent the results of a single examiner's work and from one method of examination (heat and nitric acid). In the great majority of cases several examinations were made at different times, an added advantage considering the frequency with which albuminuria occurs as a temporary condition.

Among 581 cases there were 51 cases of undoubted clinical nephritis or Bright's disease, exclusive of chronic interstitial nephritis. In all of these there was constant and more or less uniform albuminuria.

In 74 cases of arteriosclerosis there was more or less inconstant albuminuria, without casts in 16 and with casts in 58. A number of these cases might properly have been classed as chronic interstitial nephritis. In all of these there was constant and more or less uniform albuminuria. In practically all it may be assumed that a certain degree of chronic interstitial nephritis existed, though other manifestations of arteriosclerosis dominated the clinical picture.

In 187 cases there was occasional or less often constant albuminuria in association with acute infectious diseases, gout, diabetes, tuberculosis, syphilis, cystitis, pyelitis, cardiac diseases, movable kidney, gallstones and jaundice, stone in the kidney, in occasional cases of other diseases, in pregnancy, and in adolescents without discoverable disease.

In 41 cases, in gouty or so-called lithemic subjects, there was occasional albuminuria at times when the urine was excessively acid.

In 215 cases (37 per cent.) there was no albumin at any time. In 11 cases casts were found without albumin.

I am ready to admit the unreliability of statistics, but would vouch for the essential accuracy of these figures. It might seem at first that urinary examina-

tions are of little value, if out of 581 cases albuminuria without Bright's disease occurred in 202, no albuminuria in but 215, and as an indication of Bright's disease in only 51. Closer examination of the records, however, establishes several important points.

With very few exceptions, the albuminuria of the supposedly non-nephritic cases was qualified as "albuminuria in traces," and with nearly equal frequency repeated examinations showed that the condition was fluctuating in degree or temporary in duration. The exceptions to these rules were for the most part cases of arteriosclerosis, in which, as I have said, there was doubtless always a greater or less degree of chronic interstitial nephritis, though the renal manifestations were not generally predominant.

To establish the frequency of albuminuria in cases of severe acute infections and in cardiovascular diseases I have collected the data obtained from my records at the University Hospital. Summarizing the records of a great variety of infections, it is found that among 176 cases albumin was present in 59 and absent in 117. Among 304 cases of typhoid fever albuminuria was present in 83, clinical nephritis in 14, and albuminuria was absent in 207.¹

Among 154 cases of cardiovascular disease, albumin or casts, or both, occurred in 81, and neither albumin nor casts in 73.

Table 1 shows the conditions in different types of such diseases:

| No. | Disease. | Albumin and casts. | No. Albumin. |
|--------|------------------------|--------------------|--------------|
| 1. | Aneurism | 6 | 15 |
| 2. | Arteriosclerosis | 10 | 6 |
| 3. | Myocardial disease | 10 | 8 |
| 4. | Malignant endocarditis | 3 | 3 |
| 5. | Aortic valve disease | 8 | 7 |
| 6. | Mitral disease | 29 | 26 |
| 7. | Combined valve disease | 15 | 10 |
| Totals | | 81 | 73 |

In considering these figures it must be remembered that a certain number of the cases were instances of combined cardiac disease and Bright's disease, but it is equally clear that the large proportion of cases of albuminuria require a further explanation.

A careful scrutiny of the clinical course of these cases of cardiovascular disease showed that almost without exception the condition of the urine was extremely variable, and fluctuated in correspondence with variations in the underlying condition, so that the degree of albuminuria was in a measure commensurate with the degree of cardiac insufficiency.

I wish to refer very briefly to the occurrence of albuminuria in cases of secondary syphilis, because I have found in a number of cases that the discovery of albumin has been looked on with great apprehension. My experience in this field has naturally been limited, and I content myself, therefore, with calling attention to the fact that slight or sometimes considerable albuminuria is not infrequent in the secondary stage of this disease. It has seemed to me that active mercurial treatment might in some instances be the responsible agent, but I am sure that slight albuminuria occurs independently of this, and in my experience it has proved a matter of no serious moment.

1. In explanation of the lower proportion of non-nephritic hospital cases showing albuminuria as compared with my private cases, I must explain that the examinations in the latter were made with much more care to detect even the slightest traces of albumin. In addition to the greater experience of the examiner, an important factor in this greater accuracy was the use of a reflector of uric acid which gives a light peculiarly favorable to the detection of faint turbidity in the liquid tested. The method used was to heat only the upper part of the column of urine in the test tube.

Another subject on which I wish to say a few words is that of the special form of albuminuria found in amyloid disease of the kidneys. It is well known that in chronic forms of albuminuria, the serum albumin is in great excess of the globulin. The conditions are reversed in amyloid disease to such an extent that preponderance of globulin in a chronic case warrants a strong suspicion of amyloid disease of the kidney. In several cases I have in this way been able to recognize this condition even before sufficient amyloid disease of the liver or spleen had occurred to enlarge these organs and to make them palpable.

In conclusion, let me say that the purpose of this paper has been primarily to direct attention to the fact that albuminuria is an extremely common occurrence in various general diseases and that, though it may in a sense indicate an inflammatory condition of the kidney, such inflammation or nephritis may be of merely pathologic rather than of clinical significance, unless the albumin is considerable in amount and more or less constant in occurrence. The nature of the accompanying tube casts must not be relied on too greatly to determine the seriousness of the renal lesion, and in particular the presence of an occasional hyaline cast or even the frequent occurrence of such must not be regarded with too much apprehension. The modern method of centrifugation and the consequent examination of quite fresh urine increases the likelihood of our finding casts, and there is often difficulty in distinguishing between the insignificant cylindroid of the mildest grades of renal irritation and the definite hyaline cast of more decided disease. Even the latter, however, is so frequent in cases of arteriosclerosis, cardiac disease, hepatic disease, jaundice and gouty affections without serious renal disease that its significance is more or less trivial, unless general clinical conditions accentuate the importance of its presence. I do not wish to convey the wrong impression that I estimate lightly the importance of urinary examination; far from it. But I know from much experience that a trace of albumin is too often magnified in importance in the physician's mind, and that the clinical conditions as a whole are not sufficiently considered. Above all things, it is important in cases of suspected renal disease that the urine be repeatedly examined and its constant or fluctuating condition be taken into account.

CYLINDRURIA.

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The subject of casts in the urine has been a favorite one for study in the clinical laboratory of the Johns Hopkins University during the past five years. In addition to such studies, this paper contains as its most important portion the report of a study of the records of all the cases of nephritis admitted to the medical wards of the Johns Hopkins Hospital, over 1,000 in number, about 500 of which came to autopsy, together with other cases clinically resembling nephritis but with no anatomic evidence. I and my associates in the laboratory wish to express our indebtedness to Dr. Osler for the use of this abundant and most valuable material.

CASTS; THEIR CLASSIFICATION AND FORMATION.

Castes have been classified as cellular, granular and amorphous. The latter show no structure, being homogeneous or at the most with only a faint striation. All combinations of and transitions between these forms occur.

(1) *Epithelial Casts*.—These are made up of, or have attached to them, renal epithelial cells; that is, cells which vary much in size but have always (when it is visible) a round nucleus. The cells are flat and polygonal as a rule, not spherical. The protoplasm is usually (always?) very much degenerated, the cell being but a mass of fat, myelin, or albuminous granules, which may swell the cell to a great size. When these cells retain their finer structure, which is not often, they are considered to resemble those from the straight collecting tubules, not the secretory cells. An epithelial tubule could not pass a loop of Henle of normal bore, but single cells or the detritus of cells from above could attach themselves to a cast forming below. Most epithelial casts are masses of epithelial cells united by a hyaline matrix, but some are certainly desquamated portions of the tubules with the lumen, and with even the intercellular protoplasmic bridges visible. In one kidney which we have had an opportunity to study, in sections at the juncture of cortex and medulla the invaginated tube of epithelium could be beautifully seen, which, breaking loose, would be a cast. That is, at these portions were two tubes of epithelial cells, the intact one lining the tubule and an invaginated also intact interior one, evidently loosened and rolled down from above. Such perfect fragments are called "epithelial tubules." This being the origin, it is the free surface of the cell which forces outward the base lining the lumen.

All transitions between these and the coarsely granular and fatty casts are seen, and the question arises where to draw the line. In this laboratory we consider the cast epithelial if the cell outline of one cell with a round nucleus can be made out.

Also a hyaline cast with one epithelial cell attacked ranks as an epithelial cast.

We doubt, with Cabot, that all the mononuclear cells are renal; also that from study of the degenerative changes or "atrophy" of these cells any conclusions concerning the changes in the cortex can be drawn, yet we believe that the cuboid or flat polygonal cells are of renal origin.

(2) *Coarsely Granular Casts*.—All transitions between epithelial, leucocyte and these casts can be found. These are of a yellowish-brown color, very opaque, hence conspicuous objects, covered by coarse granules. Some of the granules are soluble in acetic acid, hence of albuminous nature; others are soluble in ether and take the fat stains; still others resemble the myelin of the sputum. These casts are probably either epithelial casts the cells of which have undergone degenerations, or are agglutinations of the detritus of epithelial cells which have gone to pieces in the tubule before or after desquamation.

In the laboratory we have had occasion to study another form. In cases of subacute nephritis large cells sometimes occur, two or three times the size of an ordinary renal cell, or even larger, which are masses of fat and myelin droplets and resemble colostrum corpuscles. We believe these to be of renal origin. In some cases these cells occur in rows of two or three; in others the cell divisions are indistinct, while still others form typical granular casts. Among

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the coarsely granular casts are included hemoglobin casts, which are of a brownish-red color.

(3) *Fatty Casts*.—These striking objects are masses of fatty granules often preserving the outline of the original epithelial cells. They are yellowish or even blackish in appearance and soluble in ether; fatty acid crystals may project from them. The fat globules may be enormous, almost as large as a cell. They occur especially in malarial nephritis.

(4) *Finely Granular Casts*.—The term "finely granular" is indefinite. It includes casts very similar to the coarsely granular save that the granules are much finer; also many with little resemblance to these latter, since they are almost translucent, much smaller, less conspicuous, and are covered by, or have scattered over a part, very fine granules which are seen to belong to the cast and not to be a mere deposit on a hyaline cast; many of them are intermediate in appearance.

(5) *Waxy Casts* (also called colloid or amyloid).—These casts are very refractile, sharply contoured, often of a white or yellow color, homogeneous, and show a great tendency to split transversely, hence they are fissured and are often in small fragments. They may have, rarely, cellular elements attached. They show a marked tendency to spiral twisting. Two groups are present, the clear white and the yellow; the first look as if cut from paraffin, the second as if from wax. They seem to be formed of a stiff, firm, brittle material. They look broader than the hyaline casts. Some give the amyloid reaction as a whole, some in portions; more do not, and the reaction is seldom really satisfactory. Some observers deny having ever found a good amyloid cast (Cornil). They are quite resistant to acetic acid.

The name "waxy" is best since it signifies only physical properties, not chemical, as the term amyloid does.

Between this group and the hyaline casts is a very large group of casts which are perhaps the commonest of all, which have not quite the physical properties of the waxy, yet are more distinct and solid-looking than the hyaline, which name they bear. It is important to recognize that some of these have deposited on them fine granules from the urine, giving them the appearance of the finely granular cast.

(6) *Hyaline Casts*.—There are the colloid or glassy casts. They are pale, very slightly refractile, watery in appearance and difficult to see unless the light is almost shut off or unless one notices crystals or cells sticking to them. For this reason, and because they are so often few in numbers it is better to stain them with Lugol's solution, which gives a yellow color, or with gentian violet. If low light and no condenser be used, however, this is unnecessary. They give the microchemical tests of albumin. They may have the same cells attached as the other casts. They are beautifully cylindrical, with rounded ends, a uniform diameter as a rule but not always, may be either broad or very narrow, and sometimes are twisted like a corkscrew.

Hyaline casts sometimes have a fibrillar appearance and may disintegrate, in which case they resemble a Curschmann spiral in miniature; that is, these consist of spirally wound threads.

Branching casts have been described. Some taper considerably along their length. Their outline is very regular. These casts occur in all conditions, but this is the only form which follows certain disturbances in which there is no question of inflammation. They are so different in appearance from the hyaline casts just mentioned as "intermediate" that they really deserve a sep-

arate name. They are easily dissolved by acid, or alkalis, are soft, elastic, and easily destroyed by cold or heat. They are the most important to recognize since they occur so often alone. They are the first to disappear in a urine which is becoming alkaline, hence the freshly voided urine should be centrifugized and studied on a broad slide without cover-glass, which is covered well with the urine, and using the low power. Several slides should thus be examined before the search is abandoned.

Hyaline casts seem to be the ground substance for most epithelial, pus and blood casts, and hence for most of the mixed variety; one end of such a cast may be purely hyaline.

(7) *Blood Casts*.—Blood casts are a coagulum of red blood cells which have formed within the tubules. The term is also applied to any of the above casts with red blood cells attached. Some of the blood cells are so pale that it is hard to recognize them. Many have crystals of hematoidin attached.

(8) *Hemoglobin*.—Casts of hemoglobin occur in hemoglobinuria, the hemoglobin occurring in amorphous masses. Some seem to be other casts impregnated with hemoglobin.

(9) *Fibrin Casts*.—These are rare, if even they ever occur. They are opaque, granular, longitudinally striated, often ribbon-like and twisted, often fibrillar and branched at their ends; in them are mixed fragments of blood cells and granules of pigment.

(10) *Pus Casts*.—These have a formation similar to that of the blood casts. The nuclei must be first seen and their polymorphous nature decided, to be sure it is not an epithelial cast. This may be done by adding acetic acid. Pus cells are smaller, more spherical and finely granular than the epithelial casts.

(11) *Cylindroids*.—We should prefer to separate these into two groups. The first are the so-called "mucous threads." Some are short, some are very long extending through several fields, singly or in snarls. They are flat ribbons of mucus which no one would confuse with a hyaline cast. Their diameter varies much, but on the whole they are narrower than hyaline casts. They are not cylindrical, but ribbon-like, as is well seen in their twists. Such threads make up the nubecula. They usually are branched and taper off into threads the ends of which it is almost impossible to see. They have a finely striated surface, sometimes finely granular. They do not dissolve on adding acetic acid.

(12) *Other Elements*.—In addition to these, and differing much from them in appearance, are seen elements which appear exactly like hyaline casts for the most of their length, but which at one end run off in a longer or shorter thread. They are often broader than hyaline casts, and are frequently not strictly cylindrical, but somewhat club-shaped. Those observers who are particular on this point exclude from the list of casts anything which has one end at all tapering or thread-like. These casts appear to be circular on cross section. They have not always the same fibrillar nature and are more refractile than mucus threads, hence are easily picked out in a snarl of the latter. They occur also in those circumstances in which casts would be expected and have the same significance. They occur when only a few hyaline casts are present, but a trace of albumin, and when the acetic acid precipitating body is abundant; we have often been tempted to associate them in some way with this body. We are certain that for the greater part of their length they are like typical hyaline casts, and could the fine end be broken off, as we sus-

pect is done by the centrifuge, the fragment without the tail could not be distinguished from a cast. Like the mucous threads and hyaline casts these threads may be covered by urates and hence have the appearance of granular casts. These, like hyaline casts, and differing from mucous threads, often have cells or detritus of cells attached. Chemically these bodies are like casts and are soluble in acetic acid. The point is of considerable importance, for mucous threads certainly arise from the mucous surface, while if casts they should arise in the renal parenchyma. They were first described as of the same significance as casts. It is perhaps safest to observe the old rule and exclude from the list all which have a definite tail on one end, and if, as often happens, one is in doubt to call it a cylindroid.

(13) *Combined Casts.*—These comprise nearly all the casts in most cases, and they are the hardest to classify. It is customary to call a cast with a recognizable epithelial, pus, or blood cell attached to a cellular cast, an epithelial, pus or blood cast, although many workers prefer to use the term "hyaline with leucocyte attached," etc. The most common mixed casts are hyaline and finely granular, or waxy and coarsely granular.

(14) *Bacterial Casts.*—Masses of bacteria in the shape of casts occur in purulent infectious pyelonephritis and in pyemic kidneys, but a cast also may become permeated by bacteria, either in the body or after being voided in the urine, in a remarkably short time.

(15) *Urate Casts.*—In uric acid infarcts of the kidneys of the newborn, masses of sodium urate may be found in the urine.

(16) *"Pseudo Casts."*—This term is used by some observers (Neubauer and Vogel), to mean a cast which is not a mould of the tubule, formed of some homogeneous material, hence the term included epithelial, pus and blood casts; but the term, we believe, should apply to origin, and the question is: Does it come from a tubule? It is not at all unusual for an urate sediment to assume the shape of a cast. All casts in a concentrated urine may become encrusted with urates and hence be of a dark, homogeneous granular nature. True granular casts are not homogeneous; they are coarser and more refractile than these pseudo casts which also have uneven edges and disappear on warming. Other salts forming such casts are uric acid, calcium oxalate phosphates, sodium urate and ammonium urate. Scratches on the glass are sometimes confusing.

Characteristics of Casts.—The length and the breadth of casts vary. Usually they are from .005 to .05 mm. in width. Their size may be from very small fragments to 1 mm. in length or longer. These very long casts are almost always hyaline. Some casts are almost on the limit of vision, but vegetable fibers must be excluded. Their diameter is that of the tubule. From the size of the casts no conclusions can be drawn of their source, so much does the size of the tubules vary in various conditions. It was formerly supposed that the beautiful corkscrew forms so often seen came from the convoluted tubules, but this is improbable, since any corkscrew shape would certainly be effaced during the passage through a straight tubule. Some are spiral all their length; others only at one end. This, says Senator, merely shows them to be composed of a tough, elastic material which has been squeezed through a narrow canal, or through a narrow orifice. The end of the cast is seldom split or forked.

Origin of Casts.—The origin of epithelial casts, especially of those with a lumen, is not disputed; yet they mean not necessarily a serious lesion, but merely des-

quamation of epithelium such as occurs from all mucosae as the result of "catarrhal" inflammation; neither is the origin of blood and pus casts disputed. We believe these casts, the epithelial, blood and pus, to be much more common than the usual urine records would indicate, perhaps since the general belief that they indicate a rather serious condition leads one to misinterpret or to pass them by when found in some trivial condition. As a matter of fact they occur whenever there is an acute, that is a sudden, disturbance of the cells, whether inflammatory or not. The coarsely granular casts quite certainly are formed from epithelial by a granular degeneration of the cells to the waxy casts, and all transitions from the coarsely granular may be found. This transition may also occur in the leucocyte casts, but is less true of the blood casts. Such transitions are supported best by the study of sections of the kidney.

The rapidity with which waxy casts may appear, unaccompanied by epithelial and coarsely granular casts, and the transitions between them and the hyaline, lead one to suspect that they differ from the refractile hyaline in only physical properties. One explanation is that they are hyaline casts which have remained in the tubules a long time and the originally hyaline or granular substance has become waxy through "amyloid metamorphosis." The sudden appearance of waxy casts may mean merely the washing out of those long in the tubules. We do not believe that the transition from epithelial cast to coarsely granular and from these to finely granular, and then to waxy, applies in most cases, but may for some. These transitions can not be followed in the casts when these are in the urine. Against this theory may be mentioned the sudden appearance of enormous numbers of one group without a corresponding increase of the so-considered previous stages. Waxy casts may appear in great numbers in the few last hours of life; the finely granular transparent casts in their occurrence bear almost no relation to the coarsely granular, as is best seen in the Kulz sign of oncoming diabetic coma. Yet the general ideas of their origin may still be true, and some casts may depend on the disintegration of the epithelial cells, by which they are formed; this disintegration, together with abnormal secretion, occurs in the cell while it is still a part of the tubule and exposed to the toxins, etc., in the blood. That changes in the cell thus situated are sometimes rapid we are sure, but the free cell will not go to pieces nearly so rapidly as is imagined. At least the changes, whatever they are, occur in the tubules, not later. It is true that the casts show transitional forms, and that in one case two forms may be combined, but this could have been determined during the process of formation, as well as later. The importance of this intratubular determination of form is best seen in the waxy casts. These occur when the casts remain a long time in the tubules. Those in closed tubules are waxy; the casts following an oliguria are often waxy, which is seen best in cases of decapsulation of the kidneys for subacute nephritis. We can not give any better explanation for their appearance ante-mortem.

The origin of the hyaline casts, however, has long been in dispute, some observers claiming that they are an exudate into the tubules, others that they are a product of the secretion of the cells. These casts are certainly not coagulated fibrin, since they arise where there is no suspicion of inflammation, that is, in a practically normal kidney, as with the albuminuria of the newborn. The typical hyalines do not give the Weigert's fibrin

stain. Two sources are possible: (1) That they are formed from the coagulated albumin of the blood serum, which escapes from the glomeruli, or perhaps, when diseased, through the tubules, and coagulated possibly by a ferment from the renal cells. Cylindruria, therefore, is visible albuminuria. According to this view, the difference between hyaline and waxy casts would be the amount and rapidity of excretion of this coagulable albumin, and the time it remains in the tubules. It is an interesting idea that such albumin should coagulate, for where a certainly coagulable albumin is present, as in the case of chyluria, these casts are absent; also there is little relation between albumin and casts in amount, and either may be present without the other, yet albuminuria and cylindruria run too parallel to be independent. The one may always at least be suspected when the other is found, and in nephritis especially in their amounts they have a very definite parallelism. According to this view the materials for the casts escape some distance from the point where this material is collected and formed into a cast. (The ascending branch of the loop, the straight and the collecting tubules.) (2) Other observers (Key, Beyer, Senator, Langhans) claim that these casts originate in the epithelial cells. From sections of kidneys all steps of the process may be traced. In some cases epithelial cells die and undergo hyaline degeneration, and this substance may be molded to the cast; or the epithelium may die and allow lymph to transude into the tubule which, mixing with the cell detritus, coagulates; or (Oertel, Bartels, Rodiva, Aufrecht, Cornil, Brault) the very slightly injured epithelial cell still functioning may secrete a coagulable substance. This latter is the generally accepted idea. Some cells are seen to be swollen by globules; others have excavated edges, that is the vacuoles full of albuminous matter are discharged into the tubules and there fuse.

The origin of hemoglobin casts is interesting, since hemoglobin is soluble in the urine. It may be, however, that they represent hyaline or waxy casts impregnated with hemoglobin.

Chemistry of the Cast.—The chemistry of the cast is little studied. Probably none are fibrin. Some give an amyloid reaction when there is no such degeneration of the kidneys; amyloid disease rarely has such casts. Many react reddish to gentian violet; and brownish to Lugol's fluid.

A STUDY OF THE CASTS IN A SERIES OF CASES OF NEPHRITIS AND OTHER CONDITIONS.

We are obliged to consider other things than casts alone, albumin, etc., in this study that the picture of the cylindruria may be clearer.

Active Congestion of the Kidneys.—In one case of acute lobar pneumonia without, as yet, nephritis and with the kidneys actively congested, the weight was 425 grams, the depth of the cortex 7 mm. The urine was normal in amount, of a high specific gravity, with considerable albumin and a very few finely granular casts.

Chronic Passive Congestion.—In the urine, at first scanty, dark in color, and acid, albumin appears sooner or later in traces, although sometimes in good amount. Casts are present, chiefly hyaline, rarely granular, more rarely other varieties. A very few leucocytes may be found and still fewer red cells. The points of importance in this urine are the small amount of albumin, the large urate sediment, the comparative absence of renal epithelium, and the scarcity of granular casts and leucocytes.

Of 11 cases of extreme chronic passive congestion, chiefly heart cases, yet anatomically with no microscopic sign of nephritis, in 8 the clinical diagnosis of nephritis had been made. The average weight of the kidneys was 390 grams. The cortex averaged 8 mm. in thickness (7 to 10 mm.). The amount of the urine varied with the cardiac condition, being either normal or diminished in amount. The specific gravity was high, running from 1025 to 1027 in some cases, and in but 3 cases below 1015 for much of the time. Albumin was present in all cases; in one-half of them there was only a trace, but in others large amounts, even 0.6 per cent.

Castes were abundant in 3 cases and absent in but 1; as a rule they were few in number. Here in 3 cases, as in other conditions, on some days, they were present in extraordinary numbers; on other days there were few, and these chiefly of the hyaline and granular varieties, but in some cases epithelial, pus, waxy and fatty were found.

Cloudy Swelling.—Twenty-three cases were chosen which at autopsy showed extreme parenchymatous degeneration without other evidence of nephritis. Nine of these cases were of typhoid fever, 4 of pneumonia, and the rest scattered, but all fevers. In 1 case of typhoid fever the clinical diagnosis of uremia had been made.

The average weight of the kidneys was 410 gm. (250 to 590 gm.) The cortex averaged 7.5 mm. thick (5 to 12 mm.). The urine of these cases voided from one to two days before death varied in amount from 500 to 1,900 c.c. and was of a rather high specific gravity (1015 to 1028). This varied inversely as the amount. In one case the specific gravity was for several days 1004, the amount averaging 1890 c.c. In the specimens just before death, albumin was present in traces in 12 cases, much in 5, and none in 2. The albuminuria had continued in some cases for two or three weeks; in one case the first record of its presence was 34 days before death; in the other cases it appeared much later. In 2 cases examined one week before death no albumin and no casts were present.

Almost all varieties of casts were present, particularly hyaline and granular, but also blood, epithelial, and waxy. Few were present as a rule; in 3 cases large numbers. Two cases were without albumin and without casts even to the very time of death. One was a case of tertiary lues of the brain, the kidneys showing exquisite parenchymatous degeneration and the urine a specific gravity of 1008, yet even on the day of death there were no casts and no albumin. In typhoid fever cases with the bacilli present in the urine in large numbers, repeated examinations showed no casts, although a fair amount of albumin was present. As a rule, the casts appeared later than the albumin. In one they were very numerous on the last day of life. In 4 cases red blood corpuscles and epithelial cells were present.

Fatty Kidneys.—In the severe cases of fatty degeneration or infiltration of the kidneys the amount of urine is diminished, dark and cloudy, although it may be normal in amount. The urine is present in from traces to considerable amounts. The casts are chiefly hyaline and granular, some are fatty; there are a few red blood cells and a few leucocytes, although in some cases, many. There seems to be no relation between the number of casts and the amount of albumin.

We chose from our autopsies 7 cases with extreme amount of fat in the cortex and, microscopically, no other chronic change. The average weight of these

was 380 grams (250 to 530); the cortex was from 6 to 8 mm. thick. The amount of urine was normal, and the specific gravity varied from 1020 to 1024. The albumin was considerable in about one-half of the cases, and there was only a trace in the others. In no case was albumin found two weeks before death.

The casts were hyaline and granular, few or many, the number bearing no relation to the amount of albumin. In 2 cases a few red blood cells were found, and usually some pus or epithelial cells.

ACUTE NEPHRITIS.

Acute nephritis has been divided into several various groups, chiefly from the standpoint of pathology, but for the clinician a division is very difficult. Senator separates the tubular nephritis or acute parenchymatous from the acute diffuse. In the acute parenchymatous form the tubules especially are involved and the glomeruli little or not at all. The clinical symptoms are slight or none. The urine shows only slight febrile albuminuria, diminished amount of urine of rather high specific gravity, and few or no casts. The mildest grade is simple cloudy swelling and from this are all gradations to the acute diffuse nephritis. The urine contains often a heavy sediment, in some cases chiefly of renal epithelium, and hence the name "nephritis desquamativa." The epithelial cells may be single or in casts. Hyaline casts, few or many, are present. Crystals of uric acid and calcium oxalate, red blood corpuscles are often present, and hemoglobin in granular casts or masses. The leucocytes are usually few in number. The albumin is nearly always slight in amount, in remarkable contrast to the amount of sediment, and some claim that of this nearly all is nuclealbumin from the cells.

In the acute diffuse nephritis, a good illustration of which is that following scarlet fever, the urine is diminished in amount; there may, indeed, be anuria for the first 24 hours. From 50 to 100 c.c. for the first day or so is not uncommon, but later from 200 to 500. Of 16 such cases in our series the weight of the kidneys averaged 430 grams (360 to 500), and the cortex averaged 8 mm. (It is interesting to note that the heaviest kidneys were in women.) In these cases the amount varied from 30 to 2,000 c.c., according to the stage of the nephritis. Toward death there may be a diminished or an increased voiding. The specific gravity was normal as a rule, from 1015 to 1017, but in some cases it was from 1023 to 1025 (when the urine was from 300 to 600 c.c.). It is usually of a dark color and cloudy, and blood is nearly always present, as pigment or cells.

Albumin is an almost constant feature, and yet in some severe or fatal cases there may be but traces, and this only on a few days, alternating with periods with none, even to death. As a rule it is not above 1 per cent. In the sediment may always be found red blood cells, mononuclear cells, few polynuclear leucocytes and epithelial cells from the urinary tubules, which are single or in masses, and often very fatty. Among the crystals uric acid and calcium oxalate are found, and hemoglobin, either in amorphous granules or in casts. In the hemorrhagic form of the disease in our series the red blood cells were remarkably few in number. The leucocytes were very abundant in one case of acute nephritis with multiple abscess.

Casts are present in varying amounts and may be of any form. Epithelial, hyaline and coarsely granular predominate. Blood and leucocyte casts may also be present. As a rule, the number runs parallel to the

amount of albumin, yet it varies greatly from day to day, and on some days there may be enormous numbers. In one case of acute hemorrhagic nephritis with areas of complete necrosis the amount of albumin was slight, but the casts, leucocyte and granular, were in large numbers. In one case of general septicemia the albumin was in but traces on certain days, none on others, and yet blood, hyaline and leucocyte casts were found.

In mild cases, and in severe ones as they improve, the urine approaches normal. It is said that the albumin disappears last. In most cases, however, we believe that the casts are found later.

Among our cases of nephritis were 109 of the acute form. Of those patients who recovered 64 were under 45, and 17 were over 45 years of age. Thirteen unsuspected cases were found at autopsy. In eleven cases a diagnosis of acute nephritis was corrected at autopsy, 2 being unsuspected cases of large red kidney, 1 of large white kidney, 6 of subacute nephritis and 2 of the small white kidney. Twenty-six patients were admitted during the first seven days of their illness. In the eases the urinary symptoms were almost parallel with the clinical symptoms and especially with the amount of edema. The urine varied ordinarily from 200 to 300 c.c. for 24 hours, with a high specific gravity, from 1020 to 1030, those with a high specific gravity being in all cases those with much albumin. In 11 of 26 cases this was over 1020 and in 3 cases over 1030. The amount of albumin varied much, being above 1 per cent. in 1 case, above 0.5 per cent. in 6, and in traces in 5. In all of these with traces the specific gravity was under 1018. Casts of all varieties were present—hyaline, granular, epithelial, blood and pus, and waxy in but 1. The cells which were usually present were epithelial, red blood cells and pus cells. During the course of these cases in the hospital the amount of urine increased even above two liters and in 4 cases of the 25 above four liters. The albumin dropped to a trace or to none, and the casts continued, in those previously mentioned, while waxy and fatty casts also appeared. In nearly all cases in which albumin disappeared, the casts continued longer. At the end in those not doing well there was much albumin with many casts. In this series of cases the patients did much better than those admitted later in their disease. There was little difference in the course, for those appearing with traces and those with large amounts of albumin, although the difference was in favor of those with traces. These may have been admitted after the worst was over. In those patients admitted later, for instance between the seventh and fourteenth days, 12 in number, the amount of urine averaged 9.50 c.c., in 4 over 1,500, and in 1, 3 liters. The mean specific gravity was 1015, the average 1018, and the extremes 1003 and 1030. The albumin was constantly present in larger amounts than in the first series. In 6 of the 12 cases there was over 0.5 per cent., and in only 2 were traces present. The casts were hyaline and granular, but sometimes epithelial (in 5) and blood. In one case a shower of casts followed the patient's getting up from bed. In these cases the albumin lasted longer than the casts.

Thirteen patients were admitted during the third week of the disease. Five of these had only traces of albumin; others, much. There were hyaline or hyaline and granular casts in 7 cases (those with fair urine output), epithelial and blood also in the others, in which latter group are the patients with considerably diminished output of urine (in no case over 900 c.c.).

Twenty-one patients were admitted after the third week. These were either on the road to recovery or doing badly as a result of their previous poor condition. The amount of urine varied from 3 to 4 liters in six cases. In some, the amount of albumin was very large, even over 1 per cent. Nine of these patients did poorly and we have the notes of the ultimate recovery of but two. The casts were hyaline alone in 1, hyaline and granular in 6, especially the older patients, epithelial also in 8, blood also in 9, leucocyte in 3, waxy in 2.

SUBACUTE NEPHRITIS. CHRONIC PARENCHYMATOUS NEPHRITIS. CHRONIC DIFFUSE, NON-INDURATIVE NEPHRITIS. LARGE WHITE KIDNEY.

This form of subacute nephritis, which may follow an acute attack or develop without this, is characterized by its subacute course, and often by the large amount of edema and effusions usually present in the serous sacs. It occurs especially in young persons, hard workers in exposed, unhygienic surroundings, and as a result of constitutional diseases, tuberculosis, lues, malaria, especially, also alcohol. The diagnosis is usually easy from the history.

The amount of urine is always diminished, the diminution varying as the edema, and is especially small at death. At the height of the disease it varies from about 250 to 500 c.c., but as the case improves, one may void from 5 to 6 liters of a very dilute urine. The amount also is increased as the edema or the effusions begin to absorb. The reaction is faintly acid, but in some cases is alkaline even on voiding, and in all cases quickly becomes so. This makes a search for casts difficult.

This is the form in which the albumin is greatest in amount, both relatively and absolutely. The amount varies as the specific gravity and seems to bear no relation to the edema. It usually is below 1 per cent., and for months may vary from 0.4 to 0.8 per cent. In certain cases, however, it is much greater. Cases with 2 per cent. are not rare, and Bartels has reported a case in which the amount varied from 4 to 6 per cent. As the case changes to the chronic indurative form the amount of albumin becomes less and less.

The sediments are much the same as in acute nephritis but it is more common to find coarsely granular, fatty and waxy casts. Red blood cells may practically always be found in especially large numbers in the acute exacerbations. There is little difference between the urine of the white and the mottled kidneys except perhaps that in the latter there are more red blood corpuscles, leucocytes, and fatty cells.

We have studied the reports of a series of 30 cases in which microscopically only the signs of subacute nephritis were present. This is important, since the acute exacerbation of a chronic diffuse nephritis can not clinically be separated from this form. These cases may be roughly divided into those in which there are large, pale kidneys, with considerable fatty and granular degeneration of the cells but with the glomeruli little involved, those with the glomeruli much involved, and the hemorrhagic type. Of the former, of 16 cases in 12 the clinical picture was of severe nephritis. Four accompanied various severe conditions, such as septicemia, tuberculosis, typhoid fever. The kidneys were large, averaging 420 grams in weight (220-580 gms.) The cortex averaged 7 mm. (5 to 10 mm.). The urine, for the most part, was about 500 c.c. in 24 hours, with a specific gravity practically normal. The albumin in 7

cases was present in large amounts, from 0.5 to 1 per cent.; in 5 cases there were but traces. Casts were abundant in 5 cases, hyaline, granular, epithelial, waxy in 4 and fatty in 3. Epithelial, red blood cells, and leucocytes were present. In this form there was a certain disproportion between the amount of albumin and the number of casts in favor of the latter.

In 8 cases the glomerular involvement was very prominent. The kidneys averaged in weight 496 grams and the cortex 9 mm. The amount of urine was slightly greater than in the preceding cases (from 600 to 1,000 c.c.), and the specific gravity about 1020. The amount of albumin was large in 5 cases. Casts were very abundant in 4; in 2 the casts were in great numbers and the albumin was but a trace. No fatty casts were reported in this group.

One would expect that a glomerular involvement would affect particularly the amount of albumin, the tubular involvement especially the number of casts, and while in general this may be true, clinically it is of little importance since the two anatomic conditions are always present and variations are but slight.

Hemorrhagic Form.—Of the 9 cases showing this form of nephritis, in five it was part of some general disease. The kidneys averaged 465 grams. The amount of urine was normal, the specific gravity low. Albumin was present but in traces as a rule. Few casts were present but of all varieties, and in one case with but a trace of albumin, many casts.

CASES OF CHRONIC NEPHRITIS WITHOUT AUTOPSY.

These were cases of a subacute or chronic nephritis with very acute symptoms, much edema, and effusion.

It is impossible to say whether these cases were acute exacerbations of a chronic nephritis or a subacute form. We have therefore merely divided them into two groups, those under 40 (in this group a majority of the subacute cases should occur) and those above 40 years of age.

Of the patients under 40 years of age there were 129. Of these 70 could give no cause, in 10 it seemed to follow malaria, 14 exposure to cold, and 6 grippe. The others followed a variety of diseases.

There were 61 cases with much edema. In 49, or 80 per cent., the urine presented the following features: it was normal in amount and specific gravity; albumin large in amount, in 20 per cent. over 1 per cent., in 4 cases over 2, and 1 case 3.2 per cent. The casts were in enormous numbers—hyaline, granular, epithelial, fatty, waxy, pus, and blood, in all cases in number out of proportion to the amount of albumin. Among the cells are always found renal epithelium, blood, and pus. In 2 cases cholesterol crystals were found.

In 11 of the 61 cases albumin was present in but traces, and in 1 case none yet many casts.

Of the cases with little edema there were 68 patients who left the ward improved; in 44 per cent. of these the urine presented exactly the same features as the 49 cases above described. Of the rest, in 38 but a trace of albumin was present, in 3 above 1 per cent. Of these in 15 per cent. of the cases the casts disappeared before the albumin and the disproportion was not so great between the two. Yet the relation between the two must depend on the nature of the process, and not its chronicity, since in exactly the same percentage of the cases with a history of less than 6 months' illness did the casts disappear before the albumin as in the much more chronic cases. In this group were also 10 fatal cases. Of these, in 3

there was but a trace or no albumin at the end, in 7 cases more than 0.2 per cent., in 1 case 1.1 per cent.

Subacute Nephritis (or Acute Exacerbations) in Patients Over 40 Years Old.—Of these, excepting the fatal, there were 45 cases. In 28, the first symptom had occurred within six months of admission; in 7, between 6 and 12 months, and in 10, anywhere from 1 to 35 years. No clinical division of this group was possible, hence we group them according to the urine into the following groups:

Cases with a trace of albumin, the amount and specific gravity practically normal; albumin but a trace, and casts only hyaline and granular; cases with a measurable amount, but under 0.2 per cent.; the casts were of many varieties, hyaline, granular, epithelial, waxy and blood casts were found; and cases, in which there was still more albumin, all kinds of casts were present, including many epithelial, fatty and waxy. In these last cases the casts were sometimes in the background, while in 1 case of leucic nephritis with 2.2 per cent. in many records no casts were found at all. In other cases, all kinds and many were found. In addition to these, there were 10 fatal cases; 4 of the patients died with traces of albumin: of these 1 had enormous numbers of casts, all granular and hyaline; 2 had few casts. In 4 the albumin was greater in amount, the casts either hyaline or hyaline and granular, and in 2 cases none. In 2 cases there was over 0.2 per cent. albumin, with hyaline and granular casts.

CHRONIC INTERSTITIAL NEPHRITIS.

Chronic interstitial nephritis, even in advanced cases is marked by its very insidious course. Its only symptom may be a slight albuminuria, and this may be absent over long periods. Later the albumin becomes permanent, casts appear, and later polyuria. The urine is increased slightly at first, but in a well-developed case from 2 to 3 liters are voided daily, and rarely even as high as 12. On the other hand the amount may at times sink to normal and even under. It is pale, clear, definitely acid, and of a specific gravity which is constantly between 1010 and 1005. This low specific gravity of a morning urine is always significant of this condition. The molecular concentration is diminished. The albumin seldom rises above .05 per cent. and usually is in mere traces. Casts are few. They are often absent in the morning voiding and may, indeed, be present only after a day of unusual exercise, or an especially hearty meal or some unusual excitement.

Of arteriosclerotic kidneys the urine contains the faint trace of albumin which occurs late and is often intermittent. Cases of the so-called contracted kidneys, particularly those albumin-free, belong here. The sediment is scanty and difficult to find. The urine should be centrifugalized and search made in large amounts of urine. After a long search but one or two casts may be found, usually hyaline, although sometimes a finely granular. Renal epithelium is sometimes found, a few leucocytes, rarely a red cell, and yet many after over-exertion, etc. Uric acid and calcium oxalate crystals are common.

During acute exacerbations the urine often loses this character entirely, and it may be very difficult to distinguish the condition from acute nephritis. It is well to examine the morning and the evening urines separately, and especially after a day with a particularly hearty meal or severe exercise. During the whole course the urine in this condition resembles that found in other conditions so nearly that the clinical history and the

physical examination of the patient can not be dispensed with. The urine alone, for instance, may resemble the acute or the subacute nephritis during convalescence, waxy kidney, and the cyclic, or the so-called physiologic, albuminurias.

A division of this form into groups is exceedingly difficult; in fact, the size and color of the kidney is almost the only criterion since in nearly every case all its histologic elements are affected by degenerative, inflammatory and regenerative processes. This form of nephritis is of almost physiologic occurrence in every elderly person, the kidney becoming old with the rest of the body, and therefore slightly sclerotic. If the process, however, is simply sclerosis there should be no urinary symptoms, and hence such cases are not suspected before the autopsy. As a result of hard work, worry, various diseases as gout and lues, and certain poisons like lead and alcohol, there is degeneration of the epithelial elements and inflammation, resulting in a new growth of connective tissue, which may be general or focal, subcortical or periglomerular. The kidney becomes hard and firm, diminishes in size, and finally may be but a remnant of an organ.

In some cases contracted kidneys are found at autopsy which could not possibly have been recognized clinically from the urine. These show that a nephritis limited to foci can heal. In all such cases if it be the sclerotic process which predominates there may be practically no urinary symptoms, and at autopsy kidneys of surprisingly small size have been found. Other cases are the result of a preceding acute or subacute nephritis. The only classification which can be made, apart from the weight of the kidney and the thickness of its cortex, is according to color, hence the division into red and white kidneys, the red kidneys being the result particularly of arteriosclerosis as a primary factor. The red kidneys are large, firm, beefy, the sclerosis is considerable and yet the size of the kidney is seldom as much diminished as in the white form.

CHRONIC INDURATIVE (INTERSTITIAL) NEPHRITIS. CHRONIC DIFFUSE NEPHRITIS. WHITE KIDNEY.

Of these we have had 174 cases with autopsy. In all the following pages by weight is meant that of both kidneys.

Kidneys Over 300 Grams in Weight.—In this group are 79 cases. Of these, in 38 there was no acute renal process. The condition in some was found accidentally on a patient dying of some other disease. The weight of these kidneys averaged 330 grams, and the cortex averaged 6 mm.

The amount of urine was practically normal, as also the specific gravity. Albumin was present in traces as a rule (26 cases). In 10 cases, however, it was present in abundance. In 5 cases on some days there would be a trace of albumin, on other days none, while in 1 case no albumin was ever found.

The casts were hyaline and granular, very rarely fatty and epithelial. In 16 cases no casts were ever found. We would emphasize the fact that 5 of these 16 were cases of carcinoma, 3 of arteriosclerosis. In 7 cases the casts were in large number. In the sediment, also, were leucocytes, epithelial cells and red blood corpuscles. In the former admissions or at the entrance to the hospital it is the rule that neither casts nor albumin were present or but a trace of albumin without casts.

In 41 cases the kidneys showed also an acute process, in some only a fatty or a parenchymatous degeneration. The average weight was 380 grams; in one case, and that

a woman, 720. The cortex averaged 7 mm. Much albumin and many casts were present in 5 cases; a trace of albumin with many casts in 2, with few casts in 14, with none in 11. No albumin but casts were found in 4, and neither albumin nor casts in 2. One of these cases is interesting, since it was of pulmonary tuberculosis with extreme parenchymatous renal degeneration; the urine of the 24 hours preceding death, however, contained neither albumin nor casts. The other was a case of septicæmia. The casts were hyaline and granular, in some epithelial, blood or pus.

In 4 cases the acute element was shown by the hemorrhages present.

There were 18 cases in which there was considerable edema and in which the symptoms of nephritis were prominent. These kidneys averaged 390 grams in weight; the cortex measured 6 mm. Here also the amount of urine was practically normal, the specific gravity rather low from 1006 to 1018. The albumin was present in a trace in 7 cases, much in 5. Casts were few as a rule, the most were hyaline and granular, but there were some fatty and waxy casts. Red blood cells, leucocytes, and epithelial cells were also present. In 7 such cases without edema, with a clinical diagnosis of nephritis, the urinary symptoms were practically the same as of those with much edema.

There were 4 cases in which the hyaline degeneration of the epithelial cells was a striking point. It is interesting to note that in one such case casts were never present, but there was much albumin. In one case there were a great many waxy casts and few other forms. In a third case there was much albumin, with granular and hyaline casts, while in a fourth there was only a trace of albumin and no casts.

Kidneys Weighing from 200 to 300 Grams.—There were 57 such cases. Among them was an interesting group of 7 cases accompanying malignant disease. The average weight of these 7 pairs of kidneys was 220 grams; the cortex averaged 6 mm. The urine, both in amount and specific gravity, was practically normal. In all these cases albumin was present if at all, in traces, and in 4 cases it was present only at times, while casts were remarkably few; in 3 cases none were found. The others showed only hyaline and granular casts. In one case, however, there were very many hyalines and granulars; in another on one occasion none, on another many granulars. In this group, therefore, the casts were absent or present in large numbers. In 2 cases with very fat cortices there were no casts.

Tuberculosis: There were six cases; the average weight of the kidney was 257 grams; cortex was 6 mm. thick. Here also only traces of albumin were present in 3, none in 2, and casts few or none. There were few casts in 1, none in 4 cases. In 1 case some time before death many casts had been found. In all only hyaline and granular casts were found.

In 18 cases the nephritis was either an accidental discovery or accompanied some more important condition. The average weight of the kidneys was 260 grams; the cortex measured 5 mm. The amount and specific gravity of the urine were practically normal. The albumin in 10 cases was present in a trace, in 5 cases in abundance, while in 3 none was found. Hyaline, granular, epithelial, pus and waxy casts were found in these cases and mixed casts were common.

In 4 cases no casts were found; in a case of hemophilia there was neither albumin nor casts; in 2 cases with very fatty kidneys much albumin and many casts were present; in another case running a slight fever

much albumin and many hyaline and granular casts were found.

In this group, further, were 25 cases with definite symptoms of nephritis. In these cases the average weight of the kidneys was about 260 grams, and the cortex measured from 4 to 5 mm. in thickness. The urine was practically normal in amount and specific gravity, although there was a tendency for the latter to be below normal. The albumin varied much, from a trace to even 0.5 per cent. and was present in all cases. The casts were of all varieties, the most hyaline and granular, in two cases there were many; waxy casts were found in 3 and epithelial in 1. As a rule, the casts were few in number; in 4 cases they were many. These cases gave a long history of nephritis. Many of these patients were in the hospital on several occasions. There was a remarkable discrepancy between the amount of albumin and the number of casts.

Kidneys of from 150 to 200 Grams in Weight.—Of these 30 cases, in 7 the average combined weight was 180 grams, and the cortex from 2 to 5 mm. The amount of urine was normal, but the specific gravity in all cases was slightly low—from 1008 to 1014. Albumin was present in traces, if at all. The casts were few in number—hyaline and granular, or none. These 7 cases were not diagnosed clinically as nephritis.

In 11 cases with edema and in 11 cases without edema the clinical diagnosis was nephritis. The weight of the kidneys averaged 180 grams. In both groups, the cortex averaged 3 mm. The amount of the urine of both groups was normal; the specific gravity low, as a rule, in some cases normal. The amount of albumin varied greatly, from a trace to 0.7 per cent. Casts were present in great variety and numbers; in some cases there were many and all forms; in some none. Red blood cells were commonly present. It should be borne in mind that all these cases mentioned with a clinical diagnosis of nephritis were acute exacerbations of a chronic form. From the urine alone, however, such a diagnosis could not be made.

In those cases with much edema the casts were abundant in 3 cases, very few in 3, while in those with little edema none were found in 5 cases and many in but one. In this latter group only hyaline and granular casts were mentioned; in the former all varieties in some case.

Kidneys Below 150 Grams in Weight.—Of these, there were 8 cases; the sum of both kidneys averaging 180 grams and the cortex measuring from 2 to 4 mm. The urine was either normal in amount or slightly diminished. The specific gravity was often low, but sometimes normal. The amount of albumin was a trace in 6 cases and a larger amount in 2. The casts were chiefly hyaline and granular, with epithelial in 3 cases and waxy in 2. In 4 cases casts were very scanty and at times not found.

Such were the terminal urinary features of cases which commonly pass as small contracted kidney and of which the classical urinary symptoms are quite different from the above. Polyuria is one of the first complaints; the patient rises at night several times to void urine of a light yellow color, with no gross sediment; the specific gravity is constantly low, varying from 1005 to 1012. Albumin is present in traces with intermissions of none for periods of from a few days to months. In the sediment very few cells and casts are found. For the latter it may be necessary to centrifugalize and to examine a large amount. The casts will be of a hyaline or finely granular nature. It is interesting to note how many of

these specimens of urine have a few red blood cells in the sediment. Functionally the kidney is almost perfect. Later, however, and this includes all the cases mentioned, the kidneys are the seat of an acute process, the amount of urine diminishes, the specific gravity rises and albumin and sediment increase so that from the urine alone one would suspect an acute exacerbation of an acute nephritis in a kidney of much greater weight than he finds at autopsy. In certain other cases, however, in which it is not the renal symptoms which predominate at death, the amount of urine may grow larger and larger until a permanent catheter is necessary, the patient dying in uremia.

In 7 of these cases hyalin was present in the capillaries. In one, with combined weight 155 grams, albumin was 0.3 per cent., casts small in number, and when present hyaline and granular. In one of 220 grams' weight the albumin was 1.2 per cent. and the casts in large numbers, hyaline, granular and especially waxy and fatty.

(To be continued.)

[THE REMAINDER OF THIS SYMPOSIUM ON NEPHRITIS, INCLUDING THE DISCUSSION, WILL BE PUBLISHED NEXT WEEK.]

A STUDY OF BRAIN INFECTIONS WITH THE PNEUMOCOCCUS.*

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Following is a report of twelve cases of human brain infection with the pneumococcus, together with the results of inoculation of the pneumococcus in the brains of guinea-pigs. Both the human and the experimental material have been used to establish the order and time relations of the acute inflammatory changes. The work is on the lines of our study of encephalitis due to the *Staphylococcus pyogenes aureus*,¹ but was particularly suggested by the case of pneumococcus brain infection (here abstracted as Case 1) reported by Bullard and Sims² from this laboratory in 1904.

Prof. W. T. Councilman and F. B. Mallory have looked over the work. On the bacteriologic side we have been much aided by Drs. C. W. Duval and P. A. Lewis, of the hospital staff. We wish to thank Drs. J. H. McCollom, A. L. Mason, G. B. Shattuck, F. H. Williams, C. F. Withington, G. G. Sears, E. M. Holmes, and G. A. Leland for their clinical notes, and Drs. F. B. Mallory, J. H. Pratt, A. R. Diefendorf, H. C. Low, H. A. Christian, R. L. Thompson, S. B. Wolbach, C. W. Duval, P. A. Lewis, and E. B. Bigelow for their autopsy records. We are ourselves responsible for the histologic work.

CASE 1.—This was a case of severe bronchitis in a man of 50 with venereal and alcoholic history.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

† From the Pathological Laboratory of the Boston City Hospital.

1. "A Study of Acute Hemorrhagic Encephalitis (*Staphylococcus pyogenes aureus*).", E. E. Southard and C. W. Keene, Amer. Jour. of Med. Sci., March, 1905.

2. "A Case of Diffuse Encephalitis Showing the Pneumococcus." W. N. Bullard and F. R. Sims, Boston Med. and Surg. Jour., December, 1904.

Clinical Summary.—Cerebral symptoms developed after a month's illness, ushered in by increasing weakness, fever and mild delirium (symptoms on admission). Two days later there appeared flaccid paralysis of the left extremities, with some rigidity on the right, cyanosis, and incontinence. There was gradual failure, with rapid respirations, raised temperature, deepening coma, and death on the seventh day.

Anatomic Summary.—There was acute purulent bronchitis with edema, softening and punctiform hemorrhage involving the greater part of the right cerebral projection system with foci in the left centrum semiovale.

Microscopic Findings.—There were pneumococcus septicæmia, slight arteriosclerosis affecting all the organs, acute bronchopneumonia, extensive diffuse encephalitis with hemorrhages and cellular lesions related to the cortical vascular system and confined to the subcortical region. The lesions consisted of accumulations within and surrounding the adventitia of large numbers of mononuclear cells (granule cells), and small numbers of lymphoid and plasma cells, with a few polynuclear neutrophile cells and a few eosinophiles.

There were solution and fatty change of the myelin in the surrounding tissue, and hyperplasia and proliferation of neuroglia cells with formation of numerous astrocytes. There were edema changes in the nerve cells of the cortex, fatty changes in the cord, and early central chromatolysis of the anterior horn cells.

Lanceolate diplococci were present in cultures and were found in and surrounding the cells of the exudate in the lung lesions and in the tissue and granule cells of the brain.

CASE 2.—H. H., a boy of 10, was admitted to Dr. J. H. McCollom's service at the south department of the Boston City Hospital, July 13, 1898.

History.—He had measles and whooping cough at 5, mumps at 8 years of age. He was well the day before entrance. He ate a heavy lunch before bedtime, and had headache and vomiting during the night. He "slept" till next afternoon, when respirations became stertorous. The boy was admitted to the hospital in coma, with stertorous and labored breathing, profuse nasal discharge, dilated pupils not reacting to light, râles throughout the chest, small, high tension, rapid pulse, tense and prominent abdomen, exaggerated patellar and plantar reflexes, anesthesia of extremities and marked muscular sensibility to pain. He was catheterized and the urine showed a large trace of albumin. The coma continued. The patient vomited twice. Death occurred about one hour after midnight.

Clinical Summary.—A boy of 10 goes to bed one evening after a heavy lunch, vomits and has headache in the night, sleeps all day, is admitted to hospital in coma and dies twelve hours later, less than twenty-eight hours after the onset of the symptoms.

Anatomic Findings.—The autopsy, performed by Dr. F. B. Mallory, July 14, 1898, showed: Pia injected and edematous; no increase of fluid in ventricles. Small areas of hemorrhage and beginning softening were found in the cerebral cortex beneath the olfactory lobes, along the inner side of the right temporal lobe, and in the right side of the pons. No area exceeded 1 cm. in diameter.

Anatomic Diagnoses.—Pneumonia in middle lobe of right lung and base of left lower lobe. Petchial hemorrhages in skin over chest. Hemorrhages in mucous membrane of bladder. Hemorrhages in cerebral cortex.

Microscopic Findings.—Cultures from the brain and kidney showed a variety of organisms, including the pneumococcus; from lung, pneumococcus; from heart's blood, liver and spleen, stercile.

The pia mater over the areas of softening showed considerable edema, with polynuclear leucocytes and mononuclear cells in about equal numbers. Leucocytes wandered freely through the cerebral tissue. The subpial layer of neuroglia was thin. The areas of softening consisted of small hemorrhages, with polynuclear leucocytes, some of which contained numerous lanceolate diplococci. In some cases the free blood was confined to the adventitial clefts. Lesions of the arteries were rare. The walls of the small veins were sometimes obscured by masses of leucocytes; but there was no thrombosis or lifting of endothelium by exudate.

CASE 3.—W. B., a man of 70, was admitted to Dr. G. G. Sears' service at the Boston City Hospital, Sept. 26, 1898.

History.—Three or more days before admission his face had begun to swell, burn and itch, and the lids swelled so that he could not see. Temperature was 101 F. He was slightly delirious, but could be aroused to complain of swelling ankles, shortness of breath, palpitation and dizziness. He was said to have had "shocks" eight years and one year ago. Thorax, abdomen and extremities were negative. The urine showed a trace of albumin and numerous fine granular casts, with a few cellular elements. The patient died four days later. He fell out of bed during delirium the night of entrance and cut a gash in the left occiput. The delirium continued. Three days after entrance the temperature began to rise and the pulse to fail, the respirations became stertorous. Death followed the next morning.

Clinical Summary.—Man of 70, with heart symptoms and kidney disease and a history of paralytic shocks, dies in delirium a week or more after the onset of facial erysipelas.

Anatomic Findings.—The autopsy, performed by Dr. J. H. Pratt, Sept. 30, 1898, showed:

Dura distended over cortex and convolutions flattened. Beneath the dura over the left parietal lobe there was a thin layer of coagulated blood. On the cortex beneath the arachnoid were scattered areas of greenish purulent exudate, especially marked over the frontal lobes, and also over the cerebellum. The base was not involved. The ventricles were dilated, and contained a small amount of clear serous fluid. The walls were not softened.

Anatomic Diagnoses.—Acute purulent meningitis. Old tuberculous focus in lung. Edema and congestion of lungs. Acute bronchitis. Chronic obliterative appendicitis. Chronic interstitial nephritis. Coronary endarteritis. General arteriosclerosis. Chronic interstitial orchitis.

Microscopic Findings.—Cultures from heart's blood, liver, meninges and lateral ventricles showed pneumococcus. Spleen and kidneys were sterile. Sections of cortex presented a constant picture. The exudate consisted of polynuclear leucocytes and mononuclear cells (proportion between 5 and 10 to 1) free in the pial spaces. A few spaces in the middle zone of the pia contained only granular coagulum. Much round-meshed fibrin was deposited in small foci about the small veins and along the inner zone of the pia. The elastica of the small arteries was penetrated by the polynuclear cells, which lay in spaces beneath the endothelium (or in clefts of the elastica) together with mononuclear cells.

The layer of subpial glia was dense and fine-meshed. Eccentrically swollen glia cells, with a small number of embracing fibrils, were frequent. There were a few polynuclear leucocytes in the nerve-cell layers, as a rule near capillaries.

CASE 4.—T. W., a man of 44, was admitted to Dr. G. B. Shattuck's service at the Boston City Hospital Oct. 29, 1898.

History.—He had breakbone fever in Baltimore at the age of 19. Right chest was tapped for pleurisy one year before entrance. There was severe pain in the lower left chest four days before entrance. There were cough, orthopnea, insomnia and sweating. At entrance there were signs of effusion in the left chest; there were two dry taps. About twelve days after admission, the patient began to have severe cough and irregular temperature, with persistence of signs in chest and increasing pallor. Two days later he complained of pains in the eyes and severe headache and became semicomatose. The area of bronchial breathing increased. A friction-like murmur developed in the lower heart area. Death occurred November 14, without recovery from coma.

Clinical Summary.—Man of 44, with history of pleurisy of a year's standing, develops a fresh attack, in the course of which, sixteen days after onset, twelve days after admission to hospital, he became much worse. There were pains in the eyes, headache, coma. Death occurred three weeks after onset of symptoms and four days after exacerbation of symptoms.

Anatomic Findings.—The autopsy, performed by Drs. J. H. Pratt and Diefendorf, Nov. 14, 1898, three hours after death, showed:

Head (Dr. Diefendorf): Pia showed over vertex and base a slight haziness, and along longitudinal fissure on both hemispheres, several areas from 1 to 3 cm. in diameter, greenish

yellow in color, on section showing thickness of from 1 to 4 mm., not exuding but rather firm. A few similar areas were scattered in the sulci over the frontal and parietal lobes. A similar but more extensive exudate was found in the interpeduncular space, along the ventral surface of pons and medulla, and at the lateral margins of cerebellum.

Brain tissue was firm. On section a greenish yellow exudate was found in the posterior horns of the lateral ventricles, and in the floor of the third ventricle. Ependyma elsewhere was clear. Vessels at base were negative. Middle ears were normal.

Cord: On puncture of the dura of the lumbar cord there escaped a clear fluid with several patches of greenish yellow color. This exudate was found along the entire extent of the cord on the right posterior aspect, mostly in flakes, but in places as a rather thick layer, 1x2 cm. in breadth and length, and 5 mm. in thickness.

Anatomic Diagnoses.—Acute purulent cerebrospinal meningitis. Fibrinopurulent encysted pleurisy. Serofibrinous pericarditis. Chronic verrucous endocarditis. Old fibrous obliterative pleurisy. Hydrocele. Parenchymatous degeneration of liver and kidney. Fatty degeneration of kidney. Fatty degeneration of aorta. Acute fibrinopurulent mediastinitis.

Microscopic Findings.—Cultures from heart's blood, pericardium, pleura and meninges, showed pneumococcus. Spleen and liver gave *B. coli*; kidney was negative.

The meningeal exudate varied in different places in the proportion of polynuclear leucocytes to mononuclear cells. Everywhere there were more mononuclear cells than leucocytes. In the wide sulcal space the chief cell found was the phagocyte laden with polynuclear leucocytes. There was little fibrin except near the veins. Vascular lesions were not prominent over the cerebrum and cerebellum, but lifting of endothelium by exudative cells was found in the small vessels of the spinal pia mater.

The subpial glia was coarse, even and regular. Behind the fibrillar layer were numerous eccentrically swollen glia cells, often with two or even three nuclei. Some of these cells showed fibrillae in close apposition to processes. Leucocytes penetrated the cortex somewhat freely and occurred singly in the deeper nerve-cell layers.

CASE 5.—R. A. a man of 35, was admitted to Dr. A. L. Mason's service at the Boston City Hospital, April 15, 1900.

History.—Chills and cough with yellowish-white sputum had set in six days before entrance. There were pain in the right chest, rise of temperature and free perspiration. He had been in bed four days. He was admitted in delirium, with rusty sputum and with signs of pneumonia in the right chest. Knee jerks and plantar reflexes were normal. There was inflammation of the skin about the shoulders. On April 17 the right forefinger became inflamed and the swelling spread to the dorsum of the hand. An incision was made and pus withdrawn. By April 22, the morning temperature had become normal, but began to rise again irregularly. On the afternoon of April 25 the patient suddenly became much worse, coughed spasmodically and showed dyspnea, cyanosis and delirium. There was stiffness of the neck without retraction. Meantime the inflammation in the hand had largely subsided. The next day Cheyne-Stokes respiration set in, the pupils dilated, the knee jerks became slight and the plantar reflex was lost on the right side. Death occurred in less than twenty-four hours after exacerbation of the symptoms.

Clinical Summary.—Man of 35, with history of excess in alcohol, shows signs of pneumonia in the right chest. Two days after admission (eight days after onset of symptoms) inflammation of right forefinger and hand set in. Incisions were made to relieve the swelling and were followed by general improvement. Sixteen days after onset of symptoms and ten days after admission, a sudden relapse occurred, with spasmodic cough, stiffness of neck and delirium. Death occurred the next day.

Anatomic Findings.—The autopsy, performed by Dr. H. C. Low April 27, 1900, showed:

No congestion of the dura which was not adherent or thickened. The sinuses were distended by fluid blood. The pia was rather opaque, and between it and the brain a greenish-yellow material, thick and viscid in appearance, was visible.

The veins were very much congested. This appearance was most pronounced on either side of the median line, decreasing toward the sides and on the inner surface of the frontal lobes, where it was marked only along the course of the vessels. The vessels at the base were congested and the entire cerebellum was covered by the exudation. The ventricles did not contain an excess of fluid, but the fluid in the lateral ventricles was slightly opaque. Middle ears were normal.

Anatomic Diagnoses.—Acute purulent meningitis. Acute pericarditis. Acute splenitis. Organizing lobar pneumonia. Acute endocarditis (aortic). Septic wound of hand. Aseptic. Acute fibrinous pleurisy. Acute bronchitis.

Microscopic Findings.—Cultures from heart's blood, left lateral ventricle and lungs, showed pneumococcus. The right lung showed streptococcus. Spleen, liver, gall bladder and kidney were sterile. The picture varied in different parts of the pia mater. The zone adjacent to the nerve tissue, the perivascular region and certain spaces in the middle third of the pia mater contained much fibrin and polynuclear leucocytes which far outnumbered the mononuclear cells. In the wide sulcal space the mononuclear cells equalled or excelled the leucocytes in number. The large sulcal veins showed infiltration of the intima, with polynuclear leucocytes and extensive increase in the intimal cells. The subpial glia was scanty. A few glia cells with two nuclei occurred; there was no increase in fibrils. Polynuclear leucocytes were found about the small vessels, singly free in the cortex, but seldom in the underlying white matter.

CASE 6.—J. H., a man of 47, a teamster and a drunkard, was admitted to Dr. G. G. Sears' service at the Boston City Hospital, Jan. 6, 1901.

History.—Four days before entrance to hospital he fell on his back, but was able to move about afterward, though drunk. He took to bed for a short while. He complained two days before entrance of pain in the head and back of the neck. He ate nothing for twenty-four hours before entrance. At entrance there was delirium, restlessness and tremor of extended fingers. Pupils were equal, with normal light reaction. Knee jerks were lively. The urine showed .25 albumin and many (chiefly granular and epithelial) casts. Physical examination was chiefly negative. The next day deep coma had set in and death occurred January 8.

Clinical Summary.—Man of 47, dies in coma seven days after a fall.

Anatomic Findings.—The autopsy, performed by Dr. H. A. Christian, Jan. 9, 1901, showed:

Head: Dura is very tense. When opened there was a gush of grayish turbid fluid, and the dura collapsed to a considerable extent. The surface of the cerebrum and cerebellum was covered with greenish-yellow pus and fibrin. This was everywhere most marked along the course of the larger blood vessels, which appeared as dark red stripes bordered with greenish yellow. It was most prominent over the vertex of the cerebrum, along the Sylvian fissure, over the superior surface of the cerebellum and at the base in the area bounded by the circle of Willis, and along the olfactory nerves. The exudate was less abundant at the base than at the vertex. Over the convolutions where the exudate was thin, many small injected blood vessels could be seen. The superior longitudinal, lateral and superior and inferior petrosal sinuses contained fluid blood and were normal.

Smears from the exudate showed pus cells and many diplococci, some lanceolate, and a few large bacilli. Many of these were within the pus cells. The diplococci failed to show definite capsules when stained by Welch's method, though they were indicated in some places. The organisms stained by Gram's method. The middle ears were normal.

Spinal cord: Dura was normal, but distended. Over the posterior surface of the cord there was much yellowish pus and fibrin similar to that on the surface of the brain. Over the posterior surface of the cord the long spinal vessels were much distended, appearing as small sinuous red cords.

Anatomic Diagnoses.—Chronic fibrinous pleuritis. Chronic fibrinous pericarditis (milk patches). Hypertrophy and dilatation of heart. Fatty degeneration of heart. One accessory coronary artery. Congestion and edema of lungs. Chronic passive congestion of liver. Acute nephritis. Hydrocele and vari-

cocele. Slight chronic aortitis. Fatty degeneration of skeletal muscles. Acute cerebrospinal leptomenigitis.

Microscopic Findings.—Cultures from pia mater gave pneumococcus pure. The kidney gave pneumococcus and *Staphylococcus pyogenes aureus*. The lung contained streptococcus, *Staphylococcus aureus* and *B. protus*. Liver and spleen were sterile. The meningeal exudate was evenly cellular, except about the veins near the nerve tissue where fibrin was developed. The cells were almost all polynuclear leucocytes. In the adventitia of the veins, however, the proportion of mononuclear cells rose to 1 in 10 or 20. In the veins there were numerous minute mural thrombi, largely covered in by endothelium. The subpial glia was thin, but close-meshed. The outer layers of cortex contained numerous neuroglia fibrils of fine, even diameter. There were a few free leucocytes in the outer layers, caught singly sometimes in amoeboid shapes. Mitoses regarded as in neuroglia cells occurred in the subpial layer internal to the dense sheet of fibrillæ, also occasionally in the layer of small pyramids. The nerve cells were pigmented. Cells occupying the site of satellite cells were caught in mitosis in several places; but in general there was slight evidence of increase in number of these cells.

CASE 7.—W. N., a man of 58, was admitted to Dr. F. H. Williams' service at the Boston City Hospital, Jan. 21, 1901.

History.—He had had cough and expectoration six or seven weeks before entrance. Chills and backache set in 6 days before entrance. He had had headache for 4 days before entrance. At entrance there were shooting pains in various parts of the body, skin and scleræ were a little yellow, and ears and lips a little cyanotic. The pupils were small and slightly irregular, reacting sluggishly to light. There was radial arterial sclerosis. Emphysema was present and râles more marked at right base; there were also an area of dulness, increased fremitus, and bronchial breathing at the right base. The abdomen was rigid and tympanitic. The knee jerks and plantar reflexes were normal. The discomfort from the pain in the side, distension of abdomen, and frequent catheterization persisted till January 24, when late in the evening the pulse became thready, respiration labored, and the skin cyanotic. Death occurred five hours later, January 25.

Clinical Summary.—Man of 58, arteriosclerotic, with history of six or seven weeks' bronchitis, and less than a week of chills, backache and headache, died three days after entrance in the course of pneumonia of the right side.

Anatomic Findings.—The autopsy, performed by Dr. H. A. Christian, Jan. 26, 1901, showed:

Head: Superior longitudinal sinuses were normal. The surface of the cerebrum and cerebellum was greenish, opaque and gelatinous, and dotted with numerous whitish areas about 1 mm. in diameter. The pia was thickened everywhere over the upper surface and tore with some difficulty. Smears made from under surface of the pia showed many pus cells and Gram staining diplococci. Many of the diplococci were lanceolate and when stained by Welch's method showed fairly distinct capsules. The ventricles contained a small amount of normal fluid. The brain substance appeared normal. The middle ears were normal.

Anatomic Diagnoses.—Acute leptomenigitis. Jaundice (universal). Chronic fibrinous pleuritis. Acute serofibrinous pleuritis. Fatty degeneration and brown atrophy of heart. Lobar pneumonia. Acute bronchitis. Acute degeneration of kidney. Slight chronic aortitis.

Microscopic Findings.—Cultures from the under surface of pia mater, lung, liver and kidney showed pneumococcus. The meninges were wide, but contained few exudative cells except in the inner zone and about the veins. In both regions the mononuclear cells surpassed the polynuclear leucocytes in number. In the inner zone of the pia there was considerable fibrin inclosing leucocytes, many of which stain poorly. The mononuclear cells in the adventitia of the veins frequently had nuclei indented on one side. The intimal cells of the arteries and veins were swollen and increased in number. An occasional arteriole had its lumen seven-eighths narrowed by swollen intimal cells.

The subpial layer showed a thin, dense sheet of neuroglia. The cortex showed numerous fibrils as far inward as the outer limits of the layer of large pyramidal cells. Scattered through

the cortex were neuroglia cells containing pigment. There was a slight increase of glia fibrils in parts of the underlying white matter. The neuroglia cells failed to show acute changes. The vessels of the cortex were engorged with blood. In their sheaths were a few mononuclear cells, but seldom a polynuclear leucocyte. The nerve cells stained well, were often overpigmented, and were attended by numerous satellite cells, some of which showed a tendency to be metachromatic.

CASE 8.—W. M., a man of 37, was admitted to Dr. C. F. Withington's service at the Boston City Hospital, Feb. 26, 1903.

History.—He had had chills, fever, pain in left chest, cough, and dark expectoration for a week before entrance. There were pneumonia and pleurisy on the left side. Pupils were normal. Knee jerks were normal. The plantar reflexes were exaggerated. The urine showed a few hyaline casts. Death occurred the day after entrance.

Clinical Summary.—Man of 37, with history of "bronchitis" for years, dies one day after entrance to hospital, eight days after onset of symptoms of pneumonia of left side.

Anatomic Findings.—The autopsy, performed by Dr. E. E. Southard, Feb. 28, 1903, showed:

Head: Dura was tense and of normal color. Arachnoidal villi were moderately developed. The pia was of a green-gray color, more marked over the frontoparietal and cerebellar regions and at the base. The greenish color in places was obscured by edema, which in the parietal and occipital regions was marked. There were pneumococci in the smear from the exudate. The convolutions were not markedly flattened. The ventricles were normal and contained a normal amount of fluid. Substance in the gross was normal. The sinuses contained fluid blood and long shreds of chicken-fat clot. The middle ears were normal.

Anatomic Diagnoses.—Lobar pneumonia (gray hepatization). Acute leptomeningitis. Acute fibrinopurulent pericarditis. Chronic adhesive pleuritis. Chronic adhesive pericarditis. General arteriosclerosis.

Microscopic Findings.—Cultures from heart's blood, lung, spleen and brain showed pneumococcus. The exudate in the pia mater was chiefly cellular, but in certain wide spaces in the middle zone it consisted of a granular coagulum. About the small veins and along the inner zone considerable fibrin was developed. The cells were mainly polynuclear leucocytes; but mononuclear cells occurred in the proportion of 1 to 10 or 20, or in a lesser proportion. The small veins showed an increase of intimal cells in compact layers penetrated by polynuclear leucocytes. The small arteries had their intima lifted by polynuclear leucocytes and mononuclear cells. The subpial layer showed considerable neuroglia in a loose sheet, which in places was made looser by edema. A few polynuclear leucocytes were found free in the outer portion of the layer of small pyramids. It was easy to mistake altered neuroglia cells of the edematous outer layers for polynuclear leucocytes. Pigmented neuroglia cells and considerable numbers of satellite cells occurred.

CASE 9.—G. G., a man of 25, was admitted to Dr. C. F. Withington's service at the Boston City Hospital, May 25, 1904.

History.—He had received a head injury on board ship. He lay unconscious for some time in a hospital in Porto Rico, but recovered. He had headache for four days previous to entrance, and there was unconsciousness for two days. On entrance he was restless and cried out when touched. He lay on his side, with the legs drawn up. His neck was stiff and retracted. Passive flexion was painful. The abdomen was slightly retracted. The knee jerks and plantar reflexes were exaggerated. Kernig's sign and Babinski's sign were present on both sides. There was *tâche cérébrale*. There was incontinence of feces, and the restless delirium persisted. Two days after entrance the pupils began to react sluggishly to light, and two days later the head was retracted to the left, with conjugate deviation of the eyes to the left. The extremities were somewhat spastic. Kernig's sign became less marked, and Babinski's sign was lost. Death occurred five days after entrance.

Clinical Summary.—Man of 25, with obscure history of previous head injury, has headache four days and is unconscious two days before entrance. Death occurs six days later, 10 days from onset of symptoms of meningitis.

Anatomic Findings.—The autopsy was performed by Drs. R. L. Thompson and E. E. Southard 32 hours after death.

Head: The scalp and cranium were normal. The sphenoidal sinus contained a small amount of clear gelatinous material. The other sinuses were normal. The middle ears were normal. The right cavity contained a little clear gelatinous material resembling that in the sphenoidal sinus. The pores of the right cribriform plate contained fibrinous pus in continuity with the exudate about the right olfactory lobe. The nasal cavities were clean.

Brain: Weight, 1,350 gms. The dura was slightly thickened, clung lightly to pia on peeling, but there were no adhesions. The sinuses of the dura contained cruor clot. The pia was tense, injected and a little sticky. The tissues about a few large sulcal veins were infiltrated with greenish, stringy pus. The frankly purulent areas of the vertex were never over 2 cm. in diameter and lay at varying distances within 6 cm. therefrom. There were a few subpial collections of pus over the cerebellum, especially near the brachium. A few of the arachnoidal villi were injected and a little more plastic than usual. The tissues about the basal veins, the chiasm and the infundibulum showed a deep layer of moist, stringy, greenish pus, apparently all within the pia. Both Sylvian fissures showed an extension of the exudate for 3 cm. The gyri were flattened, firm, a little plastic, of homogeneous consistence and slightly pinker than usual. The cortical markings were everywhere distinct. Substance clung to the knife on section. The puncta cruenta in various places in the white matter were unusually distinct; and, opposite the left frontal cortex, there were numerous punctiform hemorrhages in very clinging edematous substance. In the middle of this area was a focus 1 cm. in diameter composed of greenish fibrinous pus surrounded by a ragged injected wall. The right olfactory lobe was yellow and softer than the left and was glued in an exudate continuous with the exudate at the base. All the ventricles contained greenish fluid containing fibrin and grumous coagulum. There was no normal ependyma remaining. The exudate could be removed only by scraping and extends for from 1 to 2 mm. into subependymal tissue. The floors of the lateral and fourth ventricles looked like the walls of abscess cavities. The medulla was buried in pus filling the pial meshes. The substance was a little softened and over injected.

Cord: The dura was thick, a little brawny, and internally roughened. It peeled from the pia with slight difficulty. The meshes of the pia were distended with pus resembling that found in the cranium. The outermost layers of the pia were rather edematous, which made the exudate look more glassy than the cranial exudate. On section the cord appeared moister than normal and the pial vessels were markedly injected, resembling in places so many red spokes let in from the pial rim. The larger veins were not much injected. The exudate in places, notably about the cauda equina, was very thick and with the included nerves might measure from 0.75 to 1 cm.

Anatomic Diagnoses.—There were edema and congestion of the lungs, edema of the kidneys and acute splenitis. There was cerebrospinal meningitis, with focal abscess, encephalitis and cerebrophalus. There was an exudate about the degenerating right olfactory lobe, with slight inflammatory reaction by extension in the cerebral and spinal dura.

Microscopic Findings.—Cultures from heart's blood and brain gave pneumococcus; from right lung, staphylococci; from left lung, *Streptococcus pyogenes*; from liver, *B. coli*, *B. proteus*, etc.; from spleen, *B. coli*. Cultures from the kidney were sterile. The meningeal exudate was largely cellular. The centers of the clefts were occupied by polynuclear leucocytes and an equal number of mononuclear cells. Near the vessels the mononuclear cells were more frequent and were often vacuolated or phagocytic for polynuclear leucocytes. Fibrin occurred in masses of irregular distribution, as well as about the veins. The arteries showed a minor degree of intimal swelling, with occasional included cells. The subpial neuroglia showed numerous swollen cells and a few mitoses. There was an increase of fibrils in the subpial layer. The cerebellum of this case showed an exudate much richer in large leucocyte-containing phagocytes than the cerebral exudate, and neuroglia-cell mitoses were fairly frequent in the molecular layer. Polynuclear leucocytes wandered freely in the cortex.

CASE 10.—E. V., a man of 48, was admitted to Dr. C. F. Withington's service at the Boston City Hospital, Feb. 17, 1905.

History.—There was a history of excess in alcohol. He had rheumatism 5 years before entrance. Two days before entrance he parted from a friend at 10:55 p. m., intoxicated but without symptoms of illness. At 11:10 p. m. the man was brought to the relief station with a story of a fall and injury to the head. He was discharged as well the next morning. He was dazed on reaching home, and had pain on the right side of the head. Delirium set in at 10 p. m. February 16. On entrance respiration was rapid and noisy. There was ecchymosis about the left eye. Râles were more marked and respiration more marked in the right back; pulse was rapid and knee jerks equal; Kernig's sign and Babinski's sign were absent. Leucocytosis was 32,600. The delirium continued. By 9:30 the next evening right hemiplegia had developed, with Kernig's sign and Babinski's sign. Death occurred 11 hours later.

Clinical Summary.—Man of 48, alcoholic, was brought to Relief Hospital one night with contusion of face and discharged next morning. He was dazed next day, and delirium was present in the evening. He entered hospital with signs in right lung; hemiplegia occurred on evening of second day, about 70 hours after original trouble. Death occurred eleven and one-fourth hours later.

Anatomic Findings.—The autopsy was performed by Drs. E. B. Bigelow and P. A. Lewis 23 hours after death and showed:

Head: The scalp was rather thick and loose, with a moderate amount of fluid blood beneath the lateral portions, particularly on the left. The calvarium was thick and moderately dense; the dura mater was loose. Convolutions could not be made out through the membranes. Everywhere beneath the dura and still more beneath the pia mater there was an abundance of yellow, tenacious, fibrinopurulent exudate. The distribution was quite even, although there was slightly more over the vertex than at the base. The ventricles contained a considerable amount of clear fluid, with a flocculent yellow precipitate. Section showed a firm, moist surface; the color was rather a dull pinkish-white. The puncta cruenta were well marked. The exudate extended along the trunk of the cranial nerves for a moderate distance. The Gasserian ganglia were infiltrated with pus. The middle ears were normal, and the upper nasal passages seemed normal.

The spinal canal contained a considerable amount of fibrinopurulent fluid. The cord was firm. The vessels were injected.

Anatomic Diagnoses.—Bronchopneumonia. Nephritis. Arteriosclerosis. Cirrhosis of liver. Old infarct of spleen. Acute cerebrospinal meningitis.

Microscopic Findings.—Cultures from heart's blood, spleen and brain were sterile. One culture from lateral ventricle was contaminated with *Staphylococcus albus*. Drs. Duval and Lewis were able to recover the pneumococcus from a rabbit into which pus from the ventricle was injected. The meningeal exudate was composed largely of cells; the polynuclear leucocytes slightly outnumbered the mononuclear cells. Fibrin occurred about the small veins. The endothelium of some arteries was lifted by a deposit of cells, chiefly polynuclear leucocytes. The subpial neuroglia was fairly dense but edematous. There was no evidence of acute neuroglia cell changes.

CASE 11.—J. M., a boy of 10, was admitted to the aural service of Dr. E. M. Holmes at the Boston City Hospital Sept. 27, 1904.

History.—Two weeks before he was seen in the outpatient department with bilateral otitis media. A right mastoid operation was performed September 29 by Dr. Holmes, but was stopped on account of hemorrhage. The temperature remained high. The patient vomited sometimes after eating. Two weeks after entrance a second mastoid operation was done on the left side by Dr. G. A. Leland. After this the temperature fell, but five days later right facial paralysis developed with well-marked *risus sardonius* on left. There were ptosis of the left eyelid, slight horizontal nystagmus, convergent strabismus on right, slight rigidity of neck, and Kernig's sign. Toward evening, twitchings of the left side of the face developed and the paralysis gradually disappeared. Death occurred the next day.

Clinical Summary.—Boy of 10, with bilateral otitis media of unknown duration (over two weeks), on whom mastoid operations were performed, death occurring three weeks after admission and one week after a second operation.

Anatomic Findings.—The autopsy was performed by Dr. C. W. Duval 27 hours after death and showed:

Head: The scalp and calvarium were normal. Behind the left ear was a surgical incision 5 cm. in length, running parallel with the external ear and directly over McEwen's triangle. Six or eight stitches held it together. The dura was non-adherent except along petrous portion of the left temporal bone. The sinuses contained fluid blood. The whole of the left hemisphere beneath the pia was covered with thick, greenish-yellow pus. Parts of the cortex beneath this pus showed marked depressions. The right hemisphere was congested, and the convolutions and sulci obliterated. The cortical substance was quite firm in consistence.

Anatomic Diagnoses.—Chronic pachymeningitis. Purulent leptomeningitis. Acute encephalitis. Mastoiditis (acute and chronic). Edema and congestion of the brain. Chronic pericarditis.

Microscopic Findings.—Cultures from heart's blood, liver, spleen and meninges were sterile. Numerous Gram-staining, lancet-shaped diplococci with capsules were found in smears from meninges. The microscopic picture in the cortex was mixed. There was an exudate of small mononuclear cells, some of them lymphocytes, about some veins. Besides this, there was a deep layer of fibrin with polynuclear leucocytes emmeshed, and there were foci composed chiefly of polynuclear leucocytes. A great portion of the acute exudate failed to stain well. Vacuolated and leucocyte-containing mononuclear cells were frequent. The small arteries showed swelling without proliferation of endothelium. The subpial neuroglia showed mitoses and eccentrically swollen cells. There were a few newly-formed fibrils. Leucocytes did not wander freely into the nerve substance.

CASE 12.—J. M., a woman of 45, entered the aural service of Dr. G. A. Leland, April 18, 1905.

History.—She had had pain in the right ear for three weeks. The evening before entrance coma set in. At entrance there was prostration. Temperature was 102.6; respiration, 50; pulse, 120. The right pupil was larger than the left; both pupils were sluggish to light. The retina were congested and there was paralysis of the right sixth and seventh nerves. There were diminished sensation of right side of body, stiffness of neck with pain on pressure, absence of knee jerks, a suspicion of Kernig's sign on both sides and mastoid tenderness. A mastoid operation was done at midnight. Death occurred 10 hours later.

Clinical Summary.—A woman of 45, with history of pain in right ear for three weeks, becomes comatose and shows sensory and motor paralyses of right side of body. Death occurred 10 hours after mastoid exploration.

Anatomic Findings.—The autopsy was performed by Dr. S. B. Wolbach 1 hour after death and was limited to the head.

There was a wound of right mastoid operation. The subcutaneous tissue of the scalp was slightly edematous. The calvarium was of average thickness and density. The dura was normal. The right superior longitudinal, the occipital, superior and inferior petrosal sinuses and right lateral sinus were normal and contained liquid blood and cruor clot. In the left lateral sinus at the torcular Herophili there was a thrombus beginning at the junction of the right and left lateral sinuses and extending laterally to the left for a distance of 1 cm. This thrombus was grayish-pink in color, friable and firmly attached to the walls of the sinuses. Close to the jugular foramen, and 6 cm. from the torcular, there was another similar thrombus 1.5 cm. in length. Between the dura and the temporal bone there was a thin layer of clotted blood covering an area about 7 cm. in diameter. Along the course of the vessels of both hemispheres there was a grayish-yellow exudate, thickest at the fissure of Sylvius and diminishing toward the median fissure. This exudate was subpial, approximately equal in amount on both sides and extended to the median fissure on both sides. The base of the brain was covered with a similar, rather more abundant deposit, thickest at the be-

gining of the fissures of Sylvius about the infundibuliform process and third nerve. The entire surface of the cerebellum was covered with a similar exudate. The consistency of the brain seemed good, and it cut with ease. The cut surfaces were rather moist; puncta cruenta were prominent as oozing points. Each ventricle contained about 5 c.c. of yellowish, cloudy liquid. At each posterior horn and at each lateral horn there was a small quantity of thick, greenish-yellow puriform matter. The pineal body was represented by a cyst 1 cm. in diameter. The exudate on the surface of the cerebellum and geniculate bodies was continuous beneath the splenium with a similar exudate present in the velum interpositum about the pineal body. Section of the basal and centrum semiovale showed nothing abnormal. The pons and medulla were normal. The exudate extended downward from the pons, medulla and cord as far as could be seen through the foramen magnum. The left middle ear was normal. In the right middle ear, the upper anterior half of the membrane tympani was destroyed. The cavities of the middle ear and antrum were filled with yellowish-red granulations. The incus lay free in the cavity of the middle ear. The malleus was held loosely in position. The cells of the surrounding cancellous bone contained a thick, clear, yellowish fluid. The sphenoidal sinus contained a quantity of gelatinous, yellowish material. Cover-glass preparations from the exudate at the base of the brain and from that in the ventricles showed many lanceolated, Gram-staining diplococci.

Anatomic Diagnoses.—Pneumococcus meningitis. Thrombosis of left lateral sinus. Chronic otitis media. Infection of sphenoidal sinus. Mastoid operation.

Microscopic Findings.—Cultures from the meninges showed pneumococcus. The meningeal exudate varied. In some places polynuclear leucocytes surpassed the mononuclear elements in number, but in most places mononuclear cells, chiefly phagocytic for polynuclear leucocytes, occurred in large numbers. Proliferation of the intima and infiltration of the walls of the veins and exudative lifting of the arterial intima were found. Occasionally a small vein was found completely occluded by a fresh leucocytic thrombus. The subpial neuroglia was fairly dense. Polynuclear leucocytes were sometimes found in the cortex and wandering freely in subependymal tissues.

GENERAL CLINICAL SUMMARY.

Eleven patients were male, one (Case 12) female. The youngest were two boys of 10 (Cases 2 and 11), the oldest a man of 70 (Case 3). The average age was 43. Seven patients were between 35 and 50, 3 under 35, two over 50.

Two cases followed inflammation of the middle ear (Cases 11 and 12). The other ten cases showed no inflammation of the middle ear.

Two (Cases 6 and 10) gave a history of trauma while drunk. The patient in Case 9 is said to have recovered from head injuries.

Four cases gave history of excess in alcohol (Cases 1, 5, 6 and 10).

Four cases gave history of pyogenic infections of long standing, three (Cases 1, 7, 8) of chronic bronchitis, one (Case 4) of old pleurisy.

The character of onset varies. Cases 11 and 12 were the outcome of neglected otitis media. In cases 6 and 10 the onset was probably rapid, but obscured by alcoholism. Cases 7 and 8 were incidents of pneumonia, Case 5 of unresolved pneumonia, Case 4 of pleurisy, Case 3 of erysipelas. Case 2 was fulminant.

The durations of the acute symptoms and of the symptoms ascribable to cerebral lesions may be assigned (subject to the usual reservations) as given in the accompanying table.

The cases may be characterized briefly as follows:

Cases 11 and 12 were clinically clear: otitis media and sequela. Of the other cases, 1, 2, 9, 10 and per-

haps 6 could be regarded in life as showing cerebral symptoms, and Cases 4 and 5 gave somewhat doubtful evidence in life of the lesions afterward discovered. Cases 7 and 8 could scarcely be more definitely labeled than as cases of severe pneumonia. Case 3 was apparently not more than a septicemia.

| Duration of acute symptoms. | Duration of cerebral symptoms. |
|-----------------------------|--------------------------------|
| Case 1.—5 weeks..... |1 week. |
| Case 2.—28 hours..... |28 hours. |
| Case 3.—1 week..... |1 week. |
| Case 4.—3 weeks..... |4 days. |
| Case 5.—17 days..... |1 day. |
| Case 6.—1 week..... |1 week. |
| Case 7.—7 to 8 weeks..... | pneumonia, 10 days. |
| Case 8.—8 days..... | pneumonia, 8 days. |
| Case 9.—10 days..... |10 days. |
| Case 10.—81 hours..... |11 hours. |
| Case 11.—Over 5 weeks..... |1 day. |
| Case 12.—Over 3 weeks..... |1 day. |

GENERAL ANATOMIC SUMMARY.

The brain lesions varied in character and distribution. The lesions affected meninges, ventricles, or the nerve tissue itself.

Meningeal lesions were found in all cases except 1 and 2. The meningeal exudate was greenish or yellowish and contained, as a rule, much fibrin. The exudate was always deeper in the sulci and could be found there in discontinuous sheets. The upper surface of the cerebrum (especially along the vertex and over the frontal region) and the upper surface or sides of the cerebellum showed exudate in all our meningeal cases. The cisternae and pial tissues at the base, as a rule, were filled with pus; but Cases 3, 7 and 11 (an otitic case) failed to show involvement of the base.

The cases which failed to show involvement of the base failed also to show pus in the ventricles. Case 8 also showed no involvement of the ventricles. The ventricles, as a rule, were all equally involved. The exudate varied from opaque to turbid or flocculent. Although the exudate was elsewhere fluid, single drops of fibrinous pus drained into the posterior cornua of the lateral ventricles. The floors and recesses of the ventricles more frequently showed pus than the roofs and free non-vascular parts. The most destructive suppuration in the ventricles was found in Case 9.

The lesions of the brain substance were various. Eight cases showed no focal lesion of the substance in the gross. Cases 1, 2, 9 and 11 showed acute red softening. Case 9 showed a small abscess. The areas of central encephalitis showed distinct and numerous puncta cruenta and punctiform hemorrhages in the midst of tissue pinker than normal, plastic or friable and edematous.

The spinal cord was affected in those cases in which the tissues at the base showed pus. The pus in the cord membranes occurred frequently in the same discontinuous sheets characteristic of the cortical exudate.

The dura mater was occasionally distended. The venous sinuses, as a rule, contained cruor clots. Case 12 showed sinus thrombosis on the side opposite to the mastoid operation. Cases 11 and 12 were infectious, both of otitic origin. In the other ten cases the middle ears were normal. Case 9 showed exudate in the cribiform plate, but the nasal cavities were free. In the cases with exudate at the base, the sheaths of the fifth nerve, the Gasserian ganglia, and the tissues about the pituitary body sometimes showed frank pus.

The other organs offered some things of note. Thus, all cases, except the otitic cases (9 and 12) (in Case 12 the examination was limited to the head), showed acute lesions in the lungs, lobar pneumonia in Cases 2, 5 (organizing), 7 and 8; bronchopneumonia in Cases 1 and

10; edema and congestion in Cases 3, 6 and 9; encysted pleurisy in Case 4. These lung lesions were probably responsible for the origin of some brain infections. The same doubtful correlation occurred in our series of brain infections with *Staphylococcus pyogenes aureus*, in which focal pulmonary lesions were either grossly prominent or made out microscopically in all six cases.

Aside from the lungs, the organs of the trunk showed little. Case 5 was a case of malignant endocarditis (aortic). Case 4 showed, in addition to encysted pleurisy, an acute pericarditis.

Chronic lesions, which might possibly have a bearing on infection, were found in a few cases. Half the cases (1, 3 (marked), 6, 7, 8 and 10) showed arteriosclerosis; and, of these, Case 6 showed a hypertrophied, dilated and fatty heart. Case 4 showed chronic nephritis, Case 8 chronic adhesive pericarditis, Case 10 cirrhosis of the liver.

GENERAL SUMMARY OF MICROSCOPIC FINDINGS.

Alterations were found in several of the tissues, particularly in the meningeal connective tissue, the walls of the arteries and to some extent of the veins, and in the nerve tissue, under which may be considered the reaction of the subpial neuroglia and the immigration of polynuclear leucocytes.

The meningeal tissues contained numerous cells, chiefly polynuclear leucocytes and mononuclear elements in varying proportions. In Cases 3, 6, 8, 10 and in parts of Case 11 the polynuclear leucocytes plainly outnumbered the mononuclear cells. In Cases 1, 4, 7, 12 and in parts of Cases 5 and 11 there are more mononuclear cells. Cases 2 and 9 showed these cells in about equal numbers.

Phagocytosis of mononuclear cells for polynuclear leucocytes was best marked in Cases 1, 4, 5, 9, 11 and 12, in most of which cases the mononuclear cells outnumbered the polynuclear cells. Phagocytosis for bacteria was best marked in Cases 1 and 2 (the two cases of almost pure ecephalitis).

The general distribution of the meningeal exudate was fairly constant. Certain central spaces in the pia mater were likely to contain masses of polynuclear leucocytes even in cases in which the perivascular tissues and the tissues at large were filled with mononuclear cells. Another characteristic was the distribution of the fibrin, which was found in abundance about the veins and in that part of the pia mater just overlying the nerve tissue. There was no evidence of focal necroses in the exudate, although portions of the exudate stained poorly in Cases 7 and 11.

The arteries of the meninges showed lesions in all the meningitic cases, but these lesions were not characteristic in Cases 1 and 2. The intima was lifted or dissected away from the elastica by an accumulation of cells, largely polynuclear leucocytes. All degrees of this process occurred up to occlusion of the lumen. The lesion was frequent and marked in Cases 3, 7, 8, 10, 11 and 12, less frequent in Case 4 (in which the arteries of the spinal pia mater were affected), and in Cases 5, 6 and 9.

Somewhat less common but more striking were the lesions in the veins (Cases 5, 6, 7, 8, 12 and in some other cases to a minor degree). The walls of the larger veins, especially the large sulcal veins, showed the process more distinctly than the venules. In the walls of the venules there was occasionally a thorough infiltration with polynuclear leucocytes and minor proliferative changes; but in the larger veins there was a promi-

nent overgrowth of lining cells, among which the polynuclear leucocytes lay in a variety of ameboid shapes.

Case 6 was distinguished by the presence in the walls of numerous minute mural organizing thrombi (ten, for example, crosscut in a section of a vein about 1 mm. in diameter). Case 12 (a case of sinus thrombosis) showed occlusion of small veins of the pia mater also.

The reaction of the nerve tissue to the infection may be considered under the head of vessels, neuroglia and nerve cells with their axnaxa.

The vessels of the cortex showed adventitial infiltration with polynuclear leucocytes in various degrees. Case 1 showed great accumulations of phagocytic cells about some vessels. The nerve cells failed to show notable or any rate constant changes.

The neuroglia exhibited, in many cases, a tendency to cell increase in the subpial layer. Three cases (6, 9 and 11) showed numerous mitoses. Case 6 showed mitoses among cells regarded as satellite cells. Cases 1, 3, 4 and 5 also showed cell changes in the neuroglia, eccentrically swollen cell bodies, multiple nuclei, or fibrils in apposition to cell processes. In Cases 2, 7, 8, 10 and 12 neuroglia changes were few or absent. In Case 2 (fulminant case in a boy of 10) the original layer of neuroglia was thin and the involvement of the meninges slight. In the other cases which showed no acute neuroglia change the original subpial layer happened, as a rule, to be dense. This character of the original neuroglia, however, can scarcely govern the occurrence of acute changes, since Cases 3 and 6 had dense subpial neuroglia, but marked acute changes.

The cortex was penetrated by polynuclear leucocytes in most cases. This penetration was free in Cases 2, 4, 5, 9 and 12. Occasional or fairly frequent examples of leucocytes in the substance were found in all the other cases, except 7, wherein very few examples occurred.

EXPERIMENTAL MATERIAL.

Inoculations were made in guinea-pigs with different strains of the pneumococcus kindly supplied us by Drs. C. W. Duval and P. A. Lewis in the course of their pneumococcus work in 1905.³ The results of inoculation with the various strains (sixteen), as tested by the appearances in guinea-pigs killed four days after inoculation, were various, ranging from negative to pronounced suppuration. Work was pursued with a single organism only (C D 6 of the series isolated by Duval and Lewis). The same method, in general, was employed as in our work with *Staphylococcus pyogenes aureus*, the method of simultaneous inoculation of several animals and histologic examination of animals killed on successive days during the course of the disease.

As in the work with *Staphylococcus pyogenes aureus*, various methods of inoculation were employed. The intrapulmonary method, applicable in staphylococcus work, is not well suited to pneumococcus work in the guinea-pig. Subdural inoculations are effective, but are open to the usual objections that the destruction and hemorrhage produced by the operation obscure the results of infection.

Resort was had, therefore, to a method of inoculation by way of the orbit. The syringe needle is introduced at the line of reflection of the conjunctiva on the temporal side of the globus oculi. The bouillon culture is then slowly introduced into the tissues of the orbit. Exophthalmos follows, but subsides in a few minutes.

3. Studies on the Pneumococcus, C. W. Duval and P. A. Lewis, Jour. of Exp. Med., August, 1905.

There is occasionally transient circular progression toward the side of inoculation. This method may be modified by plunging the needle through the wall of the orbit into the brain. Since the conjunctiva, as a rule, is free from bacteria, the method of orbital inoculation effects entrance into the interior of the cranium more advantageously than other methods. This method is said to have been first used in rabies work. Other methods, as nasal and ear-plate inoculations, were used, but are not so good for general work as the orbital method.

We found difficulty in recovering the pneumococcus from the organs of the inoculated guinea-pigs and were unable to obtain a complete single series of daily stages of the brain lesion with positive cultures in all. It would be possible, doubtless, to obtain an unbroken series of positive cultures by using very numerous animals and the rabbit's blood agar culture medium employed by Duval and Lewis in their investigation. Positive results, however, were obtained in a sufficient number of brain cultures in the series with organism C D 6 (Series of Duval and Lewis).

The general result of the experimental work is as follows:

Of the four-day orbital inoculations, seven cultures gave slight or negative results; three cultures gave accumulation of chiefly mononuclear cells in the meninges; two cultures gave very slight exudation with congested veins filled or lined with polynuclear leucocytes; three cultures gave exudates (recalling many of the human exudates) with polynuclear leucocytes and mononuclear cells in various, about equal proportions; one culture gave polynucleosis.

A series of brains from guinea-pigs inoculated in the orbit with organism C D 6 showed the following:

Six hours after inoculation many veins showed leucocytes arranged as in the inert layer. The tissues about the base and cerebellum showed a light exudation of polynuclear leucocytes and considerable hemorrhage. In the exudate were occasional polynuclear leucocytes with deeply eosinophile granulations. The third ventricle showed hemorrhage with occasional polynuclear leucocytes; the mural ependyma showed no changes. The brain substance was normal, except for a few shrunken and metachromatic nerve cells; there was no penetration of substance by polynuclear leucocytes.

The brains after one, two and three days would in many cases be difficult to pick out and arrange in series, on account of variations in the amount of exudate and hemorrhage. More and more cells of the mononuclear series entered; but it was hard to estimate these when far outnumbered by polynuclear leucocytes and to distinguish them from such cells normally present. In one brain, two days after inoculation, a few minute hemorrhagic abscesses were found.

The condition four days after inoculation is described more fully, since four-day material can be recommended for test work. Four days after inoculation the tissues between the laminae of the cerebellum and at the base are distended with a heavy exudate in which polynuclear leucocytes somewhat outnumber the mononuclear cells. Fresh hemorrhages in the pial meshes are few and small. An occasional phagocyte containing polynuclear leucocytes occurs in the adventitia of veins. Cells of the lymphocyte series occur, with now and then a plasma cell; but these cells occur in foci, whereas the polynuclear leucocytes and the mononuclear cells having vesicular nuclei are of general distribution. The

ventricles show slight hemorrhage, a light exudate of polynuclear leucocytes and occasional phagocytes containing polynuclear leucocytes. Penetration of the cortex by polynuclear leucocytes is frequent and is particularly free in the cerebellum, where leucocytes are found deep among the cells of the granular layer.

A comparison of the four-day material after subdural injection of equal amounts of the same culture shows that the subdural lesions are of more advanced character, in the sense that polynuclear leucocytes are fewer, pigment-containing cells more numerous, and karyokinetic figures in the adventitial tissues more frequent than in the orbital material.

The exudates, however, are in somewhat different loci, the exudate after orbital inoculation is largely basal after subdural inoculation over the convexity.

The pictures on succeeding days are only roughly open to serial arrangement from internal evidence. The ependymitis, not so marked as in our series with *Staphylococcus aureus*, plays a minor part. There is rarely any destructive encephalitis. We have, therefore, only the meningeal picture, which as a single guide is unsatisfactory.

In from two to five weeks there was no longer evidence of disease in our series, except a multiplication of glia cells along the meninges and beneath the ependyma. The latter we are as yet unwilling to ascribe to the effects of the pneumococcus, since in many guinea-pigs the process is found from other causes. Mitoses beneath the ependyma are occasionally seen at various points in the series.

GENERAL SUMMARY AND REMARKS.

The foregoing is a report of cases grouped together as showing effects of pneumococcus brain infection. The clinical and anatomic varieties which they exhibit are only in part explained on present evidence. A long series of cases with parallel differential work on the best bacteriologic lines will be required to settle questions brought up by the various extent and effect of lesions like arteritis and phlebitis, by the varying prominence of polynucleosis and mononucleosis in the meningeal exudate, by variation in the phagocytic properties of the cells involved, and by the varying extent and character of the attendant cellular gliosis.

Clinically viewed, these cases are quite ill assorted. The group includes fulminant and wholly obscure cases, cases not to be told from severe pneumonia, clearly otitic cases, septicemic phenomena, and cases a week old or longer which are clearly cerebral or meningitic in character.

Anatomically viewed, the pneumococcus produces in the meninges and brain substance of man a type of inflammation in which cellular exudation and fibrin formation are prominent.

The picture postmortem varies from focal or diffuse red softening to purulent leptomeningitis and ependymitis and occasionally abscess formation. The meningeal exudate is almost constant on the convexity. The base is frequently involved and, with the base, often also the ventricles and the cord.

The histologic picture is more various than the anatomic picture. The meninges contain a cellular exudate which varies in the proportion of polynuclear leucocytes and mononuclear cells. Phagocytosis on the part of mononuclear cells for polynuclear leucocytes is best marked in cases in which the mononuclear cells outnumber the polynuclear leucocytes. The meninges in individual cases are fairly constant in the cell proportions

found. Fibrin is found about the veins and adjacent to the nerve tissue.

The arteries characteristically show lifting of the endothelium by cellular exudate. The veins often show proliferative changes in the intima with infiltration by polynuclear leucocytes (characteristic in large sulcal veins). Two cases showed mural thrombus formation in the veins.

Seven cases out of twelve showed increase or other signs of change in the neuroglia, especially of the subpial layer.

Penetration of the cortical tissue by polynuclear leucocytes is almost constant.

Orbital inoculations in the guinea-pig showed remarkable variety in the results with different cultures. With the cultures yielding positive results, a general but not constant tendency is to the production of exudates with a high proportion of mononuclear cells of the phagocytic series. A series of orbital inoculations with culture identical throughout exhibited clearly the same tendency. The exudation of polynuclear leucocytes is primary, however, and may be noted in six hours. The exudate is at its height in three, four or five days and leaves no trace in from two to five weeks. Ependymitis and encephalitis are not prominent. The guinea-pig inoculations, as a rule, produce no clinical sign.

THE DUMB-BELL INTESTINAL ANASTOMOSIS.

A PRELIMINARY REPORT ON A NEW MECHANICAL DEVICE
AND A NEW METHOD FOR EITHER INTESTINAL
APPROXIMATION OR ANASTOMOSIS WITH
THE STOMACH.*

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The numerous methods of suturing that are described and the various mechanical devices that are demonstrated, even in our recent standard text-books of surgery, prove that the ideal method for intestinal approximation of anastomosis has not been discovered. Some of the methods of suturing have been successfully used by surgeons in a series of cases until they were almost ready to declare the method all that could be desired, when a sad accident occurred and the postmortem showed a defect in its workings. The same may be truthfully said of all the mechanical devices up to the present time.

The new method of operating and the new device here explained is the result of a year's work. I began with the idea that, in an end to end approximation of an intestine or an anastomosis of the intestine with the stomach, either where the severed end is used to make the anastomosis or with a lateral union, all of the connective tissues must be incorporated in the fixation method in order to safeguard against leakage, and also to get a firm safe union. This is what nature does in all cases in which one organ becomes agglutinated to another, and ultimately becomes anastomosed as a result of septic infection. After experimenting with one device after another, I finally succeeded in making this simple hollow dumb-bell accomplish the desired result. It simply acts as a hollow cylinder for the passage of liquids and gas, and at the same time gives a base on which we can tie all the connective tissue in one firm grasp by means of a rubber or silk suture of course fiber, and thus have a firm union for three or four days while the serosa and muscularis are becoming united by an organized lymph

in their new position. In from three to four days the organized tissue is a safe barrier against leakage. The ligature necroses through the connective tissue by this time and frees the device.

The dumb-bell is made of aluminum and is very light. There are three different sizes, one for children, one for adults and one for the colon. This same method may be used with a dumb-bell moulded from soft rubber or from any digestible material, but I prefer one of aluminum, as it can be made small, is light, has a definite strength so that one can do a definite work and know what to expect during a definite time.

We desire the connective tissue to hold at least for three days and prefer it to hold for five. My experiments on pigs proved that the dumb-bell is freed after from four to six days. The rubber ligature should be firmly wrapped around the tissues and the dumb-bell twice, then securely tied with several knots. The knots and ligatures are left within the canal and the quantity of ligature can make no difference. The ligature material should be coarse, so that it will necrose through slowly, hence use a rubber band about one-fourth inch broad (or heavy braided silk). Silk or linen sutures are not so safe as rubber in the hands of a beginner, as any sawing motion in applying the ligature might cut through and thus necessitate reamputation of the gut and a serious prolongation of the operation.

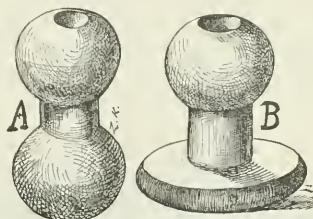


Fig. 1.—Showing the two styles of the dumb-bells.

Operation for end to end approximation: The two ends of the bowel are secured by a suture at the mesenteric border, care being taken to include in this suture the V-shaped mesenteric triangles. Directly opposite the mesentery, on the periphery of the intestine, another suture is placed. Each of these sutures is tied loosely, as they are only used for the purpose of invaginating the two ends of the bowel. Two inches from the end of the intestine, along its peripheral border, an incision is made through the intestinal wall, one inch in length. This incision is made in the proximal end of the intestine, if it be enlarged, otherwise on the distal end. A pair of forceps is now passed through the incision and into the end of the intestine and the tension sutures secured and drawn through the incision. Now steadying the mesenteric border of the intestine between thumb and finger, and drawing the sutures, invaginates the two ends of the intestine into each other and through the incision. The dumb-bell is now placed into the ends of the invaginated intestine and the ligature applied at a distance of one-half inch from the ends of the severed intestine, encircling it and the handle of the dumb-bell. Disinvaginate by gentle traction and pressure on the dumb-bell; reunite the peripheral incision by a Czerny-Lembert or Gely suture. Then complete the operation by suturing the mesenteric opening.

The three sizes of the dumb-bell can by the ligature method be made to fulfill any requirement in any operation from the cardiac end of the stomach to the rectum.

* Read before the Chicago Academy of Medicine, 1905.

In doing a gastroduodenostomy an opening is made on the ventral wall of the stomach one and one-half inches in length. Through this aperture by means of a pair of forceps the dumb-bell is forced through the pyloric opening and dropped into the duodenum, where it can be pushed along by the hand within the abdomen to any selected point of the intestine, as the small omental cavity is opened for inspection, just as in any dorsal gastrotomy.

If there be a stenosis of the pylorus, an incision must be made in the duodenum near the pylorus and the dumb-bell placed in the duodenum, and this incision sutured. When the point is selected, with the right hand seize the dumb-bell from within the stomach with tenaculum forceps, then invaginate the duodenal wall and

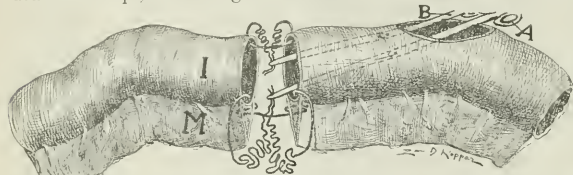


Fig. 2.—Traction sutures grasped by forceps A and B.

dorsal stomach wall through the former incision on the ventral stomach wall by pressing the ventral wall down over the dumb-bell. Tie a firm ligature of heavy silk, reinforced by a rubber ligature, to insure uniform pressure, and necrosis.

Precaution must be taken in not selecting a dumb-bell of more than one-half inch in

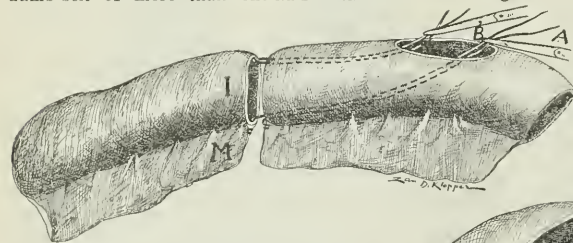


Fig. 3.—The traction sutures in place.

diameter, or excessive amount of the peripheral side of the small intestine will be ligated.

For uniting the severed end of the ileum to the site of the colon push the dumb-bell into the end of the intestine out of the way, throw a pursestring ligature around the end of the severed intestine, and leave the needle threaded. Select the point of the colon for anastomosis; nearly opposite this point open the colon by an inch incision, preferably in the tenia coli. Now insert the needle at the previous point selected and pull it out through this incision, and draw the side of the sigmoid and the end of the intestine into this incision. Now force the dumb-bell forward to the end of the intestine and place the ligature over the small end of the dumb-bell. Suture the opening into the colon and also the mesentery of the small intestine.

Where the cecum has been amputated the work can be done through the end of the colon before it has been sutured. Experience has taught us that the small intestine should never be united end to end with the large intestine, but always lateral above a newly-made cecum.

A specimen removed twenty-four hours after the op-

eration showed absolutely no leakage, the ligature and dumb-bell were firmly in place and a safe protective band of lymph was becoming organized. Especially at the dangerous mesenteric border can the accurate union be noticed. The strangulated ends of the intestine external to the ligature were very much hypertrophied, and dilated the intestine over the small end of the dumb-bell. For this reason I have made the opposite end of the dumb-bell one-fourth inch larger, so as more accurately to coapt the surfaces during the first twenty-four hours.

A second specimen, taken forty-eight hours from the time of the operation, showed very firm organized lymph. The strangulated rim that was hypertrophied in the other specimen was receding here. The ligature, where the intestine was dissected, still held firmly and could not leak.

In a third specimen, taken from a pig six months after the operation, there was great difficulty in finding the place of union. The lumen was normal and there was but a bare trace of circular cicatrix. It could only be

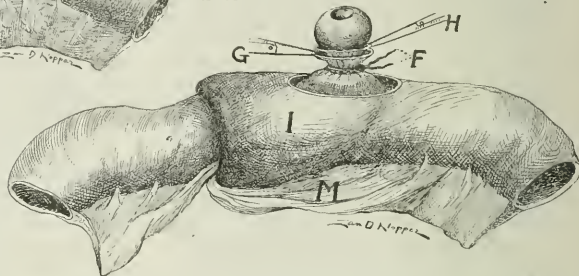


Fig. 4.—G and H. The ends of the invaginated intestine. F. Rubber ligature.

detected in a good light, and could barely be distinguished by touch. This pig weighed thirty-five pounds in May and 212 pounds when killed in November. The dumb-bell was evacuated on the tenth day.

A fourth specimen was secured from a pig

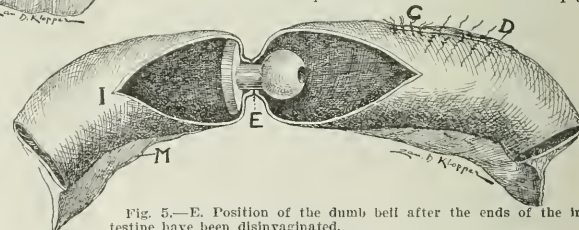


Fig. 5.—E. Position of the dumb bell after the ends of the intestine have been disinvaginated.

8 months after the operation. There was but a very slight limitation of the intestine. The cicatrix was barely to be distinguished. On inverting the specimen it showed a beautiful line of union of the mucous membrane. The union could barely be felt, and only showed a circular ring with a minimum amount of cicatricial tissue. This pig weighed fifty-four pounds in April at the time of the operation, and 340 pounds when killed in December. The dumb-bell was evacuated in this animal in eight days.

The advantages of this method of operating are:

1. Simplicity of the construction of the dumb-bell; therefore, always ready.
2. Simplicity of the operation.
3. The absolute safeguard against leakage, as the ligature secures all of the connective tissue.

4. The short time in which the operation can be performed.

5. The dumb-bell cannot remain at the site of operation more than four or six days, as the connective tissue will all have been uniformly necrosed by that time.

6. The extremely light weight of the dumb-bell, its size and shape insure against the possibility of its lodging at any part of the alimentary tract.

7. No reinforced sutures are necessary.

8. The minimum amount of cicatricial tissue that ultimately remains.

ROENTGEN DIAGNOSIS OF DISEASES OF THE LUNGS.*

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PHILADELPHIA.

The importance of Roentgen examinations of the lungs is well expressed by the statement of Dr. Judson A. Daland, who says: "No chest examination is complete without an x-ray examination." In order to make Roentgen examinations of the greatest possible value, the best technic and the most careful and accurate interpretation must be employed.

As specialists in this special branch of medicine, we have made great strides in the perfection of our technic, but even with the most perfect technic in the making of a negative, much general knowledge of medicine, and much experience is still needed to interpret accurately the shadows obtained. Much assistance can be obtained from the study of the literature, but much more can be learned by the actual study of the negatives of the various pathologic conditions, associated with the clinical or the postmortem findings.

Postmortem examinations are seldom made immediately after the Roentgen examination, and in many of our cases they are never made. No one of us, therefore, has seen explanations of all the shadows obtained in our negatives. Neither has any one of us had the opportunity of studying all the pathologic conditions that we may be called on to examine. I have decided, therefore, to present before this body a number of Roentgenograms, showing a variety of pathologic conditions of the lungs, and to give my interpretation. In many instances, I know that my interpretation is correct, but in others, some of my colleagues may differ with me. It is with the hope of bringing out criticisms and thus of combining our experience in the study of diseases of the lungs, that I present this subject.

Fluoroscopic examinations of the lungs have been made almost since the discovery of the Roentgen rays, but the actual progress in the Roentgen diagnosis of diseases of the lungs dates from the beginning of short exposures. In this field excellent work has been done by Hulst, Kieder and others.

In order to study the lungs accurately, the negative must be made while the lungs are at rest, or, in other words, while the patient holds the breath. This will usually be from three to fifteen seconds. I have succeeded in making several good negatives of the chest of a child of 9 years of age in one-tenth of a second. Such short exposures are not necessary in the study of the lungs, but are necessary for the accurate study of the heart.

As a rule, a careful physical examination should precede the Roentgen examination, not because it will modify the shadows, but because it will enable the Roentgenologist to interpret those present, and may modify the method used, and thus make a second examination unnecessary. The greatest field of usefulness of the Roentgen rays in lung diseases is the study of tuberculosis. Here the lesions can be recognized earlier and more accurately than by any other method. Besides assisting in making a diagnosis, it is the most valuable and the most accurate method of recording the lesions at the various stages of the disease, and thus enables the physician to estimate the value of his therapeutic procedures.

METHOD OF MAKING THE EXAMINATIONS.

I have practically discontinued the use of the fluoroscope, because of its inaccuracy and because of the dangers attending its use. By the use of the modern devices for the protection of the operator at least one of these objections can be removed; still, I feel that a fluoroscopic examination is not necessary. Generally, a negative should be made with the plate posterior to the patient and another with the plate anterior to the patient, so as to give proper value to any lesions lying near to the surface, and in order to recognize any thickening of the pleura. As a rule, the patient should be placed in the recumbent posture, except when pleural effusion is suspected, in which case the patient should be examined in the sitting posture. The tube should be placed at a distance of from 18 to 20 inches from the plate. The time of the exposure will vary with the time that the patient can hold the breath, and this time should be accurately determined by testing the patient several times before attempting to make the exposure.

INTERPRETATION.

The proper interpretation of the negative is more important than the making of it and fully as difficult. The negative itself should be used for study.

Old calcified tubercles give the most decided shadows, and lesions of this kind can be recognized as small as one-eighth of an inch in diameter. Old scars or fibrous tissue cast a less dense shadow and require larger lesions, but they can usually be recognized by their band-like appearances.

Consolidations vary in the density of their shadows with the size of the lesion; but an area one-half inch in diameter can be recognized in an emaciated person. In one patient, who was very much emaciated as the result of tuberculosis of the peritoneum, I succeeded in showing little tubercles the size of a pin head. Consolidations seldom occur singly, therefore, they give the lung a mottled appearance, except when there is massive consolidation. Finally, the consolidation can be recognized by comparison of the suspected area with that of the opposite lung or with the other parts of the same lung. The tubercular deposits, or the affected areas lying in different planes, are thrown on the plate in one plane; therefore, on superficial observation, one might conclude that a greater proportion of the lung is affected than is correct. That is, the whole lung might show a mottled appearance, and the false conclusion be drawn that no healthy lung tissue remained. This mistake need not be made by an experienced observer, because if the whole lung or lobe is involved the degree of general density will be much greater than when only scattered areas are involved, and the density will approach that of the shadow of the heart. Even when a whole lobe is involved, the shadow is rarely uniformly dense, because the

* Read at the Annual Meeting of the American Roentgen Ray Society, Baltimore, Sept. 23-30, 1905.

lung is rarely uniformly consolidated. There are likely to be small or large areas of cavity or compensatory emphysema associated with the consolidation.

Cavities are usually recognized by their increase in transparency surrounded by the shadow of consolidation. If the cavity is large there will be little difficulty in recognizing it. If, however, the cavity is small or is resting on a large area of consolidation, or thickened pleura, it is less easily recognized. Under favorable circumstances, a cavity one-half inch in diameter can be made out.

Emphysematous areas are also noticeably transparent. A dense shadow may be found on one side of this area, but it is likely to have the other side continuous with more or less healthy lung tissue, and therefore can be differentiated from cavity.

Pulmonary Abscess.—This diagnosis can not be made entirely by means of the Roentgen ray, but when it is suspected, it can be more accurately located by the assistance of the rays. The radiographic appearances will not differ materially from those of cavity appearances, except that the surrounding area of consolidation is likely to be larger in proportion to the size of the cavity. Since the two may be associated, however, the difficulties are increased, and the findings must be carefully compared with the physical signs before operating.

Pulmonary Gangrene.—The remarks made in connection with pulmonary abscess will apply to pulmonary gangrene, except that instead of the area of consolidation being large and the cavity small, in this instance, the cavity is more likely to be large and the surrounding wall small. The conditions and the shadows will vary with the stage at which the examination is made. The odor will usually suggest the diagnosis, and the rays will be useful in locating the area for operation.

Pneumonia.—The fluoroscope shows a dense shadow in the affected area in pneumonia, and the movements of the diaphragm are diminished on the affected side, partly because of the increased density of the lung and partly, at times, because of an adhesive pleurisy. Williams was one of the first to apply the rays in the study of pneumonia. He depended almost entirely on the fluorescent screen. De la Camp¹ has recently made some interesting studies in pneumonia, in which he used the plate. He finds that the rays will localize the lesion more accurately than can possibly be done by any other means. This is especially true when the lesion is centrally located, or at a distance from the surface. It is in this class of cases that the rays will be found most useful, because it is in them that ordinary physical signs so commonly fail.

The Roentgen ray is also a most useful adjunct in the diagnosis of lesions not centrally located, especially when such lesions are situated beneath the scapula, or when small consolidations are surrounded by areas of compensatory emphysema. Compensatory emphysema assists in outlining the lesions by means of the Roentgen ray, because of its greater transparency, but offers considerable hindrance when the ordinary physical signs are depended on.

De la Camp found even in lobar pneumonia that the whole lobe is seldom uniformly consolidated. He often found by means of the rays an extension of the process into another lobe or into the opposite lung, when ordinary physical examination failed to reveal such lesions. The rays were found of great assistance in the study of the cases during the stage of resolution. In some

cases, months were required for the lung to recover completely. The rays show lesions long after the physical signs are negative. In one case in which the patient complained of pain in the region of the heart, which persisted four months after the crisis, and after all physical signs were negative, the Roentgen examination showed a fibrous band about one-fourth of an inch broad binding the left side of the diaphragmatic pleura to the pericardial sac. Other symptoms of obscure origin following pneumonia may often be cleared up by the aid of a Roentgen examination. The same principles that have been described in the interpretation of tubercular negatives will apply to those of pneumonia. The areas involved, however, are usually larger and therefore more easily recognized.

Emphysema.—In a typical case of emphysema one is struck by the great transparency, which is greater than in any other condition of the lungs. This transparency affects both lungs, as a rule. The ribs will be found to extend outward from the spinal column at more nearly a right angle than normal. To distinguish the lesser grades of emphysema or to recognize local areas much more experience is necessary, for, then, one must keep in mind the normal Roentgenogram of the same age and general development, thickness of the chest walls, etc., and made under similar conditions.

Collapse of the Lung.—Collapse of the lung probably will not be recognized by means of the Roentgen rays when the area involved is small, but when the area is large it gives an appearance very similar to that of consolidation. It is more uniform and more sharply outlined than in tuberculosis, and it involves a lesser area than when pneumonic consolidation is present.

Thickening of the pleura is a common affection, occurring both independently and in association with tuberculosis of the lungs. This condition is recognized in the Roentgenogram as a uniform shadow of only slight density. The density will vary with the degree of thickening. This shadow is then seen to shade gradually at its edge into the surrounding clear space. If the surrounding lung is healthy, there will be little difficulty in recognizing a moderate thickening.

If, however, the thickened pleura is overshadowed by consolidated lung it becomes much more difficult, and at times impossible. Here experience alone will serve as a guide. In order to study the pleura accurately, both an anterior and a posterior plate should be made.

Pleural Effusion.—Pleural effusion is best recognized by placing the patient in the sitting posture, with the plate or tube posteriorly and the tube anteriorly. To make a Roentgenogram, place the patient in a chair with a large board resting against the back on which the plate is supported. The pleural effusion gives uniform but not a very dense shadow, occupying the lower part of the pleural cavity. The upper level has a curved but not irregular line. In uncomplicated effusion the shadow is even more uniform than that of a thickened pleura. The pleural thickening will also be recognized by its irregular border, which is never a line. The shadow is less dense than would be produced by consolidation of the lobe of the lung.

Pneumothorax.—Pneumothorax is recognized by the area of great transparency, greater than emphysema. This area is elongated in a vertical direction, as a rule, and occupies the lower lateral portion of the chest. Toward the median line may usually be seen the thickened pleura and the diseased lung. The heart is commonly displaced to the opposite side.

1. Fortschritte a. d. Gebiete d. Röntgenstrahlen, April 30, 1905.

Hydropneumothorax.—This condition is more common and forms one of the most interesting fluoroscopic pictures that can be found. In addition to the findings of pneumothorax, the fluid at the base of the pleural cavity may be seen to move with each respiration, or each movement of the body. If the patient is shaken, the fluid is seen to splash.

Hemothorax.—I have examined two cases of this character. Both showed a more dense shadow than would be produced by any other form of pleural effusion.

Consolidation and Pleural Effusion Combined.—In a case of this kind the shadow of the pleural effusion was seen to extend to the fifth rib on the right side and to the seventh rib on the left side. The consolidation of the right middle lobe showed through the effusion, and was distinctly more dense. Probably no condition will give more difficulty in recognition than consolidation surrounded by an extensive pleural effusion. In this particular case there were the peculiar physical signs, tubular breathing and bronchophony extending throughout the area of pleural effusion. By making Roentgen examinations in all such cases we may find that consolidation of the lung is present and that it is the cause of the peculiar physical sign. This sign is probably due to the transmission of the larger sound waves from the bronchi, through the consolidated lung to the fluid in the pleural cavity, and thence through the chest walls to the air. The striking of two stones together will convince most people that fluids will transmit sound, but these sounds must be of the louder and coarser variety, therefore vesicular breathing is not transmitted through an effusion.

Subphrenic Abscess.—The difficulty in recognizing many of these cases is appreciated by all who have had much experience, and therefore any aid will also be appreciated. In a case examined about two years ago by means of the screen, I was able to see a decided displacement of the diaphragm upward as far as the ninth rib, and absolute immobility was noted on the right side. The left side of the diaphragm was seen to move two and one-half inches. The Roentgen examination will also eliminate some of the conditions with which this may be confused, such as pneumothorax, encysted pleural effusion or empyema.

CONCLUSION.

In general, the diagnostic value of the evidence obtained through the Roentgen ray will depend very much on the skill and the experience that the operator has had, both in Roentgen work and in general medicine. Glowing reports of cases, beautiful Roentgenograms and the enthusiastic claims of manufacturers lead many physicians to conclude that all they require to get good results is an instrument. This is as absurd as to conclude that all a physician needs to enable him to do good surgery is a set of good surgical instruments. Much harm has been done both in diagnosis and in treatment by the possessors of this erroneous idea. Much skill, both in the preparation and the interpretation of a negative, is needed. This is obtained only through daily practice. The ability to read a negative will also depend in great part on the physician's knowledge of general medicine.

Physicians' Business Methods.—If the physician would conduct his business on a legitimate foundation, and adhere to it by pushing methods, he would be able to reject commissions from druggists, could pay his bills like a gentleman, care better for his family and himself, and gain the respect of the community. Then his word in municipal and legislative works would be followed and appreciated.—*Northwestern Lancet.*

FIRST AID TO THE INJURED;

ITS IMPORTANCE TO RAILROADS FROM A HUMANE AND ECONOMIC STANDPOINT.

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THE RAILWAY ACCIDENT.

The instruction of railway employes in first aid to the injured is just in the advent of its practical employment. It is at this time a matter of comment with the secular press and the public that, in spite of modern inventions and appliances, the railway accident is apparently inevitable and, paradoxical as it may seem, is on the increase.

The block signal system, the patent coupler, the air-brake were all heralded as life-saving devices that would practically eliminate the danger to the employé and the passenger, and while unquestionably much has been accomplished by these inventions toward minimizing the casualty list of the modern railroad, yet other influences have counteracted their good results, and the fact remains that the railroads daily maim and kill a much larger per cent. of employes and traveling public than they should for their own moral and economic welfare.

In time of peace (a condition which, by grace of God, exists in our country with only trivial interruptions) the railway accident casualty list is rightly looked on as the chronology of the greatest menace to life and limb in our routine existence.

STRIKING STATISTICS.

Setting aside the millions of passengers carried on American railroads during the year and the proportion killed and injured, and eliminating for the sake of brevity the bystanders and trespassers killed and injured annually, I will consider the casualties among railroad employes alone.

Approximately 1,300,000 persons form the standing army operating the railroads of the United States. Statistics show that during the year 1904 the fatalities by accident among this number were one in each 500. One in every twenty-four was injured. Much has been said of the humane feature of first aid instruction among the armies of the civilized world, where it is now recognized as an indispensable and inseparable feature of the education of the soldier. From the humanitarian standpoint the same argument will hold with reference to the alleviation of the suffering among the victims of the inevitable railway disaster.

Space forbids an exhaustive review of this subject from the many points of advantage that can truthfully be ascribed to it, but I will say a word on what may be considered its more sordid advantage and the one which should be of paramount importance to the railroad, with whom the economic question is always one of vital interest.

For the past six or eight years I have given special study to negligence and railway accident law, and feel that I have become competent in its application to personal injury cases.

The steam railroads of the United States pay annually in damages to injured persons 00.74 per cent. of their gross earnings. This is seemingly a trifling decimal, but in coin and currency it amounts approximately to \$14,000,000. In addition to this sum \$7,000,000 is spent annually in the maintenance of a legal department, one-half of which expense may safely be attributed to the defense and settlement of personal injury damage suits.

These figures do not cover the total expense of injuries by common carriers by any means. This compilation pertains solely to the steam railroads, while the interurban electric lines and local street railway lines increase the above totals many fold. Particularly do the local street railways add enormously to the list. It is estimated that the Metropolitan Elevated of New York alone pays annually \$2,000,000 for personal injuries and has constantly on hand nearly 6,000 suits of this nature. The Brooklyn Rapid Transit Co.'s annual personal injury budget is in the neighborhood of \$1,000,000.

The ease with which evidence can be purchased and the ubiquity of the professional damage suit lawyer in the large centers of population gives the simulator and impostor a larger percentage of successful chances than with the transcontinental railroad. In accident to passenger or employé, no matter how trivial in nature, the damage suit sequel should always be borne in mind by the attendant.

NEEDS OF THE SITUATION.

The study which I have given railroad accident and injury from the forensic viewpoint has impressed on me certain deficiencies in railroad practice which, in my opinion, can be readily eliminated and which would result in great saving to the operating companies.

I am a firm believer that herein is a new field for the student of medical jurisprudence and surgical practice. I contend that the surgeon who is qualified in negligence law is in position to render the most effective and economic service as adjuster of personal injury claims.

There exists to-day in most of otherwise well organized railroads a lack of co-ordination between the legal and surgical staffs as a result of the one failing to grasp the importance of the technic of the other. This proposition operates with equal force conversely.

It is into this breach that the medicolegal claim adjuster can step to the assistance of both departments and with economy to the company. Dr. Pearce Bailey of New York,¹ an authority on forensic medicine, in a personal letter, says: "I believe that the very best adjuster that a railroad can have is a medical man with knowledge of negligence law."

I call the attention of railroad surgeons particularly to a close study of this subject. Under existing conditions the settlement of personal injury claims rests wholly with the legal department, and notwithstanding their best efforts the annual damage account shows increase with most railroads. Considering the enormous amount of money involved, it would seem to me to justify economical experimentation along other lines in search of a more effective method of control.

SKILFUL FIRST AID.

The National First Aid Association of America, under the presidency of the noble and renowned Clara Barton, is propagating the cause of first aid among railroads and other civil organizations and hopes soon to bear to the carriers of human freight the same quasi-official and inseparable relation that the Red Cross does to the military of the civilized powers.

Every railroad surgeon realizes the truth of the statement that in time of accident the uninitiated are as likely as not to do the wrong thing for the patient if any effort is made at all at temporary relief. A chew of tobacco from a syphilitic mouth applied to a mashed finger, or a filthy tarpaulin bound round a compound fracture are worse treatment than absolute neglect.

By minimizing the danger at the time the accident is received, and by proper, helpful first aid intelligently administered, the opportunity for infection with the microbe of the damage suit is reduced and saving to the company accrues.

INSTRUCTION OF EMPLOYEES.

Combined with this service and in order to obtain the best results I advocate the instruction of employés in a few of the most essential points of negligence, which can readily be injected into the first aid instructions.

Dr. Pearce Bailey says in his book¹ that the very nature of a railroad accident (collision or derailment) renders all participants principals rather than witnesses to the injury of another.

Railroad attorneys and surgeons appreciate the difficulty often experienced in obtaining satisfactory evidence from employés in such catastrophes. The system which I advocate would include the instruction of employés in accident law points in a manner that would render them more competent witnesses.

In recapitulation I present to the serious consideration of railroad companies as a means of reducing very materially their damage claims:

(a) The instruction of trainmen and shopmen in first aid to the injured.

(b) The incorporation in this instruction of practical points on accident law.

(c) The employment in the claim department of a medical man, skilled in theory and practice of surgery and adept in negligence law, whose duty it will be to assist and advise counsel of the road, to bring about co-operation between the legal and surgical staffs of the closest possible nature, and last but not least, to be possessed of a fund of sound sense and a personality that will enable him to deal direct with the claimant.

I am confident that the adoption of the above plan will result in a net saving to a railroad company of from 10 to 20 per cent. of the amount now spent annually in payment for personal injuries, real and assumed.

THE TREATMENT OF THE RESULTS OF INFANTILE PARALYSIS.*

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In none of the usual text-books can one find an orderly summary of the treatment of anterior poliomyelitis, after the subsidence of the acute stage. Even the orthopedic treatises do not group the varied conditions and present the manifold methods of treatment so that the general practitioner can readily decide what is indicated. This paper is an attempt to present the subject in a simple, concise manner, under varied headings, enabling one to refer quickly to the latest methods. Many operative procedures which have not proved satisfactory have been omitted. The literature is so extensive that only a few references are cited, although I have drawn freely from all sources.

The child which has suffered from an attack of infantile palsy is brought for advice because of:

1. Difficulty in locomotion.
2. Deformity.
3. Need of apparatus or of operation to improve existing conditions.

The causes of the deformity are:

1. The effects of gravity, e. g., toe-drop.

1. Author of "Accident and Injury; Their Relation to Diseases of the Nervous System." (D. Appleton & Co.)

* Read at a meeting of the Roswell Park Medical Club, Nov. 6, 1905.

2. The unopposed action of the sound muscles and their contracture, e. g., flexion of the knee due to paresis of the quadriceps, with contracture of the hamstring muscles.
3. Functional use of the part, e. g., flat foot following palsy of the tibial muscles.
4. Laxity of the ligaments, e. g., knock-knee or subluxation of the femur.

The treatment may be divided as follows: The principles of treatment; special conditions and their treatment; shoes and braces; operations.

THE PRINCIPLES OF TREATMENT.

The early indications, when the results of the diseases are beginning to appear, are:

1. To increase nutrition of the muscles.
2. To prevent deformity.

The following general means are employed:

1. Massage and warm clothing.
2. Electricity, both galvanism and faradism.
3. Functional use, as far as possible, to combat not only the atrophy of muscle but also of bones and ligaments.
4. Passive motion of each joint to its full range daily to prevent contractures.
5. A light night brace if the extremity lies in an abnormal position during sleep.
6. A shoe or apparatus during the day to allow proper support during use. Also, according to Bradford and Lovett, to develop normal reflexes and muscular co-ordination. It is a general rule that when in the act of walking the extremity is thrown into any abnormal position, apparatus or other treatment is indicated.

The later indications, when treatment has been neglected, are:

1. To correct existing deformity, when present, often improving the mechanical conditions by a special operative procedure.
2. To support and keep the parts in their proper relation after such correction.

By the following means:

1. Correction.
 1. By massage and passive motion.
 2. By force while the patient is under an anesthetic.
 3. By a series of plaster casts at rapid intervals.
 4. By tenotomy.
 5. By one or more operations—i. e.:
Nerve transplantation.
Tendon transplantation.
Arthrodesis.
Osteotomy.

These operative procedures are described collectively after the discussion of special conditions. They have been found of great value in recent years and are being employed to a large extent to the exclusion of mechanical aid.

2. Apparatus designed for the individual case.

SPECIAL CONDITIONS AND THEIR TREATMENT.

1. *Talipes equinus*, or toe-drop, is one of the commonest forms, in which the fore-foot falls down at the medio-tarsal and ankle joints, due to paresis of the entire anterior tibial group. If the deformity is not fixed by contracture, the treatment is as follows, beginning with the simplest plan and proceeding to severer methods:

1. An elastic garter attached above the calf or to one of the waistbands, ending in a tape, which is sewed to the vamp of the shoe.
2. A shoe extended far enough up the calf to keep the foot at a right angle.
3. A brace, consisting of one upright, a band above the calf and a joint opposite the ankle, allowing plantar flexion only to a right angle. The lower end attached

to the heel of the shoe or to a footplate, which goes inside the shoe.

4. Nerve transplantation of the anterior tibial nerve and the branches to the tibialis anticus into the musculospiral nerve.
5. Tendon transplantation of a portion of the tendo-Achilles around the inner side of the ankle, attaching the reflected tendon just above the ankle joint to the tibialis anticus or extensor communis digitorum.
6. Arthrodesis of the ankle joint, i. e., an artificial stiffening of the joint to hold the foot at a right angle.

If the tendo-Achilles is short, preventing dorsal flexion, several courses may be followed:

1. When the leg is short and there is no discomfort from the contracture, it may be possible to build up the heel inside the shoe to conform to the bottom of the foot.
2. Usually forcible correction under an anesthetic is advisable, by manual force or with the Thomas wrench. If *cavus* is present, tenotomy of the plantar fascia followed by forcible reduction of the high arch is advisable. A plaster dressing for a few weeks and then the use of the brace mentioned above.
3. The tendo-Achilles may be lengthened by open incision and a portion of the tendon transplanted to the front of the ankle. Arthrodesis of the ankle joint may be performed in addition.

When the contracture is of slight degree, allowing dorsal flexion to a right angle, the patient may develop "*genu recurvatum*" or back-knee, in which the knee is overextended in order to bring the sole flat on the ground. This condition, when well-marked, requires a brace extending to the upper thigh or pelvis with a joint at the knee allowing extension to a straight line only. When the contracture is severe, the opposite condition will prevail, and the patient will walk on the fore-foot with flexion at the hip and knee. Operation on the foot is necessary, followed temporarily by the wearing of a brace.

2. *Talipes equino-valgus*, or toe-drop with flat-foot, is fairly common, due to palsy of the tibialis anticus, or tibialis anticus and tibialis posticus. The great toe is often drawn backward in the position of the hammer-toe because of the overaction of the extensor longus pollicis. The treatment:

1. A shoe to hold the foot at a right angle and support the arch.
2. A brace, as before, with flat footplate and stop-joint at right angle to prevent plantar flexion.
3. Nerve transplantation, as for *talipes equinus*.
4. (a) Tendon transplantation of the peroneus brevis behind the ankle under the tendo-Achilles to be attached to the periosteum of the scaphoid. Also the peroneus tertius across in front of the ankle and beneath the anterior tendons to be attached to the same point. It is an excellent plan to supplement these steps by arthrodesis of the medio-tarsal joint, or at least arthrodesis of the astragalo-navicular joint.
- (b) Another excellent method is to transplant the extensor longus pollicis to the scaphoid, running the tendon through a canal bored in that bone, turning it back and suturing the free end to the periosteum and to itself, thus forming a check-rein, which prevents valgus and toe-drop. Arthrodesis of the astragalo-navicular joint will further strengthen the improved position.
5. For an old case which shows considerable rigidity it may be necessary to do a cuneiform osteotomy, which includes the astragalo-navicular joint.

3. *Talipes equino-varus* is the most common of all the deformities of the foot. It is due to paresis of the anterior muscles with weakness of the external or peronei muscles.

1. A shoe by which the foot is held up and the forefoot swung outward at medio-tarsal joint, sometimes with a slight raise in the inner sole under the cuboid bone.
2. A Taylor clubfoot brace, which has a sole plate and a single inner upright so constructed that when the brace is on, the varus is corrected.
3. If passive correction is impossible, overcorrection by force, with or without tenotomy, or one of the following operations may be advised:
4. Tendon transplantation:
 - (a) The outer half of the tendo-Achilles may be inserted into the distal ends of both peronei.
 - (b) The extensor longus hallucis or the outer half of the tibialis anticus may be passed across the foot under the other tendons to be fastened to the periosteum of the cuboid bone. Arthrodesis of the calcaneo-cuboid joint is a useful adjunct.
5. In a rigid case of long standing a cuneiform osteotomy including the calcaneo-cuboid joint is indicated.
4. *Talipes varus* is due to palsy of the peronei muscles, which weakness allows the fore-foot to be drawn inward. Toe-drop, of course, is absent.
 1. For a mild case, in which motion is free, a shoe which holds the foot correctly will suffice.
 2. A tendon transplantation just as for talipes equino-varus.
 3. Cuneiform osteotomy, including the calcaneo-cuboid joint.
5. *Talipes valgus* is a rare condition due to paralysis of the tibialis posticus in which a flat-foot is present.
 1. A shoe in which the insole is raised to support the arch and the front axis is swung inward to correct the valgus. Or a flat footplate of the usual type.
 2. Tendon transplantation and arthrodesis as for talipes equino-valgus.
 3. Cuneiform osteotomy.
6. *Talipes calcaneus* is caused by paralysis of the calf muscles, so that the foot is drawn upward by the anterior muscles. The os calcis becomes dorsi-flexed, causing cavus or "hollow foot," and the heel becomes less prominent. The cavus is the worst feature and is especially difficult to overcome.
 1. A shoe will often control a mild case.
 2. A brace as for toe-drop with the stop-joint arranged to prevent dorsal flexion.
 3. If the resistance to passive correction is strong, one may use a series of plaster casts in succession and then apply a brace. If the cavus and contracture are both fairly well marked, it is better to cut the plantar tissues, reduce the arch by strong force and apply plaster. Care must be used that the forefoot is not simply forced down, thus increasing the cavus.
 4. Whitman has used very successfully his operation of removal of the astragalus. He also shortens the tendo-Achilles, transplants the peronei into the os calcis and displaces the os calcis well backward, thus bringing the foot into a good position. Astragalectomy gives a strong and useful foot and the resultant shortening is not of great consequence. No brace is necessary afterward.
 5. Arthrodesis, before deformity is marked and resistant, is an excellent measure. The stiffening of the ankle joint tends to prevent deformity.
7. *Talipes calcaneo-valgus*, in which the fore-foot is drawn upward and to the outer side, is due to weakness of the calf muscles and the anterior muscles. It is fairly common.
 1. A brace, with footplate and strap around the foot to keep the foot down on the plate, may be employed, but experience proves that it is sometimes impossible to keep the forefoot in apposition to the plate.
 2. Tendon transplantation of the peroneus longus back of the ankle to be attached to the flexor longus digitorum, and the peroneus tertius across the front of the foot to be sewed to the tibialis anticus.
3. Removal of the astragalus.
4. Arthrodesis of the ankle joint, coupled with a transplantation of the peronei muscles.
8. *Talipes calcaneo-varus*, in which the fore-foot is drawn upward and to the inner side, is caused by the action of the anterior muscles overpowering weakened calf and exterior muscles. The treatment is similar to the last-mentioned condition.
 1. A brace.
 2. Removal of the astragalus.
 3. Arthrodesis of the ankle joint with transference of the extensor longus pollicis to the outer side of the foot.
9. *Dangle foot* is that weakened state where all the muscles have suffered and the foot assumes any position. Such a foot, however, is capable of giving good support when properly braced.
 1. A strong shoe, run high on the calf.
 2. A brace, allowing dorsal flexion only.
 3. Arthrodesis of the ankle joint is especially useful for this deformity.
10. *Contracted foot* is now a well-known deformity, which follows some years after an affection of the anterior muscles. The attack has been slight and often overlooked. The stronger muscles have gradually produced a high arch, or cavus, while the tendo-Achilles has shortened enough to prevent dorsal flexion beyond a right angle.¹
 1. A shoe with a high arch.
 2. Where there is much complaint of pain it will be necessary to divide the plantar tissues which have contracted, apply considerable force to reduce the arch, divide the tendo-Achilles and put the foot up in a corrected position in plaster. Later the patient wears a proper shoe.
11. *Paralysis of the anterior thigh muscles*, or quadriceps extensor, prevents the patient from extending the leg. The standing position is insecure, as he is apt to fall forward. In walking he has to swing the lower extremity forward, and often holds the hand on the front of the thigh to keep the knee from sudden flexion. If overextension is possible, back-knee is often developed, i. e., a locking of the joint by overextension while taking a step, the strain coming on the posterior tissues and crucial ligaments. If the hamstrings are shortened, the gait is very insecure.
 1. A Thomas knee brace, or ordinary brace, with external and internal bar, ending at the heel. Either no joint is allowed at the knee or else a lock joint, which has a mechanism to allow flexion in the sitting position. If there is a tendency to back-knee, a strap should be passed back of the knee to prevent hyperextension. Often some foot condition will require correction also.
 2. When there is resistant flexion of the knee, repeated plaster casts may effect improvement. Or a tenotomy of hamstrings and fascia and forcible correction. It must be remembered that a peroneal nerve may be overstretched and a temporary paralysis caused by the use of too great force or by a plaster cast which straightens too suddenly. It is a good plan to cut the cast as soon as applied in each case, as the peroneal nerve, on account of the binding of its branches, is particularly vulnerable.
 3. Tendon transplantation is now generally employed instead of tenotomy. The hamstring tendons are brought around the femur and sewed to the quadriceps tendon at the sides or just above the patella. The biceps is swung on the outer side and the semi-membranosus and the semi-membranosus on the inner. Muscle grafting of the sartorius into the quadriceps is an adjuvant.

12. *Knock-knee* is a common result in infantile paralysis due to general weakness and laxity of ligaments. It may be corrected by a knock-knee brace or Thomas knee brace, or by an osteotomy of the femur above the condyles.

13. *Paralysis of the hip muscles* is regularly accompanied by palsy of other muscles below. If all the muscles are affected, dangle thigh results, but the sartorius and tensor vaginae femoris are rarely involved. The position assumed is one of flexion and outward rotation of the thigh, with lordosis of the back and flexion or hyperextension of the knee. Weakness of the ilio-psoas causes loss of power of flexing the thigh. Adductor palsy makes the patient lift one thigh over the other by the hands if he wishes to cross his legs. Gluteal paralysis is the worst condition because the patient can not stand.

The treatment of palsy of the thigh muscles is by apparatus only. A brace with a pelvic band, with or without perineal bands, extending to the foot. For example, a Thomas knock-knee brace with pelvic band added. For both limbs, double braces are employed. For paralysis of the gluteal and back muscles a leather jacket with double braces is necessary, and if there is no power in the glutei, crutches also have to be used. This very disabling condition is rare, and sometimes in later years enough power returns or is developed to allow the case to walk without crutches. A free joint is allowed in the braces opposite the hip joint. Contracture of the tissues about the anterior spine, causing flexion of the thigh, necessitates a tenotomy of the same.

14. *The muscles of the trunk* are, as a rule, exempt, but may be severely attacked in cases showing a general involvement. Weakening of the abdominal muscles results in lordosis and a prominent abdomen, for which treatment is rarely required by support or jacket. General involvement of the back muscles induces kyphosis, chiefly in the dorsal region. Lateral curvature may be due to a short leg, or the attitude assumed from palsy elsewhere, or to the fact that the disease has attacked mainly one set of erector spinae muscles. In this last case, the convexity of the curve looks to the stronger side, because of the collapse of the chest wall and atrophy of the tissues. The stronger side develops and expands. The treatment of such curvature is by jacket, electricity and special exercises.

15. *In the upper extremity* Tubby has devised an operation for the relief of paralysis of the serratus magnus, causing winged scapula. An incision is made over the outer border of the pectoralis major, a part of its sternal portion is cut from its insertion into the humerus and subdivided. These subdivisions are transplanted into the four or five main serrations of the serratus magnus.

For deltoid paralysis, causing inability to abduct the arm, Hoffa transplants part of the trapezius into the deltoid, selecting appropriate adjoining parts.

For general involvement of the shoulder joint muscles, shoulder cap may be applied or an arthrodesis of the joint may be performed, and the forearm supported in a sling to prevent dragging on the shoulder and dislocation of the shoulder joint.

Weakness of the biceps may be combated by using a brace to hold the forearm at a right angle, or a portion of the triceps may be swung around the humerus and inserted into the biceps.

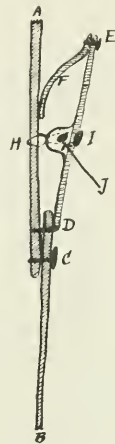
Weakness of the triceps has been modified by transplanting a part of the biceps into the triceps.

In the forearm, a flaccid condition usually exists. If

contraction is present it resembles the hemiplegic type, with pronation and flexion of the hand. In either condition the following tendon transplantations are valuable:

The pronator radii teres may be made to act as a supinator. Two incisions are made, one over each condyle of the humerus extending downward. The pronator is isolated, passed through a tunnel and fastened to the external condyle.

At the wrist the flexor carpi radialis is passed around the radius and sewed to the extensor carpi radialis longior, and the flexor carpi ulnaris is passed around the ulna and fastened to the extensor carpi ulnaris, thus providing for extension of the hand. The flexor sublimis digitorum tendons may be passed through the space between the two bones above the pronator quadratus, and fastened to the tendons of the extensor communis digitorum. This should improve the power of extending the fingers. These last operations are very valuable in other conditions than simply infantile paralysis.



Lock joint for the knee. AB, the uprights; C, free joint at knee; DE, spring lock; at D a projecting pin slips through the uprights at full extension, locking the joint; F, spring; G, base, attached to the upright, projecting solidly through to I, but pierced at J by transverse axis on which DE, moves.

SHOES AND BRACES.

There are a few practical points to be borne in mind when ordering shoes or braces. The object of a special shoe is to hold the foot in the best possible position and correct the deformity. If valgus is to be overcome, the front axis of the sole which reaches from the center of the foot to the toes, should be swung well inward, and a raise of leather built in the insole to raise the arch. If varus exists, the front axis should be swung outward, until the front and rear axes nearly form a straight line. A slight raise may be placed in the insole underneath the junction of the os calcis and cuboid to evert the foot slightly. The uppers often need strengthening opposite the ankle joint by whalebone or other means. It is often a good plan to place the foot on a square of paper, passively correct the deformity and then draw an outline of the sole, to serve as a guide as a ground plan of the sole if the shoemaker is not experienced. The shoes should be made to lace, and they can be made to fit more snugly if the lacing is carried down over the toes, instead of stopping back of the toes as in an ordinary shoe.

When ordering braces one may be guided by a descriptive price-list as issued by the well-known firms. As many of the braces for cases of infantile paralysis have to be devised for the individual patient, some practical points are of value. The patient lies on a large square of blank paper, and an outline of the extremity and perhaps the pelvis drawn with pencil. The position of the joints and their exact distance from the sole indicated. The position of the calf, thigh and pelvic bands are outlined with pencil and the exact circumference of the extremity at these points given. The joint at the knee is often omitted or else a lock joint substituted. Artificial muscles of rubber are of no permanent value, as they soon wear out and give trouble. At the ankle, stop joints are often used, according to the presence of talipes or calcaneus. Simplicity and lightness of weight should be in mind while planning the support. The lower end may be attached to the sole of the shoe on the outside or inside, or to a sole plate of metal which is slipped in the shoe. A short description of the patient, his condition, weight, etc., should be added.

The illustration shows a new form of lock joint for the knee, designed by a boy 10 years old, a brother of a patient who had had anterior poliomyelitis. By pressing the handle of the spring at E the pin is moved outward and the joint unlocked, allowing the case to sit comfortably. On arising and extending the leg, the pin slips into the openings made for it through the uprights and the joint is locked. The advantages are simplicity, cheapness and the fact that it does not get out of order.

OPERATIVE TREATMENT.

I. The use of force, either manual or instrumental, followed by a plaster dressing, will usually overcome resistance to passive correction in these cases, because the tissues are not so firm or the deformity so obstinate as in the congenital malformations. Of course, the patient is anesthetized. A succession of plaster casts at rapid intervals, each correcting a little more than the previous will often suffice. Tenotomy is now rarely employed, because tendon transplantation is to be preferred. At the hip tenotomy of the tensor vagina femoris, sartorius, etc., is the only available operation when the thighs are held in flexion.

II. *Nerve transplantation, nerve grafting or neuroplasty* has come into use during the past eight years, since the time that the distal stump of a paralyzed musculo-spiral nerve was grafted into an intact median nerve with excellent result. Soon followed the successful grafting of the spinal accessory into the facial. The idea of the operation is to restore power in paralyzed muscles by connecting them once more with the spinal cord by functioning nerve fibers. It is applicable in only a few regions, and at a certain time, i. e., after a lapse of time which shows that no further regeneration will take place, in a region where a nerve, or part of a nerve, may be borrowed without doing great damage. In other words, where one set of muscles is paralyzed, part of the power of an adjoining nerve is transferred. It is an operation to precede tendon transplantation and to make that procedure unnecessary. If the nerve grafting fails, as it is supposed to do in about half the cases, then tendon transplantation is resorted to. There are two main types of transference. Peripheral implantation is that method in which the diseased nerve is cut, and its distal stump drawn over and sutured in a longitudinal slit in the healthy nerve, the end pointing centrally. Central implantation is the other type, in which

a part or the whole of a healthy nerve is cut, the central end drawn over to the diseased nerve and sutured in place, the end pointing to the periphery. In this operation eye instruments are used to manipulate the nerves, longitudinal slits instead of transverse ones are made, and longitudinal sutures instead of transverse are inserted in order to avoid bruising and constriction. One or two incisions of sufficient size expose the operative field. The respective nerves are carefully defined and dissected free. The nerve which is to be cut and swung over is divided at such a point that it may be united without tension or traction to the other nerve. That is to say, the free end must be long enough to reach the junction and be sutured without the use of force. The end is inserted in a longitudinal slit, held there by fine longitudinal catgut sutures, and the sheaths may be united also by a few fine silk sutures. Sometimes, instead of a typical central implantation, the diseased nerve may also be completely divided, and the two cut ends, i. e., one end from each nerve, brought directly together and anastomosed, in this way discarding the slit method. The following sites have been used for this operation:

1. For paralysis of the *tibialis anticus*. An incision is made from the head of the fibula downward over the peroneal nerve. Dissection carried through the peroneal muscles reveals the nerve, the several small branches running to the *tibialis anticus*, and the division below into the anterior tibial and musculo-cutaneous nerves. This is the general rule, as dissection shows that the muscle is supplied by separate branches high up, and not by the anterior tibial nerve. These three or four fine branches are cut, close to their origin, brought downward and sewed to the musculo-cutaneous, the ends pointing upward. It is Spiller's advice to take this nerve, as it is more apt to be healthy than the anterior tibial. It is the experience of the writer, in doing these operations on the cadaver, that the one difficult part is the suturing in place of the nerves. Much depends on the accuracy with which this is done.

2. When the entire anterior group is palsied, the anterior tibial may be likewise inserted into the musculo-cutaneous. Or when the peroneal group is affected, the musculo-cutaneous may be sewed to the anterior tibial.

3. At the bend of the knee, part of the external popliteal nerve may be inserted into the internal popliteal for paralysis of the anterior and external groups.

4. In the upper thigh, for paralysis of the quadriceps, the superficial branch of the obturator may be taken to replace the anterior crural. Two incisions are made, one over the femoral artery and the other to the outer side of the tendon of the adductor longus. The anterior crural is easily found and the branch to the sartorius is isolated and held aside, as the sartorius is rarely involved. The obturator is found by separating the adductor longus and pectineus, and defining the nerve as it crosses on the adductor brevis. The obturator is cut low down, to allow length for transposition. The central end is passed through a tunnel over the main vessels, and inserted into the anterior crural, the stub pointing peripherally.

5. At the elbow the distal stump of a paralyzed musculo-spiral may be swung around the elbow and fastened to the median.

6. In the forearm the ulnar, median and radial may be crossed, as seems indicated.²

III. *Tendon transplantation* has for its primary object

2. For the subject of neuroplasty refer to THE JOURNAL A. M. A., Jan. 21, 1905, p. 169; Annals of Surgery, May, 1903; and American Journal of Orthopedic Surgery, Aug., 1904.

the distribution of the remaining power about a joint, so that muscular strength may be exerted in all directions. For example, if the quadriceps at the knee is paralyzed, some of the hamstrings are borrowed to replace it. The secondary object is to use a tendon as a bridle or check rein, to prevent deformity and enable one to dispense with a brace. For example, in a case of paralytic flat-foot, a tendon may be passed through a canal in the navicular bone and fastened there, to hold the arch up and prevent dislocation of the astragalus. This operation is intended to improve conditions only, and must not be considered as a curative measure. It is most effective when one group of the weaker muscles is affected, because a weak muscle can not be made to do the work of a stronger one. For example, the prognosis of a varus or valgus is good, but no transplantation can do the work of the calf muscles, when calcaneus exists. Tendon shortening is included under this heading, i. e., when one overlaps and shortens several tendons about a joint, thus strengthening but not transplanting. Muscle transposition is another form, in which muscle is sewed to muscle. An illustration occurs at the knee, where the sartorius can be inserted into the quadriceps above the patella. Of late there has been a great tendency to add arthrodesis to a transplantation as often as possible, as a stiffened joint may so supplement the advantage gained that a practical cure instead of a relapse will be the result. Many writers now claim that arthrodesis is the main operation and the tendon transplantation is secondary. There is no doubt but that the combined procedures are of great value, especially at the ankle and medio-tarsal joints. Judgment as to the result of the operation should be reserved until some years have elapsed, as cases that promise well at the end of six months may relapse later. It is sometimes astonishing to see how a muscle will hypertrophy and increase in power, when it is given an opportunity to work at advantage with all resistance to passive motion removed. In deciding about an operation and the selection of tendons, one must remember that all cases differ as to the degree of paralysis, and that each case has to be individually studied, and a decision reached according to present conditions. It is not wise to operate until two years have elapsed since the attack, as some power may return in muscles that appear completely atrophied. The writer has seen power reappear to a slight degree, but enough to be of value, as much as eight years after the attack. Before operating, it is a good plan to put on a plaster cast for two weeks to accustom the parts to their new position, and prepare the tendons for transposition. Resistance to passive correction should be overcome by force either before or at the time of operation, so that the plaster dressing need afford fixation only, and not corrective force. The following points are to be borne in mind while operating. Asepsis, prevention of hemorrhage, the use of healthy material and union of tendons under tension. Muscle that has a dark red appearance is healthy, while a yellowish color signifies fatty degeneration. It has been proved that it is best to sew the transferred tendons so that they are slightly on the stretch. They will do better work later on after union is firm, than if they have been fastened without tension.

An Esmarch bandage is applied to provide a bloodless field. One, two or three longitudinal incisions are made over the sites as may be indicated. The tendons to be transposed are dissected free, from their insertion upward for some distance. They are cut at their

insertion, and a temporary suture inserted in their free ends to prevent them from slipping away. By blunt dissection a canal is made, reaching to the point where the tendons are to be attached. This channel should not turn at a right angle, but at an acute angle, so that the tendon will not have to act around a sharp corner. The tendons are drawn through the canal, and then fastened in their new position. Three methods are in common use. They may either be passed through button-holes in other tendons and sewed to them, or better, stitched to the periosteum or passed through a small canal made in the bone, turned backwards, and sutured to themselves and to the periosteum. The firmest grip possible is by the last method. A periosteal fixation usually gives a firm hold. The tendons of paralyzed muscles are apt to stretch, like old elastic. If the tendon to be transposed is too short, it may be lengthened by several silk strands. Experiments have proved that there is likely to be a formation of new tendinous tissue along such silk strands which will give a firm grip and a prolongation of the sinews to its new site. Fine silk sutures should be employed, and care taken to appose as much surface as possible that there may be the firmer union. Sterile silk is well borne by these structures as in the peritoneal cavity. The sheaths of the tendons are sewed with fine catgut. The skin is united with catgut and no drainage allowed. Plaster of paris applied for six weeks, removal of this being for dressing only. For a period of at least six months, great care should be taken that no excess of strain is brought to bear on the transposed tendons, and artificial support should be provided. This after-treatment is of chief importance and is the factor which often decides the result. Massage, electricity and medical gymnastics are appropriate aids.

It is a good plan to precede the operation on the patient by the same procedure on the cadaver. Some practical points shown by dissection on the cadaver are the following: The tibialis anticus, when swung over to the cuboid bone, can hardly reach its insertion, and has to be elongated by silk strands. The extensor brevis digitorum overlies the cuboid bone and calcaneo-cuboid joint, and must be drawn to one side in transplantation or arthrodesis. The tendo-Achilles is likewise short, when it is brought to the front of the ankle joint, and must be inserted above the joint. The peroneus brevis reaches the scaphoid bone very nicely when passed back of the ankle. The peronei tendons, posterior to the external malleolus, cross each other, and one must determine by pulling on the tendons, which is which. The tendon sheaths in this locality must be kept as intact as possible, to prevent the unused tendon from dislocation forward over the malleolus. A canal can be bored through a bone in children by a small curved trochar and canula, and then the tendon can be drawn through the canula without injury.

IV. *Arthrodesis* has for its object the artificial stiffening of a joint. It is especially for the poor, as it allows the patient to dispense with apparatus. It is very valuable as an adjuvant in doing a tendon transplantation. The bones must be fairly firm, or, in other words, the child should be 8 or 10 years old before it is attempted. The foot is its especial province. The ankle joint is stiffened for equinus or calcaneus, and the medio-tarsal joint for varus or valgus. Opinion is divided about the knee joint as to the advisability of making the lower extremity stiff throughout, when a fall might fracture one of the bones, brittle from trophic changes. The operation has been performed at the shoulder.

An Esmarch bandage is applied. An incision exposes the joint, which is opened. All of the cartilage is removed and the bone laid bare, by spoon, or by the use of chisel and hammer. Some operators remove a thin slice of bone to entirely eradicate the cartilage cells, which, by reproduction, would favor return of motion. The soft parts are sutured with catgut, and a plaster dressing applied. Strain must be avoided for six months or more, as after transplantation. In old cases of calcaneus, astragalectomy is more serviceable than arthrodesis.

V. Linear osteotomy or cuneiform osteotomy are too well known to require a special description. They are sometimes indicated at the tarsus, knee or hip in severe cases.

In closing, emphasis is laid on the fact that the results of infantile paralysis are of a mechanical nature. It is often possible to predict what deformity will ensue, according to the groups of muscles involved. The general practitioner has a duty to perform which has been too much neglected in the past, i. e., to prevent deformity. Each case differs from the others in the area involved and the severity of the paralysis. The treatment for the individual patient should be instituted only after a careful examination to determine what is indicated. The great tendency, of late years, has been to operate more often and to dispense with apparatus. The instrument maker is no fit person to have charge of such cases. Patients must be watched for years, at intervals of six months, because conditions change and vicious habits may be adopted.

DISORDERS FROM EYE-STRAIN.*

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Notwithstanding that much has been presented on this subject, it is a lamentable fact that a large percentage of the medical profession fail to appreciate the nature and consequences of eye-strain. Thousands of patients are annually being subjected to a medicinal treatment of reflex disorders, arising from eye-strain, while the etiologic ocular defect remains unappreciated by both the patient and his attending physician. Fortunately, this state of affairs does not obtain throughout the profession. Scattered here and there, like oases in a desert, are physicians who, having personally suffered (like the writer) from the torture of ocular defects or intelligently observed them among their clientele, are appreciative of their significance and rational treatment. When it is learned on investigation, however, that a large majority of text-books and monographs on internal and nervous disorders are silent as to the importance of eye-strain in the production of certain neuro-gastric diseases, it is small wonder that the etiologic ocular defect is so often unappreciated by the general practitioner in the treatment of these disorders.

The usual symptoms of eye-strain may, for the sake of brevity, be grouped under three headings: Phenomena of (a) muscular asthenopia, (b) conjunctival and retinal irritation, (c) defective vision. With the former condition the patient complains of pain or pulling sensation within the orbital cavity, temporal or frontal regions, or within the eyeball itself, which is due to an abnormal tension of either the extraocular or ciliary

muscles or both. With irritation of the conjunctiva, however, the eyeball and lids become injected, aggravating any existing acute or chronic inflammation of the lids, and attended with a hyperlacrimation which may be so pronounced as to simulate epiphoria due to stenosis of the lachrymal duct. The symptoms of asthenopia, irritation and blurring of vision may obtain constantly or only on doing near work, but are usually accentuated by a close application of the eyes, e. g., sewing or reading. Aside from myopia, normality of sight does not exclude the existence of refractive errors, especially the more moderate degrees of hypermetropia and astigmatic conditions, particularly in the young who enjoy the necessary accommodative power to overcome the defect. With the advent of presbyopia, however, when the accommodation becomes physiologically impaired, the refractive error usually becomes manifest with an attending lowered distant vision. So far as symptoms are concerned, furthermore, it is impossible to differentiate an imbalance of the extra-ocular muscles from an error of refraction, excepting when an extra-ocular muscle becomes so weakened that it can no longer cope with its opponent, when a diplopia occurs or it is corrected by an inclination of the head. Sensations of dizziness and nausea frequently obtain as a result of these conditions, although they may also be produced by astigmatic conditions, particularly when the axes exist at oblique angles.

The normal eye often tires with a physiologic amount of work, but when a prolonged effort is made to employ a defective visual apparatus the task becomes not only unpleasant, but oftentimes distressing to a marked degree with more or less reflex disturbances, depending on the nature and extent of the ocular defect, together with the systemic condition of the individual. Hence, a muscular or refractive defect which produces few or no symptoms in one instance may so affect the health of another person that a serious impairment of the vital functions occurs. The heart, which we are wont to regard as unceasing in its work, enjoys a longer period of rest than activity, but in instances of eye-strain the correcting muscles are under a constant tension during all the hours of visual activity. So long as there obtains a sufficiency of reserve force to supply this continued expenditure of nervous energy, the symptoms are latent, but finally in many instances an exhaustion occurs, accompanied by manifestations of a varied symptomatology.

It is to the importance of these systemic disturbances resulting from eye-strain, therefore, that I wish specially to direct attention. As previously indicated, these disorders are so varied, complex, and oftentimes pronounced that the symptoms of the causal ocular defect are quite unappreciated, in many instances, by both the patient and his attending physician, until by accident or design the etiologic condition is recognized and corrected. Thus it is that the ophthalmologist frequently meets with instances of chronic headache, gastric disorders, nervous exhaustion, insomnia, epilepsy, chorea and hysterical conditions which have resulted wholly from eye-strain, and continued in spite of the medicinal treatment which has been so erroneously employed, but have obtained permanent relief after the correction of an ocular defect.

To illustrate briefly the validity of my contentions in this direction, I append a few characteristic instances of reflex disorders which have often been encountered in my practice as an ophthalmologist:

CASE 1.—Mrs. H. W. W., aged 35, presented the following history: Since childhood she has suffered from nearly constant headaches and a nervous condition, although she has

* Read before the Michigan State Medical Society at Petoskey, June 28, 1905.

employed the advice of several physicians with no relief. She finally concluded that trouble originated in her eyes, inasmuch as near work increased her symptoms, and consulted a prominent oculist, who gave her the following lenses for constant use: O. D. +.50 +.25 x 90, O. S. +.75 x 90. Obtaining only partial improvement, she finally consulted me, when an examination of the eyes revealed the following refractive condition: O. D. —.25 +.75 x 90, O. S. —.37 +.88 x 90. Since wearing this correction she has enjoyed a complete cessation of headache and a gradual improvement in general physical condition during the past two years without the use of internal medication.

CASE 2.—Miss G. M., aged 30, for several years has complained of constant and intense headaches, pain in eyes, and nervous symptoms. Has received medicinal treatment from several physicians without avail. An examination of eyes showed the following conditions: O. D. +.50, O. S. +.25 +.25 x 90. Right hyperphoria 2° (tendency of right eye to turn upward). Glasses were prescribed to be worn constantly, with which the muscular imbalance was corrected as well as the refractive defect. During the following year she informed me that the former symptoms had entirely disappeared, but a year later the symptoms began to return, when an examination showed that the hyperphoria had increased to 4°, for the permanent correction of which I advised a graduated tenotomy, but this was declined, so the former prismatic correction was increased to meet the condition, since which time she has not come under observation.

CASE 3.—Mr. P. B. J., aged 25, presented history as follows: For several years he has complained of constant dull frontal and occipital headaches, pains within the orbit, loss in weight, and pronounced nervous symptoms which were increased by a prolonged use of the eyes. Riding on the cars, attending the theater, or watching rapidly moving objects invariably increased the above symptoms, attended with a sensation of nausea. He had employed the advice of several general practitioners, without permanent relief. Was wearing O. U. +.50 sph. An examination of the eyes revealed the following conditions: O. U. +.50 x 90, and 12° of esophoria (tendency of eyes to turn inward). Advised a graduated tenotomy of both internal recti, which was accordingly performed, leaving but 1° of imbalance of muscles. So great was the relief afforded by the operation and correction of the astigmatism that the patient was enabled to follow with comfort his clerical work, and rapidly gained in vigor and weight, without the aid of medication.

CASE 4.—Mr. G. S. M., aged 31, consulted me, presenting the following history: Marked headaches, neurasthenia, a growing insomnia, and gastric disorders. During the previous ten years he had consulted several general practitioners and oculists regarding his condition, but had obtained no permanent improvement. To account for the symptoms one physician informed him that he had "congestion of the brain," while an equally mistaken prominent oculist corroborated this diagnosis because a "retinitis" was found to exist! Examination of his ocular condition revealed to me the following conditions: O. D. +.25 +.25 x 90, O. S. +.50, and 18° of esophoria. When I informed him that, in my opinion, his condition was due largely, if not wholly, to the imbalance of his extraocular muscles, he was astonished, as none of his medical advisors had suspected or made a test for heterophoria (imbalance of eyes). I advised a graduated tenotomy of both of his internal recti, which was performed. Although previous to the operation and wearing of correction for his refractive error, he was particularly distressed by insomnia, during the past two years he has frequently expressed his gratitude for the great relief afforded him; and is now carrying on his multitudinous duties with satisfaction.

CASE 5.—Mrs. M. S. W., aged 35, presented the following history: Since childhood she has been subject to periodical headaches, which she regarded as hereditary, inasmuch as her mother and an aunt had suffered similarly without relief. During the past few years she has complained of heart trouble, dyspepsia, marked constipation, and periods of extreme nervousness. While suffering from an attack of headache an uncontrollable nausea and vomiting would occur which so ex-

hausted her strength that she was often compelled to keep her bed for several days. Several physicians had been consulted regarding her condition, but no permanent relief was obtained. Finally her refractive symptoms became so evident that she was led to consult me regarding her ocular defect. Examination of eyes revealed the following facts: O. D. —1.00 + 2.25 x 60, O. S. —.75 + 2.25 x 120. Normal balance of extraocular muscles. The above correction was prescribed to be worn constantly. Although she experienced in the beginning some difficulty in wearing the glasses, she soon became accustomed to them; and although several years have elapsed since this defect was corrected, she has enjoyed a complete cessation of her former distressing symptoms.

CASE 6.—Mr. J. R., aged 43, a man of broad scientific attainments, presented the following history: During the past ten years he has suffered frequently from periods of nervous exhaustion, gastric disorders, constipation, and a marked insomnia, which of late had become more pronounced in spite of the advice and treatment of several physicians. He had concluded that possibly his symptoms might originate from an eyestrain, and accordingly consulted me in regard to his condition. An examination of the eyes showed the following conditions: O. D. +1.00 +.25 x 180, O. S. +.75 +.25 x 180, and 1° of left hyperphoria and 2° of exophoria (tendency of eyes to turn outward). Glasses were prescribed to be worn constantly, correcting both the refractive and hyperphoric conditions, while prismatic exercise was advised for improvement of the weakened internal recti. A marked betterment in both the ocular and systemic disorders was obtained thereby, but a couple of months later he again consulted me, stating that he was still conscious of some strain in the use of his eyes. A further test of his condition revealed the fact that the hyperphoria had increased another degree while the exophoria had disappeared. Being persuaded that my patient was suffering from a latent hyperphoria, the prismatic correction in his glasses was gradually increased until the imbalance became stationary at 4°, when I advised a graduated tenotomy of the left superior rectus to permanently correct the defect. At a subsequent date the operation was performed, leaving only ½° of hyperphoria, while the lateral recti were in balance. The cessation of his former systemic symptoms under this treatment was interesting and gratifying, both to the patient and myself. While previous to the correction of his ocular defect he was confined strictly to a simple diet of bread and milk and suffered greatly from his insomnia, in the course of a few weeks he was able to relish an ordinary mixed meal, his bowels became more regular, the insomnia disappeared, and a rapid increase in weight was observed.

CASE 7.—Mr. M. H. G., aged 28, presented the following history: During the past ten years he has been suffering from headaches, gastric disorders, and nervous symptoms, attended with a marked loss of weight. While in college some six years ago his symptoms became so marked that he was compelled to abandon his work. He placed himself under the care of several physicians, but obtained no relief until by accident he learned from a fellow-student, who had suffered a similar experience, that possibly his physical condition was due to an ocular defect. He accordingly consulted a prominent oculist, who gave him for reading O. U. +1.00 +.50 x 90, from the use of which he obtained some relief. After wearing this glass for four years he came under my care, and an examination of his eyes showed the following conditions: O. D. +.25 +1.00 x 90, O. S. +.37 +1.00 x 90, and a slight exophoria. He was instructed to wear his correction constantly, since which time his symptoms have entirely disappeared, and he is in robust physical condition. No medication has been employed by him since wearing this correction.

CASE 8.—Mr. C. A. H., aged 26, gave the following history: Previous to entering college he had passed the greater part of his life in out-of-door pursuits, but during the past two years, since devoting himself to study, his health has gradually failed until now he complains of a drawing sensation about the head, dizziness, gastric disorder, and a marked nervous condition. No definite refractive symptoms were noticed in use of eyes. He has consulted several physicians without obtaining permanent improvement. Examination of eyes showed the following

conditions: O. D. +.25 +.62 x 90, O. S. +.25 +.50 x 90, and 3° of exophoria. Prescribed above glasses to be worn constantly, in addition to which I advised employment of prismatic exercise for the improvement of his weakened internal recti. Within one month he noticed a marked betterment in his physical condition, which, without the use of internal remedies, continued to so improve that he was finally enabled to pursue his professional course of study with satisfaction.

CASE 9.—Miss E. S., aged 16, presented a history as follows: Since 6 years of age has had indistinct vision for distance and difficulty in reading which has gradually become worse, attended with a rolling of eyes, twitching of lids, spasmodic contortions of the face and shoulders, and an increasing nervous irritability. Examination of the eyes revealed the following conditions: O. D. — 3.00 — 1.50 x 180, O. S. — 3.00 — 2.00 x 180, and 1° of left hyperphoria. She was instructed to wear the above correction constantly whereby the muscular imbalance was also remedied by decentration of left lens. In the course of a year, without the use of any medication, the above symptoms practically disappeared and she gained markedly in weight. Two years later, however, she began to notice an irritation of the eyes, a blurring of distant vision, and some twitching about the eyes. Examination showed the following conditions: O. D. — 4.00 — 1.25 x 180, O. S. — 4.00 — 2.25 x 180, and 3° of left hyperphoria instead of above. With the correction of these defects the symptoms again disappeared in the course of a few months.

CASE 10.—Mr. C. L. C., aged 28, gave the following history: During the past five years he has complained of a pulling sensation in his eyes, feeling of constriction about the head, gastric disorder, loss of weight, and a marked nervous exhaustion, which finally terminated in an acute attack of melancholia. During the past six months he has been unable to use his eyes for ordinary reading. An examination of his ocular condition revealed the following: O. D. + 3.00 + .88 x 90, O. S. + 2.00 + .75 x 90, and 4° of esophoria. A partial correction was prescribed for constant use, and gradually increased until he was able to employ the full correction. In the course of a few months his former symptoms practically disappeared, and he was enabled to carry on his former occupation with satisfaction. Occasionally he would notice a return of some of his symptoms; but these were readily traced to a malposition of his lenses, due to a bending of his frame, on the correction of which the symptoms would disappear.

In conclusion, I wish to emphasize the fact that the foregoing illustrative cases of eye-strain are not rare in occurrence nor are the reported favorable results of ocular treatment exceptional, but they are frequently being encountered and successfully treated by those ophthalmologists who are doing thorough, scientific and conscientious refractive work. In contradistinction to these facts, however, I am sorry to admit that there is an alarming amount of humbuggery practiced in the "fitting of glasses." In making several thousand examinations of the eyes I have found that over 90 per cent. of refractive errors are astigmatic, one-quarter of a diopter or more, while 50 per cent. of the lenses prescribed from various sources are merely spherical. In other words, probably 75 per cent. of the glasses worn to-day do not accurately correct the ocular defects of the wearer, not taking into consideration muscular imbalances. When it is remembered, however, that the greater percentage of these glasses are furnished by pseudo-specialists, "jewelers and opticians," "optical specialists," "doctors of optics," "optical companies" and quacks in general, whose chief equipment consists of gross pretensions, commercial aggressiveness and the ubiquitous sign:

EYES EXAMINED FREE,

whereby the gullible and credulous are led to believe that they will receive something for nothing, it is small wonder, indeed, that the anticipated results of

ocular treatment are so frequently unrealized and that the uninformed laity and indiscriminating physician often confuse the claims of the ophthalmologist with those of the pseudo-specialist.

It is gratifying to note, however, that during the past few years an increasing interest and broader knowledge has been exhibited by the medical profession in the diagnosis and rational treatment of eye-strain. Even in the conservative medical centers of Europe, as I recently learned in an extended tour of her hospitals, considerable importance is being attached to ocular defects in the production of neuro-gastric disorders, but there is plenty of room for improvement in this direction, both at home and abroad.

AN ANALYTIC STUDY OF UREMIA.

WITH SOME GENERAL CONCLUSIONS IN REGARD TO ITS CAUSES AND TREATMENT.*

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CRITIQUE OF CURRENT UREMIA THEORIES.

If the current belief that uremia is due to renal inadequacy and the retention in the blood and tissues of excrementitious urinary bodies were correct, then (1) complete anuria should always produce uremia, and (2) the blood of uremic patients should always show an increase and the urine a corresponding decrease of urinary substances.

Anuria Without Uremia.—Many cases of complete anuria, due to various causes, are, however, recorded, in some instances persisting for several weeks, in which none of the characteristic phenomena of uremia developed. Most of these patients for days complained of nothing more than a feeling of extreme lassitude, death resulting suddenly from heart failure without preceding coma or amaurosis, and without eclamptic spasms or typical changes of the blood pressure. On the other hand, uremia not infrequently occurs when the flow of urine is abundant and the excretion of urinary solids and water does not appreciably deviate from the normal.

Similar results are seen in animals after experimental nephrectomy or occlusion of both ureters. The animals die, but not uremic.

Uremia and Urinemia.—Death produced in animals by the injection of urine also produces a syndrome that differs materially from the uremic symptom complex. One must, therefore, distinguish clinically between uremia and urinemia. In uremia we often, but not invariably witness many of the signs of urinemia, but also many other signs besides. These other signs are the most constant and the most characteristic symptoms of uremia and the fact that they do not occur in urinemia forces one to the conclusion that they must be produced by other factors than simple urine poisoning. This view is borne out by a study of the solids of the blood and urine in uremia.

1. *The Nitrogenous Constituents.*—With the recent refinement of chemical technic these bodies (comprising chiefly urea, uric acid and its chemical congeners, the purin bases, ammonia salts, amido acids, creatin and others) have been diligently studied. The accumulated material is enormous, but disorderly. A careful sifting of the analytic data leads to a negation of the retention theory of uremia.

* This is a preliminary synopsis, full analytic data and clinical protocols will be published later.

For we see (1) as many cases of uremia develop without as with an abnormal accumulation of nitrogenous constituents in the blood; (2) we find uremia when the nitrogenous waste products of the blood are below the normal average, and (3) we inversely often fail to witness the appearance of uremia when the accumulation of these products in the blood is high above normal.

Similar conditions are determinable in the urine. Uremia may develop when (1) the patient is in nitrogen equilibrium (i. e., when the nitrogen output corresponds to the nitrogen intake) or (2) when the nitrogen output is far above normal, or (3) when the nitrogen output is below the normal average as compared to the intake; but it does not appear from a careful sifting of the analytic data published (including also some unpublished studies of my own) that uremia is more common when the nitrogen output is reduced below normal than when it is normal or even increased. Finally, many cases of true nitrogen retention are on record in which uremia failed to occur.

A quantitative study of the circulating and excrementitious urinary nitrogen bodies, therefore, teaches practically nothing of the causes of uremia. Only when we determine separately the various groups of nitrogen bodies that occur in the blood and the urine do we encounter certain deviations from the normal that may be considered fairly characteristic. I refer chiefly to two findings, viz.: (1) A relative increase of the ammonia salts, both of the blood and the urine as compared to normal average values, and as compared to the circulating and excrementitious urea. (2) A relative decrease of the urea both of the blood and urine as compared to average normal values and to the total nitrogen contained in circulating and excrementitious nitrogenous waste products.

These two findings I consider to be of the greatest importance, as I will have occasion to show.

It is well to bear in mind that there may be present in minute quantities among the nitrogen bodies of the blood and urine certain highly toxic albuminoid or alkaloid bodies that might produce an enormous effect without appreciably changing the nitrogen content of the blood and urine nor the relative proportion of the better known nitrogenous constituents to one another. This point also will be referred to again.

II. *The Inorganic Saline Constituents.* In the case of the salts of the blood and the urine our data are for the most part obtained from physical methods of examination, viz., cryoscopic and electric conductivity tests, determinations that are far more accurate than chemical methods of analysis. The electric conductivity in particular is a function of the salt content (molecular concentration) alone of the blood and urine and is altogether independent of the nitrogenous bodies that may be circulating at the same time; hence this latter method gives us especially valuable information in regard to the salt economy of the body in uremia. The slight inaccuracies inherent even in these physical methods are, I believe, overbalanced by the mass of figures collected in each case, for the technic when once properly acquired is so simple and rapid of execution that the operator is enabled to perform a great many determinations in the same patient within a short time.

The collected data show a marked degree of uniformity and indicate clearly two things: (1) That uremia often occurs when the salt values in the blood are normal or under normal; (2) that uremia need not occur even when the increase of salts in the blood and the corresponding decrease in the urine are very marked.

It appears, in other words, that increased molecular concentration of the blood is by no means a constant phenomenon in uremia. (This refutes Lindemann's seductive "physical" theory of uremia.) There is, in fact, less numerical evidence to show that uremia is due to salt retention than to the retention of nitrogenous waste products. One might argue again as in the case of the latter that certain salts were exquisitely toxic and were present in such minute quantities that they might poison the patient without appreciably altering the molecular concentration of the blood; this postulate can not be absolutely negated by the evidence at hand; but if such salts play a commanding rôle in uremia (one might think for instance of cyanids) then they are not identical with any of the salts that normally appear in the urine, for none of the latter can exercise a pronounced toxic effect in quantities that would be so small as to escape detection by the chemical methods that are being employed to look for them.

This applies in particular to the potassium salts of the urine that have so often been accused of producing uremia. True, these salts are poisonous and they undoubtedly play an important part in urinemia (presumably causing death in this affliction by their action on the heart), but they can not be incriminated with causing the characteristic symptoms of uremia. Thus we are forced to the conclusion that neither the retention of the nitrogenous bodies nor of the salts that normally occur in the urine generally produces uremia. So much for the negative side of the argument.

The questions now arise: (1) What is the character and the origin of the poisons that can be accused of producing uremia? (2) What function or functions must become perverted; what organs (if not the kidneys) must become diseased in order that these poisons may be formed? For poisons there must be, as no one will gainsay.

THE CAUSES OF UREMIA.

It is well known that in uremia the urea secretion is often decreased; this fact is commonly interpreted to signify that the elimination of this body has become deficient. In other words, that it is being retained. If its elimination, however, were merely interfered with, it should always be correspondingly increased in the blood, and this is not the case.

I am inclined to the belief that the decreased urea secretion is not so much due to retention as to non-formation. This postulate is borne out by the finding referred to in a preceding paragraph, viz.: That with a decrease of the urea in the urine and blood, we very often find an increase of the ammonia. This points to the liver as the affected organ, for the bulk of the circulating ammonia is normally converted into urea in the liver.

There is other chemical evidence that points to the liver as the deranged organ. I refer, e. g., to the occasional increase of the purin base excretion relative to the uric acid excretion (the purin bases forming a precursor of uric acid that should normally be converted into the latter in the liver), and the increase of uric acid relative to urea (the former being a precursor of the latter, the conversion also occurring in the liver), the appearance of various amino-acid compounds, and compound glycuronates; of members of the acetone body group in uremia. The reduced tolerance for carbohydrates with alimentary glycosuria that I have noticed in several cases of chronic uremia also seems to point to some liver derangement.

All this chemical evidence that supports the idea of an hepatic instead of a renal origin of uremia is somewhat scanty; and our knowledge of the normal intermediary metabolism within the liver is at best still so deficient that we must approach the interpretation of its perversions with much trepidation. The clinical evidence, however, and what may be called the pathogenetic evidence in favor of the hepatic origin of many cases of uremia is in my judgment very strong and very convincing. For we know clinically that disturbances of the liver and of the kidneys often go hand in hand and I believe we would find this to be still more frequently the case if the liver were examined with the same degree of thoroughness as the kidneys in each case of nephritis or of Bright's disease that came to autopsy; and if mild, functional disorders of the liver were as easily recognizable as those produced by renal disorders of like severity.

That the liver, i. e., hepatic insufficiency, plays an important rôle in the pathogenesis of Bright's disease is acknowledged¹; that, further, the same infectious or toxic agencies that produce nephritis also affect the liver in most cases is clear. For to the liver and to the kidneys jointly is relegated the rôle of ridding the organism of toxins, the former eliminating them into the bowel by the bile, the latter into the bladder by the urine. Toxins, moreover, of gastroenteric origin (and they constitute the most important of the exogenous poisons) must pass through the liver to reach the general circulation and the kidneys beyond. The same applies to poisons derived from metabolic perversions (endogenous poisons) for they are either for the most part generated in the liver or are carried to it before they reach the kidneys.

Assuming now for the sake of argument that the kidneys were always primarily affected in cases that ultimately determine towards uremia, so that their power of eliminating circulating toxins were diminished, then the bulk of the disintoxicating function would be thrown on the liver and in time hepatic insufficiency, i. e., overtaxation, fatigue of the liver cells, would develop. The character of the hepatic lesion would depend in each case on the virulence of the circulating toxins and the length of time during which they circulated.

There is still another idea that must be considered in this connection. It may be called the defective filter idea. It is a well-known fact that nephritic kidneys, while on the one hand less permeable than normal kidneys for a variety of circulating bodies, are on the other hand more permeable than normal for certain other bodies. In the case of the kidneys we are dealing with a living selective filter that is intended to hold back certain substances that are still useful to the organism and to allow the passage of other compounds that have outlived their usefulness, that possess no more potential energy, that are completely oxidized, dead, more ash, and that should be gotten rid of as soon as possible.

When the kidneys are diseased, the filter leaks. Useful bodies that could still furnish a modicum of heat and energy are wasted. Among such bodies many are nitrogenous derivatives of albumin, as ammonia salts, amido acids, etc., bodies that should normally have been carried back to the liver for further elaboration to terminal products, like urea, uric acid, etc. When

such suboxidized nitrogenous compounds are wasted, the body, we must assume, is forced to disintegrate more of albuminous pabulum in order to make up the deficit and the bulk of this additional labor is thrown on the liver. In time, this organ must consequently become fatigued, so that the further disintegration of albumins either proceeds more slowly than normal or becomes altogether perverted into abnormal channels.

When this happens less urea and more incompletely dissimilated intermediary products of albuminous metabolism are thrown into the circulation; or bodies are split off from the albumin molecules that are completely foreign to normal blood and that are poisonous. Substances of this character are actually found in the blood of uremic cases.

One may further say axiomatically that the less complete the dissimilation of the albumins the more do the generated products maintain an albuminoid character (ptoma peptones, peptotoxins), and the more intensely toxic do they become.

That the general metabolism of albumins in particular is perverted in uremia is further manifested by the frequent appearance of acidosis in terminal uremia and even in pre-uremic states; in fact, an acid intoxication must be incriminated with producing many of the fulminating signs of uremic, as well as of diabetic, coma. The increased excretion of ammonia that has been referred to may even be explained on the basis of a chronic acidosis, for we know that ammonia is thrown into the circulation whenever abnormal amounts of acids begin to circulate. This is a protective process, inasmuch as it aids in maintaining the normal alkalinity of the body fluids and the alkali content of the cells. The ammonia salts formed in this way are sacrificed at the cost of urea; hence more ammonia and less urea in the blood and urine of uremic cases. As urea is the most potent physiologic diuretic the flow of urine is at the same time often reduced.

This in rough outline is the pathogenesis of a self-intoxication, either acute or chronic, that may follow or accompany chronic renal disease, and still be due more to hepatic than to renal inadequacy. That the liver is not the only organ affected is probable, and uremia interpreted as above is not so much the result of hepatic derangement alone as of a general metabolic disturbance. This view is forcibly borne out by the observation of an occasional case of uremia, in which the kidneys are found practically normal after death, and in which essentially no evidence of renal disease or even of functional inadequacy on the part of the kidneys presented itself during the life of the patient.

The manifold factors that may precipitate an acute attack of uremia in an individual suffering from hepatic insufficiency (pre-uremia) need not be enumerated in detail; the determining insult may be severe as, for instance, some virulent infection or intoxication (chloroform anesthesia) suddenly throwing a mass of work on the liver or causing degeneration of its cells, or it may be apparently insignificant, and consist of nothing more than an attack of gastric or enteric indigestion or merely some psychic or emotional shock that acutely deranges the liver function.

How important it is, therefore, to be able to recognize early even mild degrees of hepatic insufficiency (particularly in renal cases and in pregnant women), and to safeguard the patient against all the agencies that could suddenly throw a strain on the fatigued liver!

¹ Croftan: "The Circumstances and Treatment of Bright's Disease." *THE JOURNAL A. M. A.*, June 24, 1905.

GENERAL PRINCIPLES GOVERNING THE TREATMENT OF UREMIA.

We are wont to treat uremia by stimulating the flow of urine, by purging and by sweating, with the intention of forcing the kidneys to resume their work, and of ridding the body of the urinary bodies that we imagine to be circulating in excess. In addition, we attempt to regulate the diet in such a way that there shall accumulate in the blood the smallest possible amount of residual nitrogenous bodies ("Harnschlacken"). If, now, uremia is not due to the circulation in excess of such bodies, the above therapy is wrongly directed.

It is questionable, moreover, whether any of the above measures can at best do more than rid the body of water, some sodium chlorid and possibly a little urea; the loss of water one might imagine to do more harm than good, for it should promote the concentration of the poisoned body fluids, and hence render them more toxic. There is surely no exact evidence to show that the sweat or the urine of uremic cases after the use of diaphoretics and diuretics becomes more toxic than before; nor has any one ever succeeded in demonstrating in such sweat or urine any of the albuminoid or alkaloid bodies that must be accused of causing the most fulminating symptoms of uremia.

The chief object of treatment should be to prevent the development of acute uremia by giving attention to those organs and functions that threaten to fail. In order to do this intelligently, the renal idea should be relegated to the background, and more attention should be bestowed in pre-uremic states on the liver and the general metabolism. The liver, above all, should have a rest. To stimulate the liver in chronic uremia is bad practice. The same principles should obtain here as in the treatment of a fatigued heart or a fatigued stomach or a fatigued nervous system.

First rest, then graduated exercise until the normal tone is regained. Stimulation should be reserved for emergencies and as a last resort. To accomplish this end all articles should at first be eliminated from the diet that can irritate the liver or stimulate it to increased functional activity; every effort should be made to reduce intestinal putrefaction to a minimum, for intestinal toxins as they reach the liver severely strain the disinfecting function of the organ. No cholagogues should be administered.

After a period of rest—and starvation for a few days seems a rational plan—the liver may be gently stimulated in the hope that it may be coaxed gradually to resume its functions. This should be attempted by the carefully graded administration of salicylates, of bile acids, possibly of calomel; in addition, various dietetic and physical means may be adopted that we know to be capable of stimulating the various functions of the liver. All this treatment should be carried on with careful supervision and daily control of the effect of these measures on the functional activities of the liver as evidenced by the composition of the stools and the urine and the general condition of the patient. The details of the various means mentioned and of the symptomatic evidences of the state of the liver function can not be discussed within the narrow frame of this article. I content myself with establishing general principles.

The treatment of the acute uremic attack is always an ungrateful task; for it is immaterial whether we are dealing with a disorder that is primarily or in its ultimate consequences due to renal or hepatic or general

metabolic insufficiency, in any case we are dealing with a terminal syndrome, that is due to the crumbling of the whole cellular edifice. To arrest this collapse, essentially means to revive a dying organism. That this may occasionally be done for the time being can not be denied; and as the recuperative powers of the human body border on the phenomenal no effort should be spared to bring an acutely uremic patient back to life.

Of sweating, purging and the stimulation of the kidneys I have already spoken. The administration of liver stimulants by mouth seems hardly feasible, and I have never seen any good effects in uremia that I could fairly attribute to this practice. The most sensible procedure is blood-letting. This useful measure constitutes a lost art nowadays, and it is time that it should be revived; we are dealing in uremia with a toxemia (for no organic lesions that could explain uremia are discovered after death), and to eliminate some of the poisons that are present in the blood by bleeding is always indicated; whether the injection of a saline to replace the lost fluid is useful or necessary is not yet established; it can certainly do no harm, particularly if some saline is injected that can stimulate the hepatic function, e. g., salicylate of soda in normal salt, or a solution of sodium citrate or phosphate in appropriate molecular concentration. Symptomatically, the use of such infusions has been useful in my hands, and has occasionally caused the most alarming symptoms of an uremic attack to disappear when other measures, I think, would have failed.

100 State Street.

A CASE OF TRAUMATIC ANEURISM OF THE RIGHT RENAL ARTERY, WITH A REVIEW OF THE LITERATURE.

PENN-GASKELL SKILLERN, JR., M.D.

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PHILADELPHIA.

Because of its rarity and the few cases that have been successfully operated on, I report this case of traumatic aneurism of the right renal artery that occurred during my service as house surgeon at the German Hospital. This patient was operated on by Dr. John B. Deaver, with whose permission I present the report:

History.—J. D., male, aged 26, single, machinist, was admitted to the surgical wards of the German Hospital March 17, 1905. There is no hemophilia, tubercular, neoplastic, cardiac or nephritic history in the family. The man smokes constantly and has used alcoholic beverages freely until lately. He denies venereal history. His appetite has been variable; bowels have usually been regular.

Present Illness.—When 12 years of age he was thrown from a horse and landed heavily on the ground, the brunt of the blow being received in the right lumbar region. The patient went to bed on account of shock, and complained of sharp, cutting pain in the right lumbar region, followed by hematuria. There was no vomiting. After being confined to bed for about twenty-four hours, the patient got up and went about his business. About a month after the accident he was seized again with a sharp, cutting pain in the right lumbar region, which lasted about two hours. He has had similar attacks of pain, usually with intervals of five days; often six months would elapse without any symptoms whatsoever. Each attack was severer than its predecessor.

The patient has never vomited, except after a hypodermatically injected dose of morphin; has never passed a calculus; he has never had a chill during an attack; he has never had a protracted cough, nor has he noticed any loss of weight. He was never jaundiced and never passed a gallstone.

The present attack began suddenly four days before admission to the hospital, with a colicky pain in the right lumbar region, which was referred down along the course of the right ureter to the end of the penis. Two days before admission he passed a moderate amount of blood through the urethra. This is the third attack in which blood was so passed.

Examination.—The patient was found to be of medium size and well nourished. Careful examination of the body revealed no pathologic condition, except that in the right lumbar region, where there was a moderate degree of bulging of the walls of the ilio-costal space, together with tenderness and pain rigidity.

There was a fixed tumor laterally between the ninth rib above and the iliac crest below, posteriorly reaching the right erector spinae muscle, and anteriorly extending to a point 3 cm. external to the right linea semilunaris. Dullness was obtained over this area. The tumor was apparently cystic. No thrill or expansile pulsation could be felt, nor could a bruit be heard. The area of liver dullness showed a displacement of the liver upward for about 4 cm.

Blood Examination: Hemoglobin, 60 per cent.; red blood cells, 2,700,000; white blood cells, 11,700; color index, 1.0.

Urine Examination: Total amount in twenty-four hours, 620 c.c.; color, dark brownish-red; reaction, acid; sp. gr., 1.029; albumin, trace; glucose absent; urea, 2 per cent. Microscopically, abundant red blood cells, epithelial cells, phosphates and leucocytes were seen. No tubercle bacilli were found.

Diagnosis.—The history of a fall from a horse, landing on the right side, followed by pain in the right lumbar region and by hematuria, with moderate disability, suggested trauma of the kidney. The subsequent history of periodical attacks of pain, several of which were accompanied by hematuria, and the presence of a yielding tumor led us to suspect a hematonephrosis.

No signs were elicited that would reveal the presence of an aneurism. The duration of the condition, fourteen years, taken in conjunction with the negative family history, the absence of metastases or of cachexia, and the very moderate constitutional disturbances, led us to exclude malignancy, the secondary anemia present being accounted for sufficiently by the latest hemorrhage. Hydronephrosis was also excluded. So, too, the history and findings of the case made the presence of a renal calculus an improbability.

Operation.—The patient was etherized and the operation performed by Dr. Deaver on March 18, 1905.

An oblique incision 10 cm. in length was made in the right ilio-costal space, and the perineal fat exposed. The right kidney was palpated and found to be enlarged sufficiently to warrant an extension of the incision anteriorly about 7.5 cm., carefully avoiding the peritoneum. While attempting to deliver the kidney, its lower pole ruptured, allowing about 200 c.c. of partly clotted blood to escape. The ureter was clamped and ligated. The kidney was delivered by successively clamping and cutting the adhesions surrounding it. The renal artery was palpated and found to be 1.5 cm. in diameter and the site of a tubulated aneurism. It was clamped close to the aorta and opened distal to the clamp, permitting the escape of fresh blood. The renal vein also was clamped. In freeing the upper pole of the kidney it was found necessary to go as high up as the ninth rib. The kidney was removed, but that part of the renal artery between the clamp and the pelvis of the kidney was left in place. Oozing from the bed of the kidney was controlled by a piece of iodoform gauze; four clamps were left in, the handles projecting through the incision, which was closed in the usual manner.

Postoperative History.—The patient was on the operating table forty-five minutes, and when removed to bed the temperature was 99.6, the pulse 128, and the respirations 28. There was no sign of shock.

The clamps that were left in the wound for forepressure

were removed on the fifth, the gauze on the sixth, and the stiches on the ninth day after operation.

The patient had an uneventful recovery, with the exception of a mild delirium on the fourth, fifth and sixth days after operation, and was discharged, cured and in excellent condition, on May 2, 1905, forty-five days after operation.

Of interest in determining the permeability of the left kidney after operation by gauging its intensity of elimination is the appended urinary table for the two weeks following operation:

POSTOPERATIVE URINARY FINDINGS.

| Date. | Amount in 24 hr., c.c. | Sp. Gr. | Color. | Albumin. | Urea, per cent. | Microscopic Findings. |
|---------|------------------------|---------|------------------|-------------------|-----------------|---------------------------|
| Mar. 17 | 1629 | 1.029 | Dark brown... | Trace... | 2 | Numerous red blood cells. |
| " 18 | 700 | 1.032 | Reddish brown... | Trace... | 2 | No tubercle bacilli. |
| " 19 | 1110 | 1.025 | Yellow... | Absent... | 2 | Phosphates, urates. |
| " 20 | 950 | 1.028 | Amber... | Faint trace. | 1.7 | Phosphates, uric acid. |
| " 21 | 875 | 1.028 | Yellow... | Very faint trace. | 1.7 | Phosphates, uric acid. |
| " 22 | 680 | 1.034 | Reddish yellow. | Absent... | 2 | " " |
| " 23 | 829 | | Cloudy yellow. | Trace... | 2 | " " |
| " 24 | 750 | 1.030 | Yellow... | Very faint trace. | 2 | " " |
| " 25 | 400* | 1.032 | Yellow... | Absent... | 3.3 | " " |
| " 27 | 1860 | 1.013 | Yellow amber... | Absent... | 1.75 | " " |
| " 28 | 1460 | 1.017 | Pale yellow... | Faint trace. | 1.7 | " " |
| " 29 | 1310 | 1.012 | Pale yellow... | Faint trace. | 1.2 | " " |
| " 30 | 1290 | 1.014 | Yellow... | Faint trace. | 1.2 | " " |
| " 31 | 800 | 1.026 | Yellow amber... | Very faint trace. | 1.8 | " " |
| April 1 | 700 | 1.021 | Yellow... | Faint trace. | 1.9 | " " |

* Plus.

N. B.—Glucose always absent. Reaction invariably acid.

Examination of Kidney.—The kidney was examined by Dr. A. O. J. Kelly, who kindly furnished the following report:

The kidney, when removed, was fragmented and partly disorganized, and measured 11x6x4 cm. The lower two-thirds were surrounded by, and lay flattened against, the sac of a false aneurism. The kidney tissue in this region consisted almost exclusively of cortex, and varied in thickness from 4 to 8 mm., but was very much attenuated at the extreme lower pole, where rupture had occurred. The tissue was much compressed, and immediately adjacent to the blood clot it was quite fibroid. The cortex of the kidney elsewhere than immediately surrounding the false aneurism contained a few small cysts. The renal artery, having been cut off close to the kidney, could not be further studied.

Microscopically, areas of chronic parenchymatous nephritis, with moderate fibrosis and round-cell infiltration, were found.

By consulting the literature, I find that in all twenty-two cases of aneurism of the renal arteries have been detailed by other writers. Keen¹ described a nephrectomy for a large aneurism of the right renal artery, and gave a résumé of twelve previously reported cases of renal aneurism.

Morris² described a case of aneurism of the left renal artery, and gave abstracts of twenty-one previously reported cases.

P. Ziegler³ gave a general résumé of the subject of renal aneurisms, together with abstracts of twenty cases which he had collected.

Through the kindness of the librarian in the surgeon-general's office, Major-Surgeon Walter H. McCan, I have collected four more cases, and these, together with the case here reported, bring the recorded cases up to twenty-seven. This is the fifth patient who has been operated on; of the other four, one died.

Ziegler³ has described the etiology, symptomatology, diagnosis, prognosis and treatment of renal aneurisms—

1. Keen: Philadelphia Med. Jour., 1900, vol. v, p. 1038.

2. Morris: Lancet, 1900, vol. II, p. 1002.

3. Ziegler: Centralbl., f. d. Grenzgeb. d. Med. u. Chlrr., Jena, 1903, vol. VI, pp. 2-8.

so well that I would deem this article incomplete should I not quote him:

"Of aneurisms, those of the renal arteries are among the rarest, and . . . are rarer than splenic aneurisms. Their aneurism is small, it may possibly give no symptoms and perhaps will only be relieved accidentally during the course of an operation. Later it may produce a tumor and bring about atrophy of the kidney, finally rupturing into the renal space, accompanied by severe hemorrhage, causing death, or not progressing so rapidly, a sac is formed at the false aneurism, in which repeated small hemorrhages lodge.

"The bleeding can become fatal before a tumor has made its appearance. . . . Sooner or later a tumor will always form, and this is, besides the hemorrhage, the most serious symptom. The tumor may give rise to no pain or may be accompanied by most excruciating pains; the size of the tumor may vary from that of a fist to a man's head. . . . Pulsation is absent in renal aneurisms, since the artery is too small in proportion to the size of the sac for the impulse of the blood to be great enough to expand the sac sufficiently that it may be made manifest; so, too, auscultation rarely gives results. The ordinary symptoms that arise from the escape of blood or from the pressure of the tumor are very unreliable; mistakes are very readily made with neoplasms, hydronephrosis and hemato-nephrosis. In neoplasms, rapid growth, followed by emaciation and mild bleeding, are characteristic, and, in the presence of metastases, the diagnosis is clearer. In hydronephrosis, which also can be of traumatic origin, bleeding is seldom met with.

"The prognosis is extremely unfavorable. All cases in which no operation was done terminated fatally, and of these the cause of death was hemorrhage into the renal space, venter or retroperitoneal space.

"As to treatment, nephrectomy alone is to be considered, and, by all means, the transperitoneal method is to be preferred on account of the ease with which the renal vessels may be quickly ligated."

Ziegler then gives abstracts of twenty cases which had been reported up to January, 1903.

I have collected the following four cases:

1. Fulton⁴ writes of a woman, aged 36, with a history of severe pain in the right side with more or less collapse a day or two before admission to the Rhode Island Hospital. The diagnosis of extrauterine pregnancy was considered the most probable one, but the patient was not operated on because of her extreme condition, and she died shortly afterward. There was found at autopsy an enormous hemorrhage, retroperitoneally, on the right side, extending from the diaphragm to the brim of the pelvis. The kidney lay in the midst of this mass of blood clot. About one inch from the origin of the renal artery, there was an aneurismal dilatation of that vessel; this had ruptured, causing the hemorrhage.

2. Abbott⁵ reports on a specimen showing a small sacular aneurism on an accessory branch of the right renal artery. The history, in brief, is that of a woman, aged 56, who two years previously fell heavily, injuring her back, and who had never felt well since. Eighteen months later the patient sustained another heavy fall. A year ago she began to suffer from the renal insufficiency, which caused her death. Postmortem examination revealed a general anasarca and advanced chronic interstitial nephritis. The renal arteries were distinctly calcareous; the other arteries showed beginning atheroma. The right kidney showed four cicatrices, and, microscopically, advanced chronic interstitial nephritis, with marked periglomerulitis and atrophy of the tubules. In the medulla were hemorrhagic areas.

Of interest in this case is the association of three possible causative factors: a heavy fall, in which the patient injured her back; a chronic interstitial nephri-

tis, and marked calcareous degeneration of the renal arteries. The specimen, described by Abbott, shows a small aneurism on an accessory branch of the right renal artery, just beyond its origin, which presents a small excrescence, the size of a marrow-fat pea, on the posterior surface of the vessel. The contents of the sac were a single free, homogeneous blood clot. At the proximal end of the sac there was beginning fatty degeneration. There were no symptoms of aneurism of the renal artery present.

3. Barnard⁶ reports a very interesting case of a small calcified and cured aneurism of the right renal artery that caused the death of the patient in a peculiar manner. A boy, aged 9, was thrown from a runaway horse, falling heavily to the ground on his back and right side. On account of signs of hemorrhage into the venter, he was operated on the next day, and about 750 c.c. of black fluid blood were removed from the peritoneum, and a rent in the right lobe of the liver was found and packed. Death occurred the following day.

The postmortem examination revealed an aneurism, the size of a hazel nut on the upper of two branches of the right renal artery, the contents of which had partially calcified and had thus brought about a cure. The heart revealed a stenosis of the mitral valve, an embolus from which probably caused the aneurism.

Of further interest in this case are the facts not only that the aneurism and renal artery escaped uninjured, but also that the aneurism conducted the violence from the loin to the duodenum and liver, bruising the duodenum, and causing a stellate fracture of the liver that radiated from the renal impression, and a wedge-shaped area of pulping of the hepatic tissue, the apex of the wedge corresponding with the calcified aneurism. The base of the wedge appeared on the surface of the liver and allowed the free escape of blood into the peritoneum.

The kidney itself had escaped injury, but between the true and the fatty capsule of the right kidney, on its posterior surface, was a considerable hematoma, and this extended around the posterior surface of the aneurism.

4. Barnard⁶ cites the case of a little girl, whom he examined. The child was dying of malignant endocarditis and developed suddenly a large, diffuse swelling in the left loin behind the colon. At necropsy, this was shown to be a large collection of blood which had escaped from a ruptured aneurism of the left renal artery.

I emphasize Morris² valuable warning that as soon as the nature of the tumor is ascertained, the renal pedicle should be reached, and the renal artery ligated before attempting to empty or to remove the sac. The wisdom of this dictum is self-evident. The text-books do not mention aneurisms of the renal arteries, an error of omission that, I believe, should be corrected.

In cases in which a fall from a height with evidences of resultant injury to a kidney has occurred, and in which there is hemorrhage, it would be well to consider the diagnosis of aneurism of the renal artery, which is a diagnosis more definite than that of essential kidney hemorrhage.

In closing, I call attention to the fact, more of interest than of practical importance, that of all the arteries of the body the renal, when the site of a symptom-producing aneurism not involving the abdominal aorta, is one of the few that offers an ideal cure—total extirpation of the artery (and kidney) without interfering with the blood supply of any other part of the body.

4. Fulton: *Providence Med. Jour.*, 1904, vol. v, p. 9.

5. Abbott: *Philadelphia Med. Jour.*, 1900, vi, p. 959.

6. Barnard: *Jour. Path. Soc. Lond.*, 1900-1901, vol. III, p. 254.

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SUPERSTITIONS IN MEDICINE.

Superstition is a rather illusive word to define, and yet if we go back to its etymologic derivation from the Latin it is not difficult to understand. It comes from the Latin word *superstes*—a survivor. Superstitions then are survivals from a previous set of beliefs or opinions in any department of thinking which still continue to have their influence over men's actions though they have lost their basis or supposed basis in truth because of the evolution of the department of thought in which they occur. In the old days when many phenomena that are now readily explicable on natural grounds were incapable of explanation, theories were invented, such as those of ghosts and witches, and these were supposed to afford the desired reasons for things which the human mind is always so prone to seek. Most of these beliefs have disappeared in the progress of modern science and of education, yet there are some people who still continue to be ruled or at least influenced by the survival of the old theories, that is, by superstitions.

It is almost needless to say that there are not a few superstitions left in medicine; we mean even in scientific medicine. Popular medicine is full to overflowing with them. There are plenty of reasonably intelligent people, including many lawyers and ministers of the Gospel, in this country who still wear plain iron rings on their fingers, confident that somehow the electricity which they have been told flows from this into their systems prevents the occurrence of rheumatic and nervous pains of many kinds. Faithfully every second or third day they rub out the interior of the ring when it has become rusted because of perspiration and congratulate themselves on the fact that they are wearing it because here is the actual evidence on the inside of the ring that it is drawing various forms of insalutary material out of their systems.

This principle that something can be put on the outside of the body which will draw out evils from within has never lost its hold on the popular imagination, and indeed there are many physicians who apparently still cling to it. The poultice is still used by a great many practitioners of medicine with at least the subconscious idea that it will help to bring noxious material to the surface. A poultice, according to our modern medical scientific principles, is nothing more than a method of applying moist heat to the body. It does not matter then in the slightest degree what the poultice is com-

posed of, provided only that it is able to retain heat and moisture well for a reasonable period. There are many who still consider that the selection of the material of which the poultice shall be made for various diseases is extremely important. A linseed meal poultice is used in pneumonia, an Indian meal poultice is preferred in peritonitis, while there are some who consider that for erysipelas and for red and swollen joints a cranberry poultice is more effective than any other. These opinions are, of course, medical superstitions, survivals of the time when the drawing power of the poultice was considered to be its main reason for use.

There are superstitions, however, in departments of medicine that have been much more successfully studied. Notwithstanding the fact that it is now generally recognized that typhoid fever is a generalized infectious disease with a local manifestation, usually though by no means always or necessarily in the intestine, there are still many who believe that the medication for typhoid fever should always be directed to the administration of antiseptics which will hamper the growth of the typhoid bacilli in the intestinal ulcers. Even if these were killed there are always other typhoid bacilli in the system and the disease will run its course. Besides it seems to be forgotten that bacteria of all kinds are cellular organisms and that the body is composed of cells. Bacteria have learned to live alone and are hardy cells. The cells of the body, with their habit of dependence and living in colonies, are much less vital. As a consequence it would seem to be almost a certainty that any substance which would kill bacteria within the body would work serious ravages among all the body cells with which it came in contact. Of course it is possible that some substance might be obtained with a specific action against the bacteria and harmless for body cells. Such has actually been found for the micro-organism which causes malaria, but that is the only case on record, and the search for specifics has been one of the most unsatisfactory departments of investigation in medicine.

It is generally acknowledged at the present moment that acute articular rheumatism is due to a specific micro-organism, though it is not yet definitely decided just what that micro-organism is. In spite of the consensus of opinion in this matter, however, medical discussions still continue to be liberally interlarded with the most curious survivals of the older theory of the metabolic origin of rheumatism, superstitions for which there is no longer any basis in medical theory or knowledge. Physicians still talk of the rheumatic diathesis just as if there was a definite tendency to the occurrence of this disease somehow engendered in the tissues before infection. It is true that rheumatism once suffered from is likely to recur, but the same is true of pneumonia. We do not for that reason talk of a pneumonic diathesis. The question of heredity in rheumatism is still considered important by many, though how there can be heredity that affects the taking of an acute infectious disease is hard to understand.

In the minds of many physicians this same question of heredity still maintains much of the importance that it was formerly supposed to hold in pulmonary tuberculosis, though now the infectious nature of the disease, and even its contagiousness, is universally recognized. In the old days, at the beginning of the nineteenth century, before the various infectious fevers of childhood were separated from one another and clearly defined, morbid constitutional tendencies to these diseases were supposed to exist and hereditary elements were supposed to enter into the causation of them. These older superstitions have disappeared, but we have more modern survivals of antiquated theories to take their place. Apparently it would be well occasionally to make a review of the opinions we hold, in order to see how many of them are based on up-to-date knowledge and how many are hold-overs from a previous state of knowledge no longer justified by present medical conditions and progress.

METASTASIS OF BENIGN TUMORS.

At the annual meeting of the German Pathologic Society at Kassel in 1903 Borrmann of Göttingen reported a most interesting case of atypical tumor formation. It concerned a young woman who had suffered for three years from a hard, dark-red tumor, which recurred repeatedly after its removal, in all six times. Death resulted from extensive metastases in the lungs, in addition to which a nodule was found in the gluteal region, as well as existing recurrences in the scar. The remarkable feature of the tumor was, however, that in spite of this extensive metastasis and persistent recurrence in the primary site, the histologic structure was that of a typical benign growth. Borrmann could find not the slightest feature of malignancy in the growth, and characterized it as a simple hemangioma. All the recurrent growths and metastases presented the same appearances of masses of new-formed blood vessels, composed of mature cells, with perfect endothelial linings, which were often proliferated into the lumen of large vessels in a papilloma-like formation.

This case brings up a question of great interest and importance to the surgeon as well as to the pathologist—can benign tumors produce metastases? There occur in the literature a number of instances in which apparently typical chondromas, chiefly the large irregular growths of the pelvic bones, have grown into blood vessels and produced secondary growths in remote places, particularly in the lungs. These tumors have been structurally the same as the ordinary benign chondromas. Besides the chondromas the chief instances of apparent metastases of benign tumors have arisen from what appeared to be benign tumors of the thyroid. There are now in the literature reports of some twenty or more cases of this kind. These metastases have been found particularly in the bones, and as a rule the bone tumor has been removed at operation under the natural assumption that it was the primary growth. Not in-

frequently the secondary growths have been multiple, and occasionally the viscera, particularly the lungs, have been involved. The thyroid in these cases has shown either a simple diffuse goiter, or, more commonly, a small nodule of apparently benign adenomatous tissue; in any event, there has never been any growth in the thyroid that would even be considered as malignant, either from its gross or microscopic appearances, were it not for the suspicious coexistence of metastases. The secondary growths also have usually reproduced either the structure of simple adenoma or of typical normal thyroid tissue, so that some have been reported as instances of metastasis of normal thyroid tissue without a primary tumor. Beyond these two forms of growths there are practically no instances known of metastasis of non-malignant tissue; a few examples of secondary growths from benign gliomas, myomas and liver adenomas have been described, but they are for the most part doubtful.

We may interpret these observations in either of two ways. With v. Hansemann we may consider that the mere fact that metastasis has occurred is proof positive of the malignancy of a growth and characterize them, as Orth did Borrmann's case, as "metastasis formation by an otherwise benign tumor." In support of this is the fact that a number of these cases have resulted fatally from the effects of the secondary growths, as happened with the classical case of Oderfeld and Steinhaus.¹ On the other hand, we must consider the suggestive fact that the chief examples of the condition under consideration occur from tissues whose capacity for transplantation is perhaps greater than that of any other tissues in the body. If pieces of normal cartilage are implanted into animals, even of a foreign species, they will remain alive for a great length of time, and if injected into vessels they may live and grow slightly in the organs in which they lodge. When very young embryos have been injected or implanted into animals for the purpose of studying tumor theories, it has been found that the cartilage is the chief tissue that survives and practically the only one that grows. Likewise, of all the parenchymatous organs, the thyroid shows the greatest vitality when transplanted. Even the law of specificity of cells seems to fail here, for sheep thyroids have been successfully implanted into the human body, maintaining their vitality for some time. It seems to us that these facts are more than mere coincidences, and that it is quite possible that fragments of thyroid tissue or of chondroma tissue, when dislodged and taken into the blood vessels in the form of cells from a benign tumor, might continue to grow where they lodged, producing a true metastasis, without any other feature of malignancy. Such a growth could be properly designated only as a metastasis of benign tissue, and should be considered as an exception to the otherwise invariable rule that "metastasis means malignancy."

1. Centralblatt f. Pathol., 1903, xiv, p. 84.

THE PUBLIC HEALTH SERVICE AS A CAREER.

Dr. Wesbrook's interesting presidential address before the American Public Health Association¹ brings up once more a question which every intelligent physician should ask himself in all seriousness and contriteness of spirit: What can be done by the medical profession to strengthen the quality of public health work? Amelioration and palliation may take many forms, but the real problem often narrows down to a consideration of ways and means of obtaining trained and efficient service.

In Great Britain, as is known, a diploma in Public Health is required of candidates for the position of health officer. For this diploma special regulations have been laid down by the general medical council of Great Britain, which are designed to insure "a position of distinctly high proficiency, scientific and practical, in all the branches of study which concern public health." In other words, special qualification, involving both laboratory training and outdoor sanitary work, are demanded of those who wish to enter this important field.

The sanitary organization and administration of many German, French and English cities in certain features are so far in advance of much current American practice as to make the latter seem bungling and wasteful by comparison. It is not that improvement has not been made. The pessimistically inclined should be referred for encouragement to the condition of the New York Health Department in 1864 as set forth in Andrew D. White's recently published autobiography. The "health officers" and "health inspectors" of forty years ago were men who owned great blocks of tenement houses, in which they "kept low drinking bars." While a unit in ignorance and neglect of their duty, they were shown in the course of a legislative inquiry to be at variance in respect to the importance of "highjinnicks" (hygienics), a term that was introduced as meaning "persons who doctor themselves," and afterward interpreted by others as "bad smells that arise from standing water," or more commonly as a disease that was "quite serious" or "pretty bad" in the inspector's district, although one witness thought there was "not much of it." It is at least a satisfaction to believe that the return of Boole and his assistant inspectors is as remote as the return of the dodo.

At the same time, it is hardly to the point to urge that things have been or might be worse; our contention should be that they can easily be better. Are the best-educated and most influential men in the medical profession really throwing all their weight in support of modern and enlightened sanitary organization, or are they inclined to regard interest in municipal health affairs as unwise and as trenching on "politics"—to use a good word that Americans have helped to bring into disrepute? There are in this country hundreds of devoted and capable men engaged in the work

of safeguarding the public health who must feel at times isolated and apart from the great body of the medical profession. We should ask ourselves if this could be the case if the profession presented a united front to the onslaughts of all the varied interests that stand for revenue only in the modern city. There can be no question as to the impression that would be made on the community if the leading physicians stood solidly together and showed an active interest in developing and sustaining an efficient system of municipal hygiene. We have lately seen the speedy "volte-face" executed by an incredulous and jeering press as a result of the support given by physicians to the doctrine of mosquito transmission of yellow fever.

It is partly, possibly largely, because public health work has been regarded sometimes as an avocation that any physician can "pick up," and sometimes as an occupation only remotely concerning the practicing physician, that it has not yet afforded the opportunities for a career that are offered by other specialties. Native aptitude and proper training are essential to a successful career in the public health service; so are the appreciation and co-operation of those members of the community whose attainments best fit them to judge of the methods and fruits of the work of health officials.

OBLITERATING ENDOPHLEBITIS OF THE HEPATIC VEINS.

Some five or six years ago Chiari, of Prague, at a meeting of the German Pathological Society, called attention to a condition which clinically resembles cirrhosis of the liver, but which is due to an obliterating endophlebitis of the hepatic veins. The lesion had been described as early as 1846 by Budd in his well-known work on diseases of the liver, but, like many other rare conditions, it had been almost forgotten till Chiari again called attention to it. In the routine autopsy technic as usually practiced, the condition of the orifices of the hepatic veins, as a rule, is not investigated, and the experience of Chiari, who has observed seven cases of this condition in a few years, suggests that a great many must have been overlooked, probably because there is a definite cirrhosis of the liver in most cases, and this has been taken for the primary lesion.

The reported cases of obliterating endophlebitis of the hepatic veins have been recently collected by Hess,¹ who has made a careful study of them. So far not a single case has been recognized in the United States, though such cases must have occurred from time to time. The clinical picture of the disease resembles very closely that of ordinary cirrhosis of the liver. Males and females are about equally affected, and, in contradistinction to ordinary cirrhosis, the disease usually occurs in young adults. The onset of the symptoms is gradual, and most cases run a chronic course, though in rare cases the disease lasts only a few weeks. The first symptom is

1. THE JOURNAL, Dec. 16, 1905.

1. Amer. Jour. Med. Sci., 1905, vol. cxxx, p. 986.

often abdominal pain, and this may be severe, but is more usually mild, at any rate at first. In some cases the swelling of the abdomen is the first symptom which calls attention to the condition. Gastric symptoms may be prominent, as in cirrhosis, but in many of the recorded cases they are not noted. Ascites, distended abdominal veins, and enlarged spleen are fairly constant. Edema is a late symptom, and slight jaundice is not infrequently noted. The liver is usually enlarged, so that the cases resemble hypertrophic rather than atrophic cirrhosis. The usual length of time between the appearance of symptoms and death is about six months. In very rare instances, as in the case reported by Leichtenstern, death occurred in less than two weeks, with very acute gastrointestinal symptoms.

The etiology of this affection is obscure, and almost every one who has recorded cases has a different explanation. Chiari suggested a syphilitic inflammation of the veins, but on rather slender grounds, at any rate in some cases. In many of the other reported cases there is no suspicion of syphilis, and it seems quite certain that this disease can not be an invariable factor. Other causes mentioned are trauma, congenital malformation, perihepatitis, hepatitis, and thrombosis.

The differential diagnosis between this condition and ordinary cirrhosis must be very difficult, if not in many cases impossible. According to Hess, a positive diagnosis has never been made *intra vitam*. When we consider that the effect of damming back of the blood in the hepatic veins is, in the end, the same as that of portal obstruction, this is not to be wondered at. The condition, however, is one that should be thought of more frequently than it is at present. In a case resembling ordinary cirrhosis, but occurring in a young individual in whom the ordinary causes of cirrhosis are lacking, we should certainly be suspicious. The occurrence of pain over the hepatic area, which is rare in cirrhosis, should also make us hesitate before making the latter diagnosis. The rapidity of onset of the ascites and the rapid reaccumulation of ascitic fluid after tapping are suggestive of complete obstruction rather than the partial obstruction of cirrhosis, though not by any means pathognomonic. Taking all these points into consideration, it seems certain that from time to time we shall meet with cases in which we must seriously suspect endophlebitis of the hepatic veins, even if we can not positively diagnose it. It seems probable that the condition will become much more common as it becomes more widely known.

THE DEATH ROLL OF 1905.

In the Necrology Department of THE JOURNAL 2,045 deaths of physicians in the United States and Canada were recorded during 1905. On an estimated medical population of 125,000, the death rate for the year is 16.36 per 1,000—no material change from previous years, as in 1902 the estimated mortality rate per 1,000

was 14.74; in 1903, 13.73, and in 1904, 17.14. The age at death varied from 23 to 104 years, the average being 61; the number of years of practice varied from 0 to 75, the average length being 31 years and 1 month. Below we go more into detail on these and other points for the benefit of those interested.

The chief difficulty still met with is the incompleteness of the obtainable data regarding deaths. In the death notices of the year, no explicit cause of death was given in 706 instances, or 34.52 per cent.; the number of years of practice was omitted in 105 cases, or 5.14 per cent., and no information regarding age was obtainable in 284 cases, or 13.88 per cent., and this in spite of correspondence in hundreds of cases.

Of the decedents, 167 were members of the American Medical Association, and of these 7 had held official positions in the organization; 170 were chronicled as being members of the various state medical societies; 35 as members of district societies; 175 as members of county societies; 32 as members of local societies; 5 had been delegates to the international medical congresses, and 2 were members of the British Medical Association.

The military records for the dead of last year disclose the fact that 184 had served their country for the north and 70 for the south in the Civil War; 11 were veterans of the Mexican War; 2 had seen service in Indian campaigns; 12 in the Spanish-American War, and 10 had participated in foreign wars. Of present and past officers of the Medical Department of the Army, 35 died during the year; of naval officers, 21, and 2 officers of the U. S. P. H. & M.-H. Service. The national guard lost 16 medical officers, 3 of whom had attained the rank of surgeon-general, and 2 that of assistant surgeon-general.

Among civil positions of honor held by the dead here noted were the following: Congressmen, 3; state senators, 15; members of legislature, 53; U. S. consuls, 3; judges and court officials, 15; mayors, 34; councilmen, 22; postmasters, 12; county treasurers, 7; coroners, 33, and revenue collectors, 7.

Many of the deceased were prominent in educational matters: 4 had served as members of boards of regents of state universities; 22 as superintendents of schools or members of school boards; 64 as professors, lecturers or instructors in medical colleges, and 28 as members of state boards of health and medical examination and registration.

Among the medical positions held were 101 as health officers or members of health boards, 22 as county physicians, and 26 as superintendents of state or general hospitals. Nine of the deceased were editors of medical journals.

As before, "heart disease" heads the list of deaths causes. To this are assigned 202 deaths, 15 of which were from angina pectoris, 4 from endocarditis and 2 from myocarditis. Cerebral hemorrhage, which includes most of the deaths ascribed to "paralysis" and

"apoplexy," caused 153 deaths; pneumonia, 141; tuberculosis, 102, of which 4 were peritoneal, 2 laryngeal, 2 of bones, 1 renal, and 1 intestinal; nephritis, including Bright's disease and dropsy, 100; senile debility, 80; accidents, 72, of which 11 were due to morphin poisoning, 10 to drowning, 9 to railway accidents, 7 to falls, 5 to fractures of hip in the aged, 4 each to gunshot wounds and street railway casualties, and 3 each to burns, carbolic acid poisoning and runaways (poison alone caused 19 of the 72 deaths); after surgical operations, 53; suicide, 46, including 26 by gunshot wounds, 7 by morphin, 4 by carbolic acid, 4 by exsanguination, and 3 by strangulation; typhoid fever, 41; malignant disease, 34; septicemia, 28; appendicitis, 27; paralysis, 25; influenza, 24; uremia, 122; homicide, 20, including 13 by gunshot wounds, of whom 1 was killed while resisting an officer, 4 were killed in duels and 1 medical officer was killed in battle in the Philippines; meningitis, 16; liver diseases, 15; diabetes, 13; gastritis, 10; peritonitis, paresis and gall-bladder disease, each, 8; locomotor ataxia and hemorrhage of the lungs, each, 7; malaria, intestinal disease and insanity, each, 6; yellow fever, neurasthenia, erysipelas, brain disease and alcoholism, each, 5; pernicious anemia, 4; and, hematemeses, scarlet fever, smallpox, exposure, and diphtheria, each, 3. Of the total deaths, 138 were chargeable to violence; 72 were due to accident, 21 less than in 1904, 1 more than in 1903, and 12 more than in 1902; 46 were due to suicide, 10 more than in 1904, 22 more than in 1903, 23 more than in 1902; and 20 were due to homicide, 8 more than in 1904, 10 more than in 1903, and 7 more than in 1902.

The ages of the deceased varied between 23 and 104 years. Below the age of 30, 62 died; above the age of 70, 103; above the age of 80, 239; beyond 90, 23, and 2 had passed the century mark.

The extreme limits of years of practice varied between the year of graduation and 75 years. Eleven died in their year of graduation; 6 had been in practice more than 70 years; 65 more than 60 years; 303 more than 50 years; 629 more than 40 years; 982 more than 30 years; 1,467 more than 20 years, and 1,806 more than 10 years.

Among the notable dead of the year are the following:

Dr. Byron Cook Pennington, Atlantic City, N. J., fourth vice-president of the American Medical Association and chairman of general committee of arrangements for the 1904 session.

Dr. Albert B. Prescott, Ann Arbor, Mich., eminent as a chemist, author and teacher.

Dr. Walter S. Christopher, Chicago, eminent as a specialist on diseases of children, a pioneer for child study and medical inspection of schools.

Dr. Ernest J. Mellish, El Paso, Texas, prominent anesthesiologist.

Dr. Charles Smart, assistant surgeon-general U. S. Army, eminent as a chemist, a recognized authority on military hygiene and sanitation.

Dr. Henry Putnam Stearns, Hartford, Conn., teacher, alienist and expert on insanity.

Dr. Augustus Palmer Dudley, New York City, gynecologist, teacher and writer.

Dr. James Read Chadwick, Boston, obstetrician and gynecologist.

Dr. John Arvid Ouchterlony, Louisville, Ky., practitioner, teacher and writer.

Dr. Henry Darwin Didama, Syracuse, N. Y., vice-president of the American Medical Association in 1875, dean of Syracuse University College of Medicine.

Dr. Robert Henry Harrison, Columbus, Texas, vice-president of the American Medical Association in 1875, expert on yellow fever.

Dr. James Montgomery Holloway, Louisville, Ky., eminent teacher and practitioner.

Dr. Daniel E. Nelson, Chattanooga, member of House of Delegates of the American Medical Association.

Dr. Ambrose Loomis Ranney, New York City, anatomist and teacher.

Dr. William S. Forbes, Philadelphia, teacher of anatomy and author of original Anatomy Act.

POSTAL CHECK SYSTEM.

A bill has been introduced into both houses of Congress which provides for the printing of one-dollar, two-dollar and five-dollar bills with a blank space for a name. Such a bill could be used as currency until this space is filled in, after which it would be payable only to the individual indicated. In other words, when an individual desires to send one, two or five dollars through the mail he can do so with a postal check with the same safety as with his own check by filling in the name of the individual to whom he wishes it paid. When the payee receives the check he endorses it as he would similar paper, presents it at the nearest postoffice and it is cashed. The only expense to this transaction is two cents for a stamp to be placed on the bill. Certainly if there is anything that the government should provide for the public it is a more simple method of transferring small amounts of money than now prevails. At the present time one has to go to a postoffice, express office or bank for the accommodations these several institutions furnish or send his personal check. In either of the three former cases it costs him time and money; in the latter case it also costs him, or the one to whom the check is sent, more money than by either of the other methods unless he lives in one of the very few large cities, such as Chicago or New York. Recently the clearing house of the Chicago banks has adopted stringent rules by which the banks receive at least ten cents on every check that is cashed by them from out of town, except a few of the very large cities, and more if the amount of the check exceeds \$10.00. The adoption by the government of the postal check system would be against the interests of the express companies and the banks, and consequently these two big interests have opposed it. Who will represent the public before Congress? This matter is not of interest to physicians, except that it is of interest to every man who desires to

transfer money from one place to another. *THE JOURNAL* is particularly interested because it receives thousands of small checks during the year, and the ruling of the banks means an enormous added expense which either *THE JOURNAL* or the individual sending the check must pay. It is hoped that public sentiment will be so aroused in favor of this advantageous manner of transferring money that Congress will be compelled to adopt the postal check system, in spite of the opposition of the banks and express companies.

THE UNITED PROFESSION IN THE EMPIRE STATE.

In last week's issue of *THE JOURNAL*, under the head of Association News, appeared letters from the President and the General Secretary of the American Medical Association to the corresponding officers of the reorganized Medical Society of the State of New York relating to the perfected union of the two state medical organizations in the Empire State. That all difficulties in the way of such an union have been overcome, that all legal technicalities have been fulfilled, and that the amalgamation, so long desired, has been accomplished with practical unanimity and in the most admirable spirit, will afford sincere gratification to the entire profession. The congratulatory sentiments expressed by the general officers of the American Medical Association voice the feeling of the entire medical profession of America. With the largest number of physicians of any state of the Union, and with the superb personnel of the profession of New York City and of the entire state, the reorganized society has opportunities such as have come to no other state society. With wise and prudent leadership, and with absolute obliteration of every remnant of past disagreement, the reorganized society will enter a new era of achievement which will surpass all previous accomplishments and which will be worthy of its noble traditions. By affiliation with the American Medical Association its work and influence will be unlimited and will assume the highest importance in the national organization of the profession. The nearly fifty thousand members of the organized profession in America heartily rejoice with their brethren of the state of New York that the union and concord long anticipated have now become realities.

ANOTHER FRAUD CHECKED.

The postoffice department, with the co-operation of the Bureau of Chemistry of the Department of Agriculture, is doing most effective work, in a quiet way, in protecting the public from medical frauds. Of course, this work is not far reaching, for it is limited to those frauds that depend, more or less at least, on the postoffice for their success. We have published accounts of several fraud orders issued by the department, and this week we give space to another. A campaign has been conducted for the postoffice department by the Bureau of Chemistry against "manhood restorers," those which are in the form of medicines, but there have sprung up a number of firms which exploit mechanical contrivances—"developers." These affairs are not only means of swindling the ignorant and deluded out of their money, but they are

positively harmful, and with them it is absolutely impossible to accomplish any good. We understand that several other firms handling such contrivances are now under investigation. It is certainly encouraging that there is one branch of the government attempting to check the vultures who are preying on the fears of our youth, and this good work is going on and few know of it—none practically except those directly interested. For some reason the newspapers make no mention of these fraud orders when they apply to medicines, but do so when they relate to commercial affairs.

IS THERE CONCUSSION OF NERVES?

Concussion is a term which found early use in medicine to define a condition produced by violence and described as a "jarring" or "molecular disturbance" of an organ or part without gross or perceptible lesions and accompanied by a more or less complete but temporary suspension of function. For a time the term was applied to almost any organ, but following the increase in our knowledge of actual lesions its use gradually became restricted until at the present time it is seldom used except in connection with injuries involving some part of the nervous system, and even in this connection its applicability to the spinal cord has been strenuously contested by many writers. Archibald Young of London, in a recent article on "Gunshot Wounds of Peripheral Nerves," declares there is no such thing as concussion of a nerve. This opinion is based on his studies in a number of cases of injuries involving the peripheral nerves during the Boer War in South Africa. Most of these injuries were produced by bullets of various sizes and were just such as theoretically would most likely give rise to the symptoms of so-called concussion in the parts involved or in those immediately adjacent thereto. The occurrence of cases in which a single nerve trunk or cord is picked out from the midst of a closely-related "complex" with the absence of any signs of concussion of the remaining cords of that "complex" on the one hand, and on the other hand cases in which all the constituents save one trunk of a nerve "complex" are involved, would seem to indicate that the symptoms when present must be due to a distinctive injury to the nerve. That the symptoms in some cases may be transitory is clearly shown, but in these cases it is contended that there is always a contusion with swelling, edema, or ecchymosis of varying degree present. As a result of his studies Young concludes that "it is useless, if not, indeed, actually unsound, to adopt any special 'concussion' class of nerve implication associated with gunshot wounds." While it is perhaps possible to conceive of a "molecular disturbance" affecting a mass of cells such as are found in the brain, and which are constantly active, transforming or giving out energy, it becomes an entirely different matter when it concerns a structure which is purely passive in its function, such as a nerve cord, and we thus find the term "concussion" still further restricted in its applicability.

MEDICAL SPEAKERS AT ANTISCIENTIFIC MEETINGS.

One of the measures advocated by the new Austrian antiquackery society¹ is that of having bright and able medical men attend meetings of antivivisectionists and other faddists, in order to reply on the spot to statements discrediting science and scientific methods of research. A good example of the power of such work is given in a recent issue of the *British Medical Journal*. Richardson Cross rose and made a telling reply to Stephen Coleridge, an ardent antivivisectionist. Among other things, Mr. Cross asked if the persons present would admit, if it were possible or probable that some useful knowledge of the terrible disease, cancer, might be obtained from investigations under anesthetics of a limited number of animals, that it would not be justifiable. He was cheered frequently and was included in the vote of thanks tendered the speakers. Our British contemporary concludes its description of the meeting with the remark: "It is an unpleasant task to contend against prejudice and stupidity, but if medical men would come forward oftener in defense of scientific progress the itinerant propagandists would be more careful in their statements. As the whole strength of their crusade lies in exaggeration, which is too often left uncontradicted, it would crumble away before the power of the plain truth."

THE IMMIGRATION QUESTION.

During the year ending June 30, 1905, according to official figures, over one million emigrants landed in this country, thus eclipsing all previous records. With such an influx it would seem impossible that all could be of a desirable class, and the question was discussed at some length at the National Conference on Immigration, which recently met in New York. This body, composed of delegates from every portion of the United States and fairly representative of public opinion on this subject, adopted certain resolutions, including recommendation of changes in the present law regulating immigration and the stricter enforcement of existing regulations. Among the changes suggested were the extension of definitions of the excluded classes, defining the term "likely to become public charities" so as to include "all persons of enfeebled vitality, whether such condition is due to defect, inheritance, disease or to advanced age," and advocating the examination of intending immigrants at their homes or at points of embarkation, the requirement from each immigrant of a certified document containing a careful description of the person to whom it is issued similar to a passport, and also the increase of penalties on steamship companies for transporting undesirable immigrants. It is a well-known fact that certain European governments have made a practice of unloading some of their undesirable citizens on this country, and that transportation companies have not been scrupulous in increasing their profits on immigrants. The matter has become of such importance that President Roosevelt, in his recent message, emphatically called attention to these facts and suggested rem-

edies. The matter is one of the questions of present importance for our country. Leaving aside the purely economic and sociologic considerations and taking up only those of medical interest, there is still a good deal to be said on the subject. Besides those actually suffering from physical disease, there is a vast number among the foreigners who land on our shores who are mentally unfitted for the stress of life and conditions they will inevitably meet with here. The result is physical or mental breakdown and the overburdening of our public and private charities, to say nothing of the general deterioration which such an element of the population is liable to induce. The question of urban congestion is also a serious one with many medical aspects, and it is largely contributed to by foreign immigration. The bulk of immigrants nowadays, it is said, do not go into the country as agricultural laborers, but settle down in the cities among those of their own race. The medical profession has the opportunity more than almost any other class of men of studying many of the problems that are involved and of pointing out the way to their solution. It is a matter of public duty which it should not neglect.

Medical News

CALIFORNIA.

New Laboratory at Presidio.—The new laboratory for the United States Army General Hospital at the Presidio of San Francisco, erected at a cost of \$12,000, is now completed and ready for occupancy.

County Society Meets.—The Los Angeles County Medical Society held its annual meeting December 15, at which Dr. Fitch C. E. Mattison, Pasadena, was elected president, and Dr. R. F. Taylor, Los Angeles, secretary.

Fire in Hospital.—Prompt action on the part of the fire department quickly extinguished a blaze that started in a room adjoining the kitchen at the Clara Barton Hospital, San Francisco, December 9. Fortunately no panic ensued.

Annual Meeting and Banquet.—The San Bernardino County Medical Society held its annual meeting at Arrowhead Hot Springs Sanitarium December 13. In the evening a reception and banquet was tendered by the Arrowhead Hot Springs Company.

Shotgun Quarantine.—A shotgun quarantine has been established in the railroad yards at Mammoth on account of small-pox. Six cases have been reported, all among Mexicans. Armed guards are stationed at each end of the railroad yards and no one is allowed to enter or depart.

Vital Statistics.—There were reported 2,153 deaths in the state during November, 1,699 living births and 1,243 marriages, equivalent to an annual death rate of 15.7, a birth rate of 12.4, and a marriage rate of 9.1 per 1,000. Tuberculosis led among the death causes with 329, followed by heart disease with 211; pneumonia with 185; cancer with 117; apoplexy with 93; Bright's disease with 86; enteritis with 82; accidental injuries with 72, and suicide with 52.

Personal.—Dr. Bartolomeo Sassella, Los Angeles, gave a banquet to 30 guests, December 10, to celebrate his restoration to health after an illness of three months.—Dr. W. LeMoyné Wills, Los Angeles, has returned from Europe.—Dr. J. Wilson Shiels, San Francisco, sailed for Tahiti December 28, for a health trip of one month.—Dr. Louis Q. Thompson, Gridley, is ill with septicemia.—Dr. John J. Tully, Stockton, has gone to New York for nine months.

Annual Meeting.—The Southern California Medical Society ended its semi-annual session at Los Angeles, December 7, with a banquet at the Angelus Hotel, over which Dr. David B. Van Slyke, Pasadena, presided, and Dr. Walter Lindley, Los Angeles, acted as toastmaster. The election of officers, held in the afternoon, resulted as follows: Dr. Howell Tyler, Redlands, president; Drs. Frank Garcelon, Pomona, and William H. Roberts, Pasadena, vice-presidents, and Dr. Henry S. Keyes, Los Angeles, secretary.

1. Gesellschaft f. Bekämpfung des Kurfischertums, *THE JOURNAL*, Dec. 23, 1905, p. 1966.

INDIANA.

Hospital Opened.—Bloomington Hospital, founded and operated by the Local Council of Women of Bloomington, was opened to the public November 30. The institution has accommodation for 14 patients and Miss Blanche Stoops is the superintendent.

The Trembles.—At the recent meeting of the Indiana Academy of Science Dr. Robert Hessler, Logansport, read a paper on milk sickness, or the trembles, in which he gave an account of a five years' search for the cause of this now practically extinct native disease which has always been so mysterious and was such a terror to the early settlers. The disease was known under the name of "trembles" when occurring in animals, and as "milk sickness" when occurring in human beings after the use of milk from an infected animal, or after eating the flesh. The cause (or rather, what will likely be found to be the cause when the investigation is completed) is an undetermined species of *Sterigmatocystis*—a fungus of the class *Ascomycetes*. The organism was found in the blood of an affected horse, both as free spores and as small yeast-like bodies enclosed in leucocytes. The former disappeared in the course of a few days, while the latter kept on increasing, but later on diminished and disappeared by the time the disease subsided. Another horse similarly affected died and was buried before the true nature of the affection was recognized—before the physician heard of it. All tube inoculations from the blood developed pure cultures; growth develops abundantly on all kinds of media.

MARYLAND.

Personal.—Dr. Benjamin R. Benson, Marble Hill, near Cockeysville, Baltimore County, is ill with appendicitis. —Dr. Charles M. Ellis has been chosen president of the National Bank at Elkton, Cecil County. —Dr. Thomas Warfield Simmons of Hagerstown, who was operated on December 28 for bowel trouble, is said to be sinking.

General Hospital Report.—According to the annual report of the Peninsula General Hospital at Salisbury (Eastern Shore), 345 patients were admitted, 240 of whom were white and 212 free patients; 264 were discharged cured, 19 were not treated, and 7 were unimproved. There were 17 deaths, and 19 remained under treatment at the close of the year. Operations were necessary in 170 cases. There were 29 cases of appendicitis treated, the majority of which required operation.

County Society Election.—The Carroll County Medical Society has elected the following officers: President, Dr. J. Howell Billingslea, Westminster; vice-president, Dr. George H. Brown, New Windsor; secretary-treasurer, Dr. Charles R. Foutz, Westminster, and censor, Dr. J. Clement Clark, Sykesville. The society has had a bill framed for submission to the legislature requiring the county commissioners to appoint a health officer for every district in the county at a salary of \$50 per annum, in addition to the general health officer, who is also to have special charge of Westminster district and to receive a salary of \$150.

Baltimore.

The Bosley Dinner.—Physicians and officials of the health department gave their fifth annual banquet to Health Commissioner James Bosley December 27. Dr. William Royal Stokes was toastmaster.

Osler.—Dr. Osler was to arrive in Baltimore January 5, and during his stay was to be the guest of Dr. Henry M. Hurd at Johns Hopkins Hospital. —A report which originated in a Boston publication that Dr. Osler was thinking of returning to the Johns Hopkins University has been denied by him.

Smallpox Outbreak.—Eleven new cases of smallpox were reported for the week ended December 30. There were 36 deaths from pneumonia and 28 from consumption. The death rate was equivalent to 17.59 per 1,000. The health authorities are much concerned about the prevalence of smallpox, over 80 persons having been sent to quarantine in the past month with the disease or under suspicion. Vaccinators are busy.

MASSACHUSETTS.

Bequest.—By the will of the late Dr. George S. Hyde, Boston, \$50,000 is left to Harvard University Medical School, to be used as the trustees see fit and to become available at the death of the sister and brother of the testator.

Tuberculosis Hospital Report.—Long Island Hospital, Boston harbor, has received since 1900, 894 cases of tuberculosis; 421 patients have died; 23 have been discharged well; 157 are improved, and 293 unimproved. The heavy mortality is due to

the fact that usually only the most advanced cases are received here.

Music in Hospitals.—During January the following concerts will be given by the Hospital Music Fund under the direction of Dr. John Dixwell: January 7, at Home for Destitute Catholic Children; January 14, at St. Elizabeth's Hospital; January 21, at New England Hospital for Women and Children, and January 28, at the Home for Aged Couples.

Awarded High Honor.—The Boston Board of Health was awarded highest honors for its exhibit at the Lewis and Clark Exposition, Portland, Ore. The exhibit consisted chiefly of illustrations and explanations of the treatment of infectious diseases as developed and practiced by the board in Boston. The milk inspector of the board has recently secured convictions of 13 milk dealers for selling milk not up to the standard, of 4 others for selling adulterated vinegar, and one dealer for selling condensed milk adulterated with formaldehyd paid \$100 fine. A local druggist has also been fined \$25 for selling olive oil adulterated with almond oil, his conviction being secured by the State Board of Health.

Tuberculosis Exhibit.—For the success of the state tuberculosis exhibit, to be given in Faneuil Hall the last of December, a strong auxiliary committee has been appointed. The medical men include Drs. William T. Councilman, Harold C. Ernst, Vincent Y. Bowditch, Samuel H. Durgin, James J. Minot, A. G. Getchell, H. Lincoln Chase, Arthur T. Cabot, Arthur K. Stone, Charles W. Page, Edward O. Otis, Frank G. Wheatley and Walker Marley. It is hoped to reach people in every walk of life and to announce to them the fact that there will be such an exhibit. Notices are, therefore, being sent out to those who are in touch with groups of people, such as physicians, clergymen, teachers, charitable organizations, fraternal orders, etc. Young physicians chosen by Dr. William T. Councilman will act as guides.

Hospital Reports.—Worcester Insane Hospital reports that there were admitted during the year ended October 1, 307 men and 264 women, making a total of 1,226 patients resident there at that date, 619 men and 607 women. Of the men admitted 52 had been laborers, 20 operatives, 13 machinists and 12 carpenters. Of the women 49 had been housewives, 32 domestics and 23 housekeepers. Alcohol was the cause assigned for the condition of 77 men and 15 women, while weak constitutions accounted for 23, heredity for 32, sickness for 15, senility for 20, excessive tea drinking for 5, overwork for 1, bereavement for 7, fright for 1 and worry for 5. —Westboro Insane Hospital reports for the same period 538 admissions. Of those admitted for the first time 193 were American born and 134 of foreign birth. There were 133 deaths during the year.

NEW YORK.

New York City.

Pure Food Show.—A pure food show will be held in this city during the entire month of February under the direction of the Retail Grocers' Union. Several associations interested in the pure food movement will hold meetings throughout the month and there will be lectures by pure food experts.

Low Death Rate Again.—The death rate for the week ended December 23 was equivalent to an annual mortality of 17.20 per 1,000, as compared with 19.07 per 1,000 for the corresponding week of last year. There were 82 deaths from violence, while the deaths from contagious diseases were very few.

Personal.—Dr. Thomas Darlington has been reappointed commissioner of health at a salary of \$7,500 per annum. —Dr. and Mrs. William Osler arrived on the *Coronia* from Europe on December 24. —Dr. Samuel F. Brothers has been appointed a chief clerk at a salary of \$3,000 per annum. —Dr. Charles B. Kelsey was recently robbed by his butler of valuable silverware.

New Health Building in Brooklyn.—This new building, for which \$295,000 has been appropriated by the board of aldermen, will be erected in Brooklyn and will have 10,000 square feet of space, one-half of which will be for offices. These are to be separate from the general building. There will be an electric light plant and a modern system of ventilating. There will be a separate clinic and isolation wards.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended December 23, 764 cases of measles, with 12 deaths; 212 cases of tuberculosis, with 174 deaths; 300 cases of diphtheria, with 39 deaths; 170 cases of scarlet fever, with 6 deaths; 72 cases of typhoid fever, with 9 deaths; 15 cases of cerebrospinal meningitis, with 15 deaths, and 206 cases of varicella. A total of 1,839 cases and 255 deaths.

Patched-Up Immigrants.—Dr. Maurice Fishberg, special inspector of the immigration service of the United States, who has been visiting European terminals of the transatlantic steamship lines, claims that the "curing" of diseased aliens for admission to the United States has become a great industry abroad. He referred especially to the fixing up of cases of trachoma, and suggests that Marine-Hospital officials should be stationed at all the important immigrant stations of Europe. Dr. Fishberg emphasized the fact that comparatively few fakers succeeded in fooling the inspectors at Ellis Island. The use of adrenalin in cases of trachoma could easily be detected.

Milk Much Destroyed.—In the eleven months ended December 1 the Department of Health collected \$16,000 in fines imposed by the Court of Special Sessions on dealers who offered adulterated milk for sale. In the same period the inspectors poured 38,000 gallons of milk into the gutters as unfit for use, in most instances because it had a temperature of over 50 degrees F. The city daily consumes about 1,500,000 quarts of milk, and only 15 men are employed for the purpose of inspecting this supply. It is estimated from the number of convictions that more than 20,000,000 quarts of adulterated milk have been brought into the city during this period. There were 110,000 samples taken for inspection for adulteration and 6,000 samples were taken for chemical analysis during the two hot months of summer.

Results of Use of Pasteurized Milk.—The records of the Health Department show that in 1892 there were in the city 194,214 children under the age of 5 years and that 18,684 died in the year, the rate being 96.2 per 1,000. Pasteurized milk began to be used and in 1894 out of 256,137 children there were only 16,137 deaths, or 63 per 1,000. At the death rate of 1892 with the present population there would have been 24,640 deaths, whereas there were actually only 16,137, so that apparently there were 8,503 lives saved. Estimated on this basis, it is claimed that there were 4,025 lives saved last summer. On Randall's Island, where the city's children are cared for, the death rate prior to 1898 was 41.83 per cent. After Nathan Strauss established a pasteurizing plant on the island the death rate was cut down to 20.75 per cent, for the past seven years. Last year the rate among these children was only 16.52 per cent. This reduction in the mortality is caused entirely by the pasteurized milk, as other conditions were unchanged.

Hospital Notes.—The annual collection of the Hospital Saturday and Sunday Association was held in the various churches December 21. The association now has 40 hospitals on its list. During the last year the association cared for 53,000 patients, of whom 33,774 were free patients, besides giving medical attention to 131,838 dispensary patients.—Plans have been filed for a new six-story and basement building, to be erected in Central Park West for the New York Red Cross Hospital, to cost \$60,000.—Thomas F. Ryan has given \$1,000 to the New York Throat, Nose and Lung Hospital to fit up a special department for the treatment of women affected with tuberculosis.—The Presbyterian Hospital, in appealing for funds, asks that non-residents contribute because they so often receive aid in times of emergencies, and it is only fair that they should aid in the support of this institution.—Several persons whose names have appeared on the list of directors of St. Gregory's Society, organized to manage St. Gregory's Hospital, started by a "beauty doctor," are complaining that their names have been used without authority and that they are not interested in the society or hospital.

NORTH CAROLINA.

Society Meetings.—The Randolph County Medical Society has elected the following officers for 1906: President, Dr. S. A. Henley, Ashboro; vice-president, Dr. W. I. Sumner, Randleman, and secretary, Dr. Charles C. Hubbard, Worthville. Dr. Henley presented an instructive paper dealing with the history of the older members of the medical profession of Randolph County.—The Buncombe County Medical Society elected as officers for 1906: President, Dr. Thomas P. Cheeseborough; vice-president, Dr. William L. Dunn; secretary, Dr. Gaillard S. Tenmet, and delegates to state society, Drs. Marshall H. Fletcher and Willard P. Whittington, all of Asheville.

Buncombe County Society Banquet.—The tenth annual banquet of the Buncombe County Medical Society was held in Asheville December 18. Covers were laid for 60, a most elaborate menu was served and numerous postprandial speeches were delivered. During the four and a half hours' duration of the feast the orators covered an almost limitless field, ranging from grave dissertation on the advisability of standing by the American Medical Association and the revised pharmaco-

peia, the establishing of a public abattoir for Asheville, with sundry suggestions as to hygiene and public health, to a most vivid delineation, in prose or verse, of the supposed and real fancies, weaknesses and frailties of the various prominent members of the profession. Of particular note among the speech makers were Drs. Ambler, Weaver, Fletcher, Calloway, Brown, Sevier, McBrayer, Whittington, Archer and J. Howell Way, the secretary of the state society, who was present as an invited guest of the society. The affairs medical of Asheville and Buncombe County are in most excellent condition. A very considerable portion of the happy state of affairs existing here is attributable to the potent influence of the county society on its membership through its regular semimonthly meetings.

The Indigent Insane.—The governor attended the regular meeting of the directors of the state hospitals recently and caused a complete investigation to be made of the commitment papers and other data bearing on the case of each patient under treatment in the two insane hospitals of North Carolina, and as a result of his careful investigations the absurd charges of the daily press of the state that persons not entitled to receive treatment at the expense of the state were received and treated, were shown to be without foundation. In this connection it may be of interest to note that the question as to the "indigency" of patients treated in the state hospitals at public expense has already been passed on some time since by the Supreme Court of the state and the decision of what an "indigent" is in North Carolina rendered in case Hybart, 119 N. C., 359, in the following language: "The term 'indigent insane,' as used in section 10, article II, of the Code, includes all those who have no income over and above that which is sufficient to support those who may be legally dependent on the estate." With this decision of the Supreme Court for guidance, the investigating committee reported less than half a dozen of the 2,000 patients as not being entitled to the care of the state in the institutions.

OHIO.

Personal.—Dr. and Mrs. Silas W. Fowler, Delaware, will sail from New York February 8, for the Mediterranean.—Dr. S. E. Allen has been appointed by the board of public service as next health officer of Cincinnati from January 1.—Dr. George P. Tyler, Ripley, has for the third time been appointed chief surgeon of the Ohio River & Columbus Railroad.

Darke County Medical Society.—The medical society of this county held its regular meeting on December 14 at Greenville. The following officers were elected: President, Dr. Matthias M. Corwin, Savona; vice-president, Dr. William Lynch, Greenville, and secretary and treasurer, Dr. Philip Dickes, Greenville. An enjoyable banquet was held in the evening.

Auglaize County Society.—At a meeting of the Auglaize County Medical Society, held at Wapakoneta December 14, Dr. John E. Griewe of Cincinnati, read a paper, "The First Principles in the Treatment of Heart Lesions," illustrated by some twenty diseased hearts. In the banquet in the evening, at which Dr. Charles C. Berlin, Wapakoneta, acted as toastmaster, speeches were made by Drs. Brooks F. Beebe and Charles A. L. Reed, Cincinnati; Dr. Frank D. Bain, Kenton, and Dr. Henry E. Beebe, Sidney, Ohio. Ninety-three per cent. of the physicians of the county are members of the society. This is believed to be the largest proportion of any county medical society in the state.

PENNSYLVANIA.

Physician's Bill Disallowed.—The commissioners of Lackawanna County have refused to pay the bill of \$2,000 of Dr. Alfred Gordon, Philadelphia, for nine days' attendance at court and for giving expert testimony.

Personal.—Dr. Charles D. Schaeffer has been selected acting mayor of Allentown during the absence of Mayor Dr. Alfred J. Yost.—Dr. Howard S. Anders, Philadelphia, delivered an address before the Lebanon County Medical Society on "The Practical Relations of Certain Physical Signs to Prognosis and Treatment."

Pennsylvania Relief Report.—The monthly report of the Employes Relief Fund for the Pennsylvania Railroad Company's lines east of Pittsburgh and Erie shows that the payments of benefits for November amounted to \$13,609.91, \$45,739.26 on account of deaths and \$67,870.65 on account of disablement by sickness and accident. The payments thus far are stated to have amounted in the aggregate to \$14,217,475.85, \$5,843,839.64 on account of deaths and \$8,373,636.21 on account of disablement.

Philadelphia.

South Branch Society Election.—Dr. Joseph O'Malley was elected president of the South Branch of the Philadelphia County Medical Society, and Dr. James H. Baldwin was re-elected secretary, at the regular meeting, December 29.

Natural Science Officers.—At the annual meeting of the Academy of Natural Sciences, December 19, Dr. Samuel G. Dixon was elected president; Dr. Edward J. Nolan, recording secretary and librarian; Dr. Charles B. Penrose, counselor for three years, and Dr. Horatio C. Wood, counselor to fill unexpired term.

Personal.—Dr. James Tyson was a guest of honor at a reunion of the District of Columbia Alumni Association of the University of Pennsylvania, held in Washington, December 12. —Dr. George L. Hinsband fell from a trolley car December 28 and received a severe injury to his head. He was taken to the Presbyterian Hospital.

College of Physicians Library.—The library of the College of Physicians in this city, one of the greatest medical libraries in the world, contains 73,750 volumes, 8,363 unbound reports and transactions, 19,540 theses and dissertations, and 56,265 unbound pamphlets. The library receives 611 current medical, pharmaceutical and dental journals, including American, English, French, German, Italian, Spanish, Russian and Chinese. The library is open daily to visitors, excepting Sunday and legal holidays, from 10 a. m. to 6 p. m.

Free Exhibition of Tuberculosis.—How to fight consumption will be the principal thought of the free exhibition of tuberculosis, to be held in this city from January 22 to February 3, under the auspices of the National Association for the Study and Prevention of Tuberculosis and the Pennsylvania Society for the Prevention of Tuberculosis. Model tents and fresh-air sanitariums will be on exhibition. Every effort will be made to show the general public how fresh-air treatment may be applied with good results in their city homes. Public lectures will be delivered daily.

Symposium on Exophthalmic Goiter.—A special program has been arranged for the Section on General Medicine of the College of Physicians on January 8. A symposium on exophthalmic goiter will be held, at which Dr. George Dock of Ann Arbor, Mich., will read a paper on "The Clinical Observations on Exophthalmic Goiter (Graves' Disease), with Special Reference to Complete and Incomplete Forms; the Clinical Course and the Treatment"; Dr. James Tyson will discuss the medical treatment, Dr. W. G. McCallum the pathogenesis, and Dr. Joseph C. Bloodgood, of Baltimore, the surgical treatment.

Health Report.—The total number of deaths reported for the week aggregated 491, as compared with 524 reported for last week, and 497 for the corresponding week of last year. There were 136 new cases of typhoid fever reported, which is an increase of 17 over the number reported last week. The principal causes of death were: Typhoid fever, 14; measles, 3; diphtheria, 8; tuberculosis, 61; cancer, 16; apoplexy, 19; heart disease, 49; acute respiratory disease, 73; enteritis, 21; appendicitis, 3; Bright's disease, 43; suicide, 8; accidents, 20, and marasmus, 10. There were 262 cases of contagious disease reported, with 22 deaths, as compared with 274 cases and 29 deaths in the previous week.

VERMONT.

University News.—Dr. John M. Wheeler, Burlington, has been appointed instructor in anatomy in the medical department.—Obstetrics and surgery have been transferred from the second to the third year, and a new compulsory course in experimental physiology has been instituted.

Many Illegal Practitioners.—About 150 physicians in the state are technically illegal practitioners as they have failed to comply with the act of the legislature passed in 1904, which required that all physicians file their licenses with their respective county clerks prior to Jan. 1, 1905.

The Proctor Tubercular Sanitarium.—Senator Proctor is in accord with the modern efforts to stamp out tuberculosis. As previously announced, he has, at the request of his children, donated \$50,000 to purchase ground and erect a sanitarium for the treatment of incipient tuberculosis near Proctor. It is to be a state institution, but free of expense to the state, and to this end he has further made an endowment of \$100,000 for its maintenance. The company of which Senator Proctor is president maintains a large free hospital and training school and an emergency service near their quarries at Proctor. The hospital will be located in Pittsford, according to the decision of the state tuberculosis commission.

VIRGINIA.

A Mother at Ten.—A very unusual occurrence has just come to light at Bristol. Sallie Ellison, a colored girl, who was 10 years old last October, has given birth to an eight-pound infant.

Radford Hospital.—La Belle Inn, formerly built as a hotel at Radford, has been leased for a hospital and will be at once put in perfect repair. The hospital is to be operated by McArthur Brothers of New York, the contractors who hold the contract to build 125 miles of the Tidewater Railroad through that section. The institution will not be limited to the employés of the road, but one floor will be turned over to the physicians of the locality.

GENERAL.

Yellow Fever in Cuba.—A few new cases of yellow fever are still being reported. In nearly all cases the infection can be traced to Habana. The immunity requirement has been removed for passengers for southern ports, including Florida. All non-immune individuals, however, are carefully inspected before being allowed to embark.

American Dermatological Association.—At the twenty-ninth annual meeting of the American Dermatological Association, held in New York City, Dec. 28-30, 1905, the following officers were elected for the ensuing year: President, Dr. M. H. Hartzell, Philadelphia, Pa.; vice-president, Dr. Thomas C. Gilchrist, Baltimore, secretary and treasurer, Dr. Grover W. Wende, Buffalo, N. Y. The next meeting will be held in Cleveland, Ohio, in May, 1906.

The National Association for the Study and Prevention of Tuberculosis.—Announcement is made by the board of directors of the National Association for the Study and Prevention of Tuberculosis of the preliminary arrangements for the second annual meeting of the association, which will be held in Washington, May 17, 18 and 19, 1906. Two new sections have been established—one on surgical tuberculosis and the other on tuberculosis in children. The officers of the sections are as follows:

Sociological Section: Chairman, Mr. William H. Baldwin, Washington, D. C.; secretary, Miss Lillian Brandt, New York.

Clinical and Climatological Section: Chairman, Dr. Vincent Y. Bowditch, Boston, Mass.; secretary, Dr. Edwin A. Locke, Boston, Mass.

Pathological and Bacteriological Section: Chairman, Dr. Edward R. Baldwin, Saranac Lake, N. Y.; secretary, Dr. Hugh M. Kinghorn, Saranac Lake, N. Y.

Section on Surgical Tuberculosis: Chairman, Dr. W. W. Keen, Philadelphia, Pa.; secretary, Dr. Robert G. Leconte, Philadelphia, Pa.

Section on Tuberculosis in Children: Chairman, Dr. W. P. Northrup, New York City; secretary, Dr. Roland G. Freeman, New York.

CANADA.

Personal.—Dr. Robert C. Hiseock, formerly of Kingston, Ontario, has been appointed government inspector of health at Lagos, West Africa.—Dr. Charles Sheard, medical health officer of Toronto, has been investigating the smallpox outbreak in eastern Ontario, along with the secretary of the provincial board of health, Dr. Charles A. Hodgetts. Dr. Sheard considers that matters in connection with smallpox in eastern Ontario are in an unsatisfactory state.—Lieutenant-Colonel Curleton Jones, M.D., has resigned his position as assistant port officer at Halifax to become chief medical officer to the Canadian militia stationed at Halifax.

Hospital News.—The Winnipeg General Hospital has received a gift from the Ladies' Hospital Aid of that city of \$1,651.—The total number of patients treated in the Winnipeg General Hospital during the week ending December 9 was 380, of whom 233 were men, 88 women and 59 children. The number in the outpatient departments was 109.—The governors of Notre Dame Hospital, Montreal, held their annual meeting on December 12. The annual report showed a slight increase in the number of patients over the previous year. During the year 2,230 patients were treated, and each of these patients cost the hospital \$1.13 a day. Of the entire number treated 1,303 were men and 927 women. There were 165 deaths during the year, but of this number 53 patients were brought into the hospital in a dying condition. In the different outdoor departments of the institution there were 20,991 consultations.

Ontario Smallpox Law.—Dr. Hodgetts, secretary of the Ontario board of health, in view of the prevalence of smallpox in various sections of Ontario, has deemed it necessary to call the attention of the people to the law in connection therewith. This law requires that all children shall be presented for vaccination within three months after birth to an officer appointed

by the municipality, to a medical practitioner, or to the hospital authorities. The law also requires that the child shall be returned for verification on the eighth day. Dr. Hodgetts also calls the attention of the trustees of the various hospitals throughout the province to the fact that not in one single instance are they obeying the law, which requires that they shall keep a supply of vaccine, be prepared to vaccinate the poor free of charge, and all others at a maximum fee of 50 cents. The Ontario law also requires that no pupil shall attend school without first presenting a certificate showing successful vaccination.

College and University News.—The reading rooms in connection with the medical department of Toronto University are in a more satisfactory condition this term than ever before. This is due to the activity of the present student executive committee. All daily papers, leading magazines and medical journals are on file.—The building of the College of Physicians and Surgeons of Ontario in Toronto has been sold for \$100,000. The money thus obtained will be devoted to the purposes of a new building, properly equipped and for the purposes of the college alone.—The medical department of Queen's University, Kingston, Ont., will seek a grant of \$75,000 from the Ontario government for the purposes of a new medical building in connection with that university, and at the same time will ask for an annual grant of \$7,500 to sustain it.—A petition signed by over 1,200 medical students of Canada has been presented to Dr. Pyne, minister of education in Ontario, asking that the government introduce at the coming session of that body the necessary legislation to ratify the Canada medical act of 1902, which is familiarly known as the Roddick bill. All the provinces of Canada have passed this legislation with the exception of Ontario, Quebec and British Columbia. Quebec refused it.

FOREIGN.

Honors for Gutierrez.—Professor Gutierrez, the prominent gynecologist of Madrid, was recently decorated with the grand cross of the Order of Alphonso XII. His friends tendered him a banquet on the occasion.

Borax in Milk.—The county medical officer and the analyst of Middlesex County are soon to submit a report to the Middlesex County Council recommending the total prohibition of the use of boracic acid, coloring matter, or preservatives in any form, in milk, the use of such to be made an offense under the food and drugs act.

Children Excluded from Laundries in France.—A recent decree in France excludes children under 18 from workrooms in which soiled linen is being handled without previous disinfection. This step has been taken on account of the danger of infection from the dust shaken out of the dry soiled clothes while they are being sorted.

Bubonic Plague at Spain.—The steamer *Oropessa*, from South American ports, arrived at Corunna, Spain, December 17. Passengers were not permitted to land owing to the fact that there were 3 cases of bubonic plague on board. The port authorities did not permit the cargo to be unloaded. The steamer sailed for La Pallice, France.

Cremation in Tasmania.—The Tasmanian legislature has passed a bill making it unlawful to cremate unidentified bodies or to practice cremation in cases in which the attorney-general, coroner or police magistrate forbids it. To cremate any body the consent of the chief secretary must be obtained, and the cremation must be done in an approved place.

New Hospital Buildings.—The new buildings of University College Hospital, London, have been completed. Eighty-six additional beds are now available for use. The cost of the rebuilding was defrayed by the late Sir J. Blundell Maple, but the committee appeals for more annual subscriptions to meet the increased expenditures due to the larger number of beds now in use.

Commercial Science and Tariff Reform.—A new museum and laboratories of zoology in connection with the University of Liverpool have been opened recently by Lord Onslow, who said that the blessing which Great Britain enjoyed in the cheapness of food was much more largely due to the inventions of science than to any fiscal relations which could possibly be established with other countries.

The Kussmaul Prize.—In 1903 Professor Czerny of Heidelberg endowed a prize in memory of Kussmaul, the well-known clinician, his father-in-law. The prize consists of a gold portrait medal and 1,000 marks (about \$250) in money. It is to be awarded every three years, as already mentioned in

these columns, for the best therapeutic achievement (*therapeutische Leistung*) first published in German literature.

Special Course in Hygiene.—The University of Lyons, France, has inaugurated a special course in hygiene entitling to a diploma. The final examinations in chemical, microscopic and bacteriologic technic as applied in hygiene will include practical tests supplemented by oral examination in public and school hygiene, in sanitary engineering and legislation and epidemiology. The *Semaine Médicale* states that medical students who have passed four examinations and duly qualified French and foreign physicians are eligible for the course.

Research on Sleeping Sickness.—About \$30,000 has been appropriated by the German government to defray the expenses of a scientific mission to Eastern Africa to study sleeping sickness. The party will include an expert protozoologist and a bacteriologist with a physician familiar with the conditions in Eastern Africa. The expedition will probably require 18 months for the research. Sleeping sickness is not prevalent yet in the German colony, so the party will probably locate in the adjoining Uganda district. The *Deutsche med. Wochs.* hints that Koch may head the expedition.

Gloomy Hospital Outlook in London.—In a recent issue, *Hospital* states that many London hospitals, in consequence of overbuilding and other forms of ill-considered expenditure, are extremely embarrassed financially. They are in the custom of continually exceeding their income, trusting to a "wind-fall" or to a special appeal to reduce the accumulated debt. As a result the general outlook is gloomy, and several institutions are contemplating closing some of their wards. The announcement has been made that in London there are 1,000 hospital beds empty owing to lack of funds.

International Congress of Alimentary Hygiene.—A society for scientific alimentation has been organized in France, and it has issued an appeal for an international congress to be held at Paris February 26 to March 6, 1906. It will be divided into the two sections of scientific researches and their practical application in daily life. The society proclaims that the masses do not obtain as much nourishment from their food at present as they should for the expense, and the congress is summoned to discuss the various aspects of the subject from different points of view, especially the sociologic and economic.

Imprisoned for Fraud.—A certain physician took a position with a Leipzig sickness insurance society when its medical officers had resigned in a body and the *Leipziger Verband* was warning others against accepting a position with the society. He was given \$1,500 by the organized physicians to withdraw after they had made a satisfactory agreement with the society. He took the money, but failed to state that he had already entered the service of a similar society in a nearby city in the same rôle. The Leipzig court condemned him to two months' imprisonment for obtaining money on false pretenses.

Success of Vaccination of Cattle Against Tuberculosis.—The *Presse Médicale* of December 6 reports the findings when the calves vaccinated according to von Behring's method a year ago at Melun, France, were slaughtered. Vallée had the experiments in charge, and used 40 calves, keeping half of the number for controls. Ten other calves in an infected stable were also vaccinated at the same time and none of these had contracted tuberculosis. The great contrast between the advanced, diffuse lesions of the controls and the circumscribed relics of the inoculation in the animals inoculated was most striking. The report confirms the results published in Germany.

The Cocain Habit in India.—It is reported that the cocain habit is spreading to an alarming extent among the natives of Upper India. The Mahometans in the Benares division recently sent a deputation to invoke the aid of the government in preventing the sale of cocain to young men and boys. An inordinate consumption of this drug has also been reported from Cawnpore, Lucknow and other parts of the United Provinces, and a bill to amend the excise act has been laid before the provincial legislative council, which, it is hoped, will diminish the number of victims of this pernicious habit. Eradication of the evil by legislation has been tried in Bombay, Bengal and Burma.

Action of Radium in Hydrophobia.—Tizzoni's interesting experimental research with radium in rabies and vaccination against the disease were mentioned in the last volume, page 1934. The Italian authorities are so impressed with the possible value of his work that funds have been appropriated to enable him to purchase the quantity of radium necessary to apply the radium treatment to man. He thinks that about

6,000,000 radioactive units will answer the purpose, judging from the effects on rabbits of 100,000 units. An interesting feature of his research is that the effectual therapeutic dosage can be estimated from the radioactive properties acquired by the part treated. The Roentgen rays do not influence rabies.

Prize for Calmette.—Professor Calmette of Lille, director of the Pasteur Institute there, and well known for his researches on antiserums for snakebites, has been awarded the Audiffred prize given by the Paris Académie des Sciences Morales et Politiques. This prize of 15,000 francs (\$3,000) is awarded to recompense devotion—"les plus beaux, les plus grands dévouements"—of any kind. It was through Calmette's efforts that the first antituberculosis dispensary was founded, and the one thus started has proved a model in every respect. Its work is supplemented by extensive oversight and assistance of the tuberculous at their homes. Another feature of the dispensary is the official sent to the factories and elsewhere to discover incipient cases of tuberculosis even before the subject himself realizes that he is infected.

Plague in Japan.—Passed Assistant Surgeon Moore reports from Yokohama that plague continues to spread in Osaka and Kobe. In the former city 18 probable cases, with 14 deaths, occurred during the period from October 27 to November 15. In Kobe for the period from November 8 to 15, 7 cases were reported. A plague-infected rat was discovered recently in Tokio. Thus the present plague situation in Japan justly gives rise to considerable apprehension, tempered, however, by the recollection of the success which has attended the efforts of the authorities in coping with previous outbreaks of this infection. It again may be noted, says Dr. Moore, that a large proportion of Japanese emigrants from Hawaii, even of those taking passage at Yokohama, pass through Kobe and Osaka en route. The situation seems to demand extraordinary precautions.

Results of Antityphoid Vaccination.—The first reports have been received from the German troops who were vaccinated against typhoid before leaving for their station in southwestern Africa, as described in *THE JOURNAL* at the time. Out of 424 cases of typhoid fever reported from the station, 100 of the men had taken the preventive vaccination. The protection conferred is thus not absolute, but the vaccinated cases were distinguished by the mildness of the disease, the absence of complications and the small mortality. The *Deutsche med. Wochsft.* for November 16 tabulates the details of the cases among the vaccinated and the unvaccinated for comparison, noting especially the preponderance of extremely light cases among those who had been vaccinated more than once. The total mortality was 4 per cent. of the 100 vaccinated men and 11.1 per cent. of the others.

The Medical Curriculum in Melbourne.—The following amendments in the medical curriculum at the University of Melbourne, which have been under discussion for some time, have been decided on: 1, The teaching of organic chemistry in the first year, to enable students to understand pathology; 2, the teaching of anatomy and physiology in the second year, as a groundwork for surgery later on—the work of the second year to be confined to anatomy and physiology; 3, the commencement of hospital and surgical work in the third year; 4, the lessening of the number of examinations by cutting out the examinations at the end of the second and fourth years, it having been found that the practice of holding the examinations in pathology at the end of the fourth year resulted in the neglect of medicine and surgery until the fifth year; 5, in future, students must attend hospitals for the study of all diseases, instead of two optional diseases, but this work may be done after examination if the student wishes.

Plight of the Medical School at Rome, Italy.—All medical visitors to Rome have been impressed with the imposing Policlinico, which has been fifteen years in building and has cost already more than four million dollars. It was designed by Baccelli and is regarded as a triumph of medico-educational architecture. The wards have been occupied by the sick for several months, but the educational equipment has been neglected, the government postponing from year to year the appropriation of the quarter of a million required to furnish and equip the lecture rooms, laboratories, etc. The Policlinico is located on the outskirts of the city, and the medical students receive part of their instruction there, and then have to go to the other great hospital on the opposite side of the city and elsewhere for the rest of the teaching, hours being thus wasted in transportation besides the considerable expense for car fare. The students have finally rebelled and gone on a strike, the situation being quite serious, according to a letter from Rome in the last *Lancet*, as the faculty are helpless in the matter.

Dismissal of Suit Against Two French Physicians.—The long litigation in which Drs. Séné and Chiché of Bordeaux have been entangled since 1899 has finally resulted in their honorable acquittal. Dr. Séné ordered the removal to the quarantine station of a pregnant woman who had arrived from an infected port and presented symptoms of yellow fever in an advanced stage. Dr. Chiché had charge of the case, but was unable to save the patient. Her father sued the two doctors for damages, alleging malpractice, neglect, etc. He demanded that the body be exhumed, when it was found that the seven-months' fetus had been expelled by postmortem gas formation. The newspapers made a sensational affair of this coffin birth, and for six years the two doctors have been summoned from court to court and subjected to endless annoyance simply because the first had done his duty in protecting the public health and because the second had been unable to save a moribund pregnant woman. Our French exchanges comment with considerable seriousness on this case and the possibilities confronting the custodians of the public health which it suggests.

Seventh International Congress of Working Men's Insurance.—For the first time in the history of these congresses the fraternities, lodges and other mutual benefit and governmental insurance societies took a prominent part in the proceedings of this large and animated congress. This is important in view of the statement by one of the speakers at the recent Tuberculosis Congress, that when such societies once wake up to the fact that it will be to their direct pecuniary benefit to stamp out tuberculosis among their policy-holders, that a great onward stride will have been taken in the extermination of the scourge. The mutual benefit societies are gaining ground in every country, and their membership is becoming enormous. Once enlisted on the side of preventive medicine, their influence would be far-reaching. The proper remuneration of the medical officers of these and similar insurance societies is one of the vital questions abroad. As at present conducted, it was said, the medical official is the only one who does not profit by the mutual benefit plan or governmental insurance. An editorial in *THE JOURNAL* for December 23 depicted the wide scope of insurance of work men and women against sickness, accident and old age as it has developed in recent years in Europe.

Fourth International Congress of Insurance Examiners.—This congress will be held at Berlin Sept. 11 to 15, 1906. The subjects announced for discussion are early signs of a tendency to tuberculosis; obesity in relation to life insurance; influence of syphilis on length of life, and the vaccination clause in insurance contracts; also the influence of accidents in case of internal disease; acute aggravation of insanity through accidents; influence of injuries on organic spinal disease and mental derangements, and the criterion of the aggravation of all functions (nervous diseases, neurosis) through accidents. Reports are being prepared on all these subjects in each country to be represented and the minutes of the proceedings will be sent to members in English, French and German. The meetings will be held in the parliament buildings. The membership fee is 16 marks (\$4). The organizing committee includes fifty-nine of the prominent physicians of Germany, and an urgent appeal is made to all examining physicians for insurance companies to take part in the congress either personally or by subscription alone, which will entitle the member to all the transactions, etc. Contributions for the congress may be in English, French or German, but not to exceed 8 to 16 printed pages. They should be accompanied by a summary not more than a page in length. Further details can be learned on application to the general secretary, Dr. A. Manes, Berlin W. 50, Spichernstrasse 22.

Smallpox and Yellow Fever in Brazil.—Consul Aymes reports that there is a great deal of yellow fever in Para and that the epidemic of yellow fever is assuming serious proportions. He states that every year during the last four months of the year—the dry season—there is a marked increase in the number of cases of both smallpox and yellow fever. This year the season is unusually dry and hot, and both diseases have assumed the character of an epidemic, and Mr. Aymes reports that it is becoming evident that the smallpox epidemic is extending to the neighboring towns and villages. His attention was first called to the severity of the nascent epidemic late in September. Smallpox patients are isolated in a special hospital, which is now accommodating twice the number it was built for. Temporary wings of rough lumber are being erected and a second hospital has been taken for the shelter of smallpox patients. As there is no system of registry of cases of contagious and infectious diseases, it is difficult to obtain exact statistics. There is also, he states, a large and increasing num-

ber of cases of typhoid fever in this city. The yellow fever and smallpox patients are not confined to the lower or even to the middle classes, but all alike suffer. Foreigners in particular are liable, and scarcely one in Para has escaped one or the other disease; the number of deaths among the foreign colony is large. The rains will not set in before the middle of December; when they do begin it is said that in both diseases the cases rapidly begin to diminish in numbers and intensity, particularly smallpox.

New Isolation Hospital at Rotherham, England.—The new Rotherham Isolation Hospital, the foundation stone of which was laid nearly two years ago, was opened formally December 7. The total expenditures, including land, building and furniture, were a little over \$95,000, and 33 beds for male patients and 33 beds for female patients have been provided. The buildings consist of an administrative and six other blocks, including the laundry, disinfecter, and discharge lodge, and the observation ward. Separate provision has been made for acute and mild cases of scarlet fever. This rapid conversion into practice of the very modern conception that the aggregation of severe and mild cases of scarlet fever is dangerous is a notable and specially creditable feature. The distribution of beds is of some interest: 18 beds are assigned to severe scarlet-fever cases, 16 to those of milder type, 14 each to diphtheria and typhoid, and 4 beds in two separate wards to observation cases. The buildings lie on elevated ground, about one and one-fourth miles from the center of the town, and have five and three-fourths acres of ground devoted to them; the different blocks are, therefore, well separated. All the wards face southeast, and each is provided with a glass-covered veranda for the use of convalescent patients; each block, moreover, forms a complete and independent unit by itself, being provided with its own kitchen, bathrooms and stores. The ventilation is natural fireplace ventilation, supplemented by outlet shafts in the ceilings, and grids under each bed. The scarlet-fever patients have an allowance of 2,106 cubic feet of air space, and 156 superficial feet floor space, while the diphtheria block is provided with a small operating theater.

To Collect Statistics of Syphilis and Alcoholism.—The Paris Académie de Médecine has been discussing the question of compulsory declaration by physicians whether alcoholism or syphilis was the direct or indirect cause of death. A number of speakers said that the defective statistics gathered by such means did more harm than good. The figures showing that only 145 deaths had occurred in Paris last year from alcoholism—as stated in the official statistics—were extremely misleading to laymen. A resolution was finally adopted by the academy to the effect that it would be desirable to add to the present death certificates the following lines on a detachable coupon:

| | | | | |
|--------------|----------------|-------------|-------------|-------------|
| Alcoholism | } is the cause | { principal | } of death. | |
| Tuberculosis | | | | { accessory |
| Syphilis | | | | |

The physician signing the certificate should underline the words that apply to the individual case. This resolution was supplemented by another from which much more is hoped, namely, that medical societies and associations of surgeons, obstetricians, alienists and others take up the matter and request those of their members willing to take a personal interest in the question to compile personal statistics, to be published ultimately by the organizations and filed for reference. Personal statistics collected by physicians at the head of hospitals and asylums, or others having a large experience, will prove a most valuable aid in the study of the prevalence and ravages of these modern scourges. Raymond's experience has been that alcohol was the principal etiologic factor in two-thirds of 2,000 various nervous or mental affections under his observation last year, and Fernet's percentage at the Beaujon was the same, both for men and for women.

A Congress to Discuss Measures to Restrict the Illegal Practice of Medicine.—The French for some time have been organizing an anti-quackery congress. It has been postponed from time to time, as has been mentioned in these columns, but the date is now definitely settled for April 30 to May 3, 1906, at Paris. The official title of the congress is "Congrès pour la Repression de l'Exercice Illégal de la Médecine." A number of prominent physicians and lawyers are collecting material for communications, twenty-five subjects having been appointed on the order of the day. These include: 1, Illegal practice by bone-setters and empirics dealing in magic; 2, by quacks, magnetizers and hypnotists; 3, by lay or clerical persons under pretext of charity; 4, by members of societies for aid of the sick or wounded; 5, by nurses or attendants on the sick. Massage is the sixth subject; what it is, its dangers, and what schools

of massage now are and what they should be. Mesnard of Paris will deliver the address on this subject. The seventh is the illegal practice of medicine by chiropodists, manicurists, hair-dressers and barbers. It will be presented by a physician and a pharmacist. Subject 8 is the practice of medicine by druggists. Then follow illegal practice by opticians, by medical electricians, by dentists, by midwives, by medical students, and by foreign physicians. The misleading effect of the title of doctor assumed by pharmacists, health officers and others will be discussed. Dr. Sentourens will present the subject of the co-operation of physicians in fake establishments or money-making schemes, "covering" as it is called abroad, sheltering the scheme or the quack under the medical diploma. The rôle of the press in regard to the illegal practice of medicine will be discussed by two lawyers, as also the subject of the pseudo-scientific articles written by unqualified persons on medico-pharmaceutical subjects for advertising purposes. Professor Folet of Lille will discuss the illegal and charlatanesque practice of medicine by advertising, and Dr. Lerédde of Paris will speak on the means of warning the public in regard to the dangers of the illegal practice of medicine. Bardet will discuss the psychology and the economic aspect of the causes leading to the illegal practice of medicine. Two prominent lawyers will discuss the French laws affecting the practice of medicine and their inadequacies in many points, with suggestions for improvement. The powers and action of various medical organizations will be discussed by Dr. Maxwell, a medicolegal expert. The creation of a central office for the campaign against irregulars of all kinds will be suggested and urged by Dr. Ch. Levasort, 2 Place des Vosges, Paris, who is the general secretary of the congress, to whom all communications should be sent. The membership fee for the congress is 20 francs (\$4). Communications for the congress in foreign languages must be accompanied by a summary in French. It is proposed to appoint a permanent committee at the close of the congress which will strive to have the various resolutions that may be passed by the congress carried into practical realization. Brouardel will preside at the congress, but Duchesne is chairman of the committee of organization.

Compilation of Cancer Statistics.—The best wording for collective inquiry circulars to be sent to physicians for cancer statistics is being earnestly discussed in Germany. The circular issued by the Berlin headquarters of the Prussian cancer research society is not accepted by the Wurtemberg committee. The points that should be brought out in the statistics, the latter committee states, are age, sex, standing of the family, race, nationality, occupation, social position, income, number of births, heredity, relation to other affections, constitution, contact with cancer subjects in the closest and widest sense, conditions of house and soil, geographical and chronological differences, city and country, localization, differentiation from other tumors and duration of the affection. The mortality figure must be the basis of the percentage. This figure is derived from the proportion of the dead to the corresponding living. This proportion is the only one of any value for statistical purposes. City and country should be listed under separate headings. The "age structure" (*Altersaufbau*) of the living should always be borne in mind, and any neglect of the living totalities and of the age structure is certain to entail error. The average age at death varies with the age structure of the living, and is totally unadapted for purposes of comparison. The mortality figure can be compared only with like figures. The living and the dead must be counted on the same plan. Clinical statistics are too apt to be a collection of "interesting cases" and to be restricted to certain classes of society. Collective inquiries are liable to result in a mere collection of such clinical statistics, owing to the lack of participation by all physicians. In such case they are merely a mass of casuistics, of no value for statistical purposes. Mammary cancer and uterine cancer should be classed separate from those of other localization. Sarcomata can not be effectually separated from carcinoma in the death certificates. Geographical distribution of cancer is not available for statistical purposes, as the various countries differ in their methods and in the exactitude of their vital statistics. Aliens should be classed apart. Comparison between small districts with different kinds of soil is a promising field, but it requires larger material, improved methods of vital statistics in the country and also a knowledge of the age and social structure of the living. Statistics in regard to cancer houses should mention the number, age structure and social condition of all the inhabitants. It is of little purpose to determine the occupation of those dying of cancer unless the occupations of the corresponding living are known. Con-

jugal cancer should be listed on the same plan as cancer generally, especially regarding the age of the surviving consort. In regard to heredity, uterine cancer should be classed separately. When it is not possible to base comparative statistics on the years when the patients were under observation, it is recommended to compare the heredity in regard to cancer of the subject's own family and that of the consort. It does not prove anything that the parents of a cancer subject reach a higher age, as they were, on an average, 30 years old when he was conceived, and have this advantage over him of these years. Life insurance statistics mention heredity and degeneration much more frequently than it is heard of among the poorer classes, whose generations succeed each other without much medical oversight. Another source of error in compiling statistics from the life insurance books is that the parents and other members of the family are usually living at the time the applicant is examined. The study of two successive generations is the ideal research in heredity. The relations between cancer and tuberculosis should be studied on the same principles as the heredity of cancer. The municipal and state statistics should be utilized, especially those relating to dwelling houses, occupation, etc. The Swiss methods of vital statistics are held up as a model for further improvement. Much work will have to be done in the way of educating official statisticians for classification of deaths and of the living by occupations, etc. The suggestion is made that a central bureau of information be organized to which physicians making a serious study of cancer can apply, and which will warn against compilations or articles based on defective or unreliable data. The co-operation of all national and local cancer research committees is desirable. Some can devote their energies to certain aspects of the question, while others can study other phases. The Bavarian committee has called for a report on the last day of 1905 in regard to every cancer patient who has died or been dismissed from treatment during the year and not reported to the committee in previous inquiries. Dr. Kolb, Konradstrasse 9, Munich, Germany, is the secretary of the Württemberg cancer research committee.

LONDON LETTER.

Milk Preservatives.

The question whether or not the use of preservatives in milk is illegal is proving a most difficult one in the law courts, as conflicting evidence is given by the physicians summoned on either side. Thus a dairy company was recently charged with selling milk containing 4.8 grains of boric acid to the pint. The local health officer said that boric acid in milk is injurious to health. On the other hand, Dr. R. Hutchison, the well-known authority on foods, stated that boric acid to the extent present is not injurious to health. The case was, therefore, dismissed. In another locality an exactly opposite decision was given. A dairy farmer was charged with selling milk containing only 1½ gr. per pint. Professor Kenwood and the local health officer stated that the use of boric acid in milk even in small quantities is injurious. A fine of \$8 and \$20 costs were imposed. The necessity for some action of the government to settle the question of the legality of milk preservatives, the use of which has greatly increased in recent years, is pressing. The county council of Middlesex has adopted resolutions asking that the local government board and the board of agriculture and fisheries decide that the use of any preservative or coloring matter or preservative of milk offered for sale be constituted an offense under the "Sale of Food and Drugs" act.

The Crusade Against Consumption.

It is felt that in the crusade against consumption success depends on the systematic action of every county, group of counties, or great centers of population, throughout the land. Systematic action is being put in force in ten counties and in four of the largest provincial towns. The metropolitan county of Middlesex, with a population of about a million and an annual death roll of over 1,400 persons from tuberculosis, has as yet made no organized effort for the cure and prevention of the disease. An appeal for funds to found an open-air sanatorium has been made. This is signed by many influential persons, including the bishop of London, the Roman Catholic archbishop of Westminster, the chief rabbi, and Sir William Broadbent. It is intended that the sanatorium shall be placed in or near the county; that sufficient land shall be attached to it to provide employment for convalescents, and for those patients capable of doing anything; that it shall accommodate both sexes, and that the buildings shall be of the simplest and least expensive character. The patients' sleeping accommodation will be detached from the administrative blocks and so constructed that the air can have free and direct access in all

states of the weather without exposing the occupants to draught or wind. It is thought that there ought not to be less than 100 beds, which would admit for treatment each year about 350 patients. The estimated cost of the land, building, furnishing, lighting, etc., is \$150,000.

Aniline Black Dyeing.

As aniline black dyeing has in many instances proved injurious to health a memorandum has been issued on the subject by Dr. Whitelegge, chief inspector of factories, containing provisions for the protection of the health of those engaged in the various processes of mixing, preparing, "ageing," chroming, washing off and drying involved in the preparation of aniline black. Toxic symptoms are due mainly to inhalation, but also to absorption through the skin and to decomposition of the salts when the material is allowed to dry on the clothes. A greyish or bluish coloration of the lips with a tendency to distension of the small veins and pallor of the face are produced. In those who have worked long with aniline gastric disturbances are common. Chronic acid is also used in the process of aniline black dyeing and may cause injurious effects—ulceration of the skin, frequently commencing after an abrasion. The roots of the nails, the creases over the knuckles and the skin between the fingers are the parts most usually attacked. This ulceration may penetrate to the bone and lead to loss of the nails and to deformity of the finger joints. The danger is greatest in those employed in handling the crystals and in boiling the solution; and among these individuals perforation of the nasal septum has been observed. In some persons a papular eruption is produced on the hands, especially round the knuckles, on the palm, in the fold between the thumb and first finger and about the wrists and forearms. Constant contact with the solution causes the papules to burst, leaving a chronic ulcerated condition. The following provisions are recommended by Dr. Whitelegge: 1. Exhaust ventilation by means of ducts and hoods in connection with a fan (a) over each preparing machine; (b) at the point where dust is produced in chroming; and (c) in the process of steaming. 2. A meal room for the use of the workers. Food must not be introduced, prepared or taken elsewhere. 3. Ample washing accommodation. 4. No person to be allowed to come into contact with bichromate who has any rash or ulcer the result of his work. 5. The person weighing out the bichromate crystals or lading out the prepared aniline liquor should be provided with and should wear rubber gloves.

Security of Tenure for Health Officers.

In the rural and smaller urban districts the health officers often are hampered in the performance of their duties by the fact that their appointment is not a permanent one, but has to be renewed at intervals varying from one to five years. If they recommend measures which prove unpopular, in consequence of expense, they endanger their reappointment. The health authorities in these districts are far from progressive and are often loath to carry out sanitary reforms, and this insecurity of tenure fosters their reluctance. It has long been thought that the remedy for this condition is the abolition of periodical re-election of health officers and making the sanction of the government necessary for their dismissal. A bill with this object was introduced into parliament during the last session by the British Medical Association. A deputation of members of the Association of the Incorporated Society of Medical Officers of Health and of the Sanitary Inspectors' Association has now waited on Mr. Gerald Balfour, the president of the local government board, in order to discuss with him the provisions of the bill which it is proposed to introduce next session in its present form, or with amendments. Mr. Balfour, while admitting that the tendency of the bill is in the right direction, said that there are objections to giving permanency of tenure to all health officers. The reform is certainly urgently required.

The Proposed Amalgamation of the London Medical Societies.

A special meeting of the Royal Medical and Chirurgical Society has been held to consider the report on the union of the medical societies (previously referred to in THE JOURNAL) as adopted at the general committee of representatives of the societies. The president, Sir R. Douglas Powell, dealt with the present position of the society and pointed out that one of its great cares was the library which had been most successfully built up during the 100 years of the society's existence. This valuable possession, therefore, should be most carefully safeguarded. A resolution in favor of the amalgamation scheme was carried. At the Clinical Society a similar resolution was adopted.

Pharmacology

The Testimonial.

The testimonial is often referred to as one of the factors that has brought about the decadence of therapeutics. In the past many testimonials to the virtues of proprietary remedies were given because the physician really believed that the drug would do just what he testified it would do. Others gave testimonials because their minds were preoccupied with sundry matters, while a persuasive representative of the "proprietor" induced them to sign a statement which they later regretfully realized was not strictly correct and which placed them in a false position. Still others signed testimonials out of pure charity. A bankrupt or health-broken physician whom they knew as a "good fellow" was endeavoring to make a living out of the manufacture or marketing of a seemingly harmless prescription under a new name. To help him they gave a testimonial, feeling that the good deed of brotherly kindness outweighed the indiscretion. Yet it often has happened that even this testimonial has in after years turned up in the possession of another at most embarrassing junctures and has been a very plague to the giver. Lastly, many physicians have given testimonials because they received a *quid pro quo*, either cash, a discount on some article of medical use, or for some other consideration. Putting it squarely, a certain proportion—not large, to be sure—of testimonials have been bought and paid for. This malign leavening of the great mass of testimonials constitutes a good reason for always refusing to give one to anything or to anybody. Only a rigid adhesion to this rule will enable one who is careful of his honor to avoid unpleasant consequences. To aid the needy widow of a reputable physician a well-known doctor some years ago gave her a testimonial regarding a certain spring water out of which she was endeavoring to make a living. A few years later the spring passed into other hands, the testimonial was found, and the new proprietors published it widely in the daily press. At a most inopportune moment this was made the basis of formal charges of unprofessional conduct by another medical man who knew nothing of the antecedent circumstances. The giving of testimonials, no matter what the circumstances, may expose the giver to unpleasant gossip among those of his fellows who are not his intimates. Sooner or later every testimonial is likely to find its way into print, and then a little circular or booklet it appears on the desk of every practicing physician in the land. Even now some men in good standing are being embarrassed by the wide circulation of a pamphlet containing their unwary commendations of a proprietary remedy. "It is highly reprehensible for physicians to give certificates attesting the efficacy of secret medicines, or other substances used therapeutically," is not by any means the least important sentence in the Principles of Ethics of the American Medical Association. The testimonial is unwise, unsafe, and the sooner it is "out of date" the better. Leave it to the "patent medicine" makers and their patrons, where it belongs.

Another Death from Kopp's Baby Friend.

IN THE JOURNAL, Nov. 25, 1905, page 1078, was published a report of a case of poisoning in a child from a "patent medicine" known as "Kopp's Baby Friend." At that time we had the preparation analyzed, and the analysis showed that it contains in 100 c.c., 0.0719 gm. morphin sulphate; approximately 1/3 of a grain in one fluid ounce. A death is now reported from Baltimore from the use of this preparation. The following verdict was rendered by the coroner:

BALTIMORE, December 18.
George William Franklin Lancaster (white), aged three months and fourteen days, died December 15, at 25 Frederick avenue extended, on account of a dose of Kopp's Baby's Friend, given by his mother, while suffering with indigestion. Inquest at the Southwestern Police Station, December 18, 1905. The Jury warns the public not to use "Kopp's Baby's Friend."

C. FRANK JONES, Coroner.

The state's attorney, Albert S. J. Owens, issued a statement to the public, which he closed as follows:

This case emphasizes the necessity of the refusal by the public to use any remedy not prescribed by a practicing physician, and at the same time the urgent need of a law prohibiting the sale of any patent or proprietary medicine containing any deadly drug unless the same is labeled "Poison."

The Danger of the Secret Nostrum.

It is interesting to examine the formula of "Ayer's Cherry Pectoral," which is now published by the makers. According to their statement each fluid ounce contains:

| | Grains. | | Grains. |
|-------------------------|---------|------------------------|---------|
| Wild cherry | 6 | Bloodroot | 2 |
| Grindelia robusta | 4 | Rio Ipecac | 2 |
| White pine | 4 | Citric acid | 2 |
| Senega | 4 | Heroin | 1/6 |
| Terpin hydrate | 4 | Alcohol (minims) | 60 |

with glycerol and syrup.

It will be noted that the principal part of the preparation is a "culling of simples," but two ingredients signify much more; they are substances of specific and marked physiologic action and of recent introduction. Ayer's Cherry Pectoral has been on sale for many years; its manufacture antedates that of terpin hydrate and heroin. It is obvious, therefore, that the composition of the remedy has been changed. In this case the change may be a beneficial one, but instances have been cited in which a particular drug has advanced in price and something cheaper has been substituted. This indicates the greatest danger of secret remedies; there being no control or publicity, there is no responsibility or guarantee of uniformity. Voltaire's dictum, "Whatever is secret must be doubtful," may be appropriately applied here. The question that will suggest itself is whether or not any other active drugs were used instead of terpin hydrate and heroin in the earlier manufacture of the preparation.—Dr. Henry Leffman, Philadelphia.

The South Carolina Journal Stands for Honest Pharmacy.

The following leading editorial appears in the *Journal of the South Carolina Medical Association*. It is self-explanatory, indicating the plain stand of that journal on the question of honesty in pharmacy:

In the September issue of *The Journal of the S. C. Med. Assoc.* appeared an endorsement of the *American Medical Journalist* which was equivalent to an attack on the policy of the American Medical Association in fighting the patent and proprietary medicine combination. The *American Medical Journalist*, which is evidently published by and in the interest of the manufacturers of proprietary medicines and nostrums, has taken full advantage of its opportunity, and has reprinted this endorsement and circulated it broadcast, making it appear that we have severed our allegiance to the righteous cause championed by the American Medical Association. It is a matter of deepest regret and mortification to the editor that the item referred to should have been allowed a space in the journal by the associate editor during the absence of the former on his summer vacation, and he wishes it clearly and distinctly understood that his policy of antagonism to nostrums and proprietary compounds has not been altered by a hair's breadth. *The Journal of the S. C. Med. Assoc.* will continue to aid in the great fight, and will always rejoice to give publicity to whatever may help to remove the scales from the eyes of the multitude of physicians who are blindly aiding and abetting the gigantic nostrum fraud which attempts to masquerade in the guise of honesty and truth. We are thoroughly in sympathy with the American Medical Association and will welcome every opportunity to render whatever assistance may be in our power.

The Editor and His Honesty.

"In a recent issue of one of the larger medical weeklies—a publication which expressed, through the correspondence of its owner and publisher, an exceeding thoughtfulness for the nostrum manufacturer and his delectable business of exploiting the physician and the patient—appeared an editorial dealing with the subject of those qualities which should be possessed by the ideal medical editor, and inferentially suggesting that very few such eminent editors are known to exist, which statement is probably correct. . . .

"The catalogue of virtues and qualifications of which the happy ideal medical editor should be possessed includes everything desirable except one—honesty. . . . Simple, homely honesty, we are beginning to be taught, is quite commonly ignored in high places. There exist throughout this country scores of medical journals edited by men whose lack of liter-

ary apprenticeship and editorial training is demonstrated on every page." He might well have added that their commercial instinct, their disregard for any ethical, professional or humanitarian consideration, and their absolutely cold-blooded greed, are demonstrated with equal clearness on almost every page.

"The ideal, or, if you will, the quite competent medical editor 'must recognize that his principal duty is the ignoring of self-interest in his reviews and criticisms,' etc. (italics ours). Exactly. But let him not ignore his self-interest so far as the advertising pages are concerned. Let him accept money from any unscrupulous person who may wish to exploit the medical profession and delude its members into using some worthless nostrum. Let him sit dignified in the editorial chair and ignore the fact that such things as advertising pages exist, and that they not infrequently do great harm to that profession which it is his to serve and guide. It is undignified to take cognizance of such mere business details as advertising pages when learned editorials are to be written and published. It is undignified to observe that the medical profession have been made fools of, for a generation or more, by unscrupulous 'manufacturers.'"

"It is dishonest for medical journals to advertise dishonest or fraudulent articles or such things as do an injury to the public and to the medical profession. This ideal editor would do none of these things. No, indeed! Not because he would ignore self-interest, but because he would have it cultivated to the very highest degree."—*California State Journal of Medicine*, November, 1905.

Resolutions Indorsing the Fight Against Nostrums.

At its December meeting, the Omaha-Douglas County Medical Society adopted resolutions commending THE JOURNAL for its educational campaign against nostrums, indorsing the work of *Collier's Weekly* and the *Ladies' Home Journal* in exposing nostrums and the pernicious methods of advertising them, and pledging the support of the members to these periodicals.

The Montgomery County (Pa.) Medical Society, at a meeting held December 13, passed resolutions expressing appreciation of the forceful and truthful presentation of the evils of the nostrum business by THE JOURNAL, *Collier's Weekly*, *Ladies' Home Journal*, *Form Journal*, and *Marine* (Ill.) *Telegram*, and declaring that the medical and lay press should put forth their best efforts to destroy this dangerous traffic.

Similar resolutions were passed by the Fairfield County (Ohio) Medical Society, by the Berks County (Pa.) Medical Society, and by the Newton County (Miss.) Medical Society.

CHICAGO, Dec. 22, 1905.

The Board of Trustees of the American Medical Association.

Gentlemen:—The Douglas Park Branch of the Chicago Medical Society has directed me to express its thanks to THE JOURNAL of the American Medical Association and to the Council on Pharmacy and Chemistry for the active part which THE JOURNAL is taking in the present exposé of proprietary nostrums. We also wish to assure you of our continued interest and support in this movement, and trust that it will be productive of practical results. JOSEPH L. ABT, Secretary.

At a recent meeting the Medical Society of the District of Columbia adopted resolutions condemning the advertisement and use of "patent medicines" and commending the *Ladies' Home Journal* and *Collier's Weekly* for the work they have done in exposing these preparations.

Against Antikamnia.

The Saratoga Springs Medical Society, at its meeting held November 17, adopted the following resolution:

Resolved, That we as a society discountenance absolutely the use of antikamnia and all similar preparations and use our influence against their use.

The Proprietary Association Wants Its Members to be Good.

The Proprietary Association is trying to stem the tide. At a meeting held on December 4 a resolution was adopted "advising its members not to use so much alcohol in their patent medicines," and another against the use of cocaine and narcotics. Here is one resolution that is worth quoting in full:

Resolved, That this association urges on its members the most careful scrutiny of the character of their advertising and of claims for the efficacy of their various prescriptions, avoiding all over-statements.

This sounds interesting. Fancy the exploiters of peruna, liqozone, Duffy's pure malt whiskey, etc., etc., etc., avoiding all over-statements in regard to the efficacy of their preparations!

THE STRENA VACUUM FRAUD.

Fraud Order Issued by Postoffice Against the Strenva Vacuum Treatment.

The following is a summary of the postoffice investigations and conclusions in a recent case, showing the kind of work being done by that department:

MEMORANDUM IN RE THE STRENA COMPANY AND W. OTTIGNON, ST. LOUIS, DETROIT AND BOSTON.

WASHINGTON, D. C., Dec. 16, 1905.

To the Postmaster General:

On June 15, 1905, these parties were duly cited to appear before this office and show cause why a fraud order should not be issued against them for the alleged conduct through the mails of a scheme or device to defraud. June 27 was set as the date for the hearing. At the time designated, and also at subsequent times, to-wit.: July 27, August 15 and September 5, the company has appeared before this office through its proprietor, W. Ottignon, and attorney, Mr. Clarkson, with Knight & Brothers of McGill Building, this city. At these various hearings the company has been heard at length in its behalf, and a careful consideration has been given all the matters presented by the company.

The business of this concern consists in the selling through the mails of a so-called "vacuum appliance" for the development and cure of diseases of the male sexual organs. Purchasers are secured through advertisements inserted in newspapers throughout the country and also by circular letters mailed to various persons. Orders are sent through the mails and remittances for the appliance sent in the same manner. I find, after considering carefully all of the evidence adduced in this case, that the pretenses and representations on which the device of this company is sold are false and fraudulent, and that the business of said company is a scheme or device for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises.

1. It is pretended that this appliance will cure conditions in men commonly known as night emissions and daily losses, varicocele, stricture, gleet, impotency or lost manhood, inflammation of the prostate gland, prematureness, nervousness and rheumatism. It is also represented that the appliance will restore full vigor to shrunken and undeveloped organs. (See booklet of company styled "Strenva Vacuum Treatment" and other advertising literature herewith.) I find that these representations are false and fraudulent, and that in truth the use of this instrument will not cure the conditions above indicated as represented.

This device was submitted by Inspector McAfee, who investigated this case, to the St. Louis Medical Society of Missouri, which referred the matter to its committee on public health and legislation, composed of Drs. George Hondu, John Young Brown and Henry J. Scherck. These doctors examined the instrument and the literature of the company setting forth the claims made for it, and reported to their society that, in their opinion, the device was a fraud, and that it was worthless for the medicinal treatment of the conditions for which it is advertised to be a cure. The statements of these physicians are in evidence in this case.

This device, with the advertising literature of the company, was also submitted by this department to the Treasury Department for reference to the surgeon general of the Public Health and Marine Hospital Service for his opinion as to the therapeutic value of the instrument in the treatment of the conditions for which it is sold. The surgeon general states that "the apparatus and method advertised by the Strenva Company are without efficacy for the purpose intended, and that the method is not free from danger." The statement of the surgeon general is in evidence in the case.

Similar instruments sold under similar representations by the Van Best Company of Denver were submitted by the inspector in charge of that division to S. D. Van Meter, M.D., chairman of the Colorado State Board of Public Health and Legislation; secretary-treasurer of the Colorado State Board of Medical Examiners, and president of the staff and visiting surgeon of the Mercy Hospital of Denver, for an opinion as to the value of such an instrument in the treating of such conditions. Dr. Van Meter gave it as his opinion that the device is wholly a fraud and wholly worthless so far as the curing of the conditions for which it is intended to be used is concerned. Dr. Van Meter's statement is in evidence in the Van Best case. Inspector-in-Charge McKee, in his report in the Van Best case, also states that in that case Dr. J. N. Hall and Dr. H. R. McGraw, both of whom, he states, are noted physicians and surgeons of Denver, expressed the same opinion as given by Dr. Van Meter.

The Strenva Company has been given the fullest opportunities to submit evidence that this instrument will cure the conditions for which it is represented to be a cure in the booklet and other advertising literature of the company. The company has totally failed to submit satisfactory evidence, either by statements of physicians or otherwise, that this appliance will cure these conditions as pretended. I am, therefore, thoroughly satisfied from this evidence and the failure of the company to produce evidence of a satisfactory nature showing that this instrument is of value for curing these conditions, that the device is a fraud and that the pretenses and representations made by the company to promote its sale through the mails are false and fraudulent, and so find.

2. It is represented that the use of this appliance is approved by the medical profession and is indorsed and recommended by eminent scientific authorities. (See pages 5, 6 and 7 of the booklet of the company.) I find that this representation is wholly false, and that the use of this appliance is not approved nor recommended by the medical profession for the cure of conditions for which it is intended to be used by this concern.

Particular attention is in this connection directed to the indorsement printed in the company's booklet on pages 6 and 7, purporting to be the indorsement of the *American Journal of Health* of this instrument. It appears by satisfactory proof and is admitted by the company to be true that this *American Journal of Health* is not a medical journal of good standing, and that it is simply a fraudulent publication, printed to sell paid advertisements to various medical concerns doing a mail order business, and to be then used by such concerns as an indorsement of a medical publication. Mr. Ottignon's only defense to this charge when it was presented to him was that he had merely copied that statement out of the booklet of some other concern that was selling a similar device in a similar manner through the mails and which business he had purchased. Even this defense shows the fraudulency of the indorsement for the reason that, while the indorsement pretends to be the indorsement of the instrument of the Strenva Company, it is, according to Mr. Ottignon, not in relation to such instrument, but in relation to the instrument of some other company. The effect of the use of this pretended indorsement of the *American Journal of Health* on the minds of the class of people in whose hands such literature falls and who are uninformed of medical journals of standing is decidedly misleading and deceptive, and is a deliberate fraud.

The company has also failed to submit any evidence to prove that its instrument is indorsed by the medical profession, although the fullest opportunity has been given it to present such evidence. The reports of the various doctors in evidence in this case, the findings of Inspector McAfee, who investigated it, the truth regarding the *American Journal of Health*, and the failure of the company to submit any evidence on this point satisfies me beyond doubt of the falsity of this representation, and I so find.

3. It is represented that this appliance is the *only* safe, sure and permanent cure for the development of weak and shrunken organs. (See page 8 of booklet.) I find that this representation is wholly false and without foundation in truth. As a matter of fact, this instrument is not only the *only* safe and permanent cure for such conditions, but in truth will not cure them at all. The defense made by the company to this charge was that it was simply such an exaggeration of a puffing nature as is employed in business. This representation is, however, one of fact, which is wholly false.

4. On pages 19 and 20 of the booklet are printed articles under the head "Prematureness a Great Cause of Unhappiness." These articles are probably obscene in their nature, and at least are decidedly objectionable. These articles pretend to depict a diseased and abnormal condition of the male sexual system to the end that the uninformed reader may be frightened into believing that his condition is abnormal and that he is in need of this company's instrument. As a matter of fact, the conditions represented are in no ways abnormal, and their presence is not recognized by the medical profession as diseased conditions, but are recognized as conditions which are present in many, if not the majority, of men of normal health. The purpose of the company in this respect is fraudulently to cause the uninformed reader to believe his normal condition is a diseased one, and in this way induce him to purchase one of the instruments sold by this concern. I therefore find that these representations are false and fraudulent and designed to deceive.

On page 21 of this booklet appears this statement: "We sell all kinds of thin tissue rubber goods at low prices." Inspector Larmour of the Chicago Division wrote test letters to the Detroit office of this concern with reference to those pretended

rubber goods, and, as a result of such test correspondence, obtained evidence showing that the rubber goods referred to are such articles intended for the prevention of conception, etc., as it is made a penal offense by section 3893 of the Revised Statutes to sell through the mails or to give information as to where the same may be obtained. The person in charge of the Detroit office was arrested by the inspector after the securing of such evidence and offered to plead guilty to the indictment, but surrounded the plea with so much mystery as to the knowledge and intent in the matter that the court would not receive the plea and ordered a plea of not guilty entered and the defendant's recognizance taken in the sum of \$500 for trial at the March term of the United States Court at Detroit. Mr. Ottignon stated that since the arrest of Mr. Belknap the paragraph on which he was arrested and indicted had been stricken out of the pamphlet. This fact is given as significant of the intent with which these parties have been using the mails and conducting this scheme.

This case was investigated at St. Louis by Postoffice Inspector R. W. McAfee. Mr. McAfee's report is in the case. Mr. McAfee reports that as the result of his investigation of this scheme he was satisfied that the business of the Strenva Company is fraudulent within the meaning of the postal laws.

I find, after giving this matter the most thorough consideration, and examining with care all the evidence submitted, and relying on the findings of the inspector who investigated this case and the statements of the Medical Society of St. Louis, the surgeon general of the United States, Dr. Van Meter and the other physicians in Denver, and the failure of the company to submit evidence in its behalf of the truth of its representations, that the pretenses and representations made to sell this device are false and fraudulent and that the business of the Strenva Company is a scheme devised for obtaining money through the mails on false and fraudulent pretenses, representations and promises. Not only is the device worthless for the purpose for which it is intended to be used, but its use is also attended with danger to the persons using it. I therefore concur in the recommendation of the inspector that a fraud order be issued against this company, its officers and agents as such, and W. Ottignon, at the company's offices from which the business is operated.

R. P. GOODWIN,
Assistant Attorney General for the Postoffice Department.
As a result of the above report, a fraud order was issued by Postmaster General Cortelyou Dec. 19, 1905.

Correspondence

The Detail Man and the Thoughtless Physician.

TOLEDO, OHIO, Dec. 28, 1905.

To the Editor:—Recently the representative of a wholesale drug house was in my office. The man is, I think, a truthful man. Two years ago he had with him a powder, which he said had been tested by competent physicians and had proved itself an almost unfailing cure for cancer.

About a year later he had with him some tablets which he said were a compound, of which the original powder was the base, and that extensive and scientific tests had proved the tablets to be a sure cure for tuberculosis. He showed a formula with each of these articles, but what they were made of, of course, does not matter. The matter for wonder is that a man with such a layout could make a living soliciting among physicians.

Knowing the man and believing him to be honest, I believe him when he says that he sells large orders of the powder and many thousands of the tablets. I believe him, too, when he says that his house has scores of testimonials from physicians substantiating the claims which his house authorizes him to make for their products.

The man knew nothing about the action of medicines, but from association with the physicians to whom he sold the articles, backed up by the faith which the testimonials on file in the home office gave him, he had come to look on the treatment of tuberculosis as merely the getting of a man outside of a specified number of those tablets every twenty-four hours. He had, in fact, supplied several people with samples, and he thought they were showing marked improvement.

It is very encouraging to note among the men who come around with samples that they do not seem so surprised as

formerly, when the samples are declined; the fact arguing, I think, that physicians generally are doing more thinking along the lines of physiologic action of medicines.

I have myself been a "crank of the crankiest" on the subject of the "proprietarys," and as I have criticised *THE JOURNAL* much, it seems only fair that I should add my mite to the great praise it is receiving for the work it is doing in making plain the distinction between intelligent treatment of disease and the handing out of ready-made treatments.

J. L. TRACY.

Governor Indorses Dr. Souchon.

NEW ORLEANS, Dec. 23, 1905.

To the Editor:—I enclose a copy of the letter written me by Governor Blanchard of Louisiana in connection with his acceptance of my resignation. The letter speaks for itself.

EDMOND SOUCHON, M.D.

NEW ORLEANS, Dec. 23, 1905.

Dr. Edmond Souchon, City.

My Dear Doctor:—Several weeks ago you tendered to me as governor of the state your resignation, both as president and member of the State Board of Health.

This action on your part, as also that of the other members of the state board was, I am sure, prompted by a desire on your part to avoid all difficulty in the way of a reorganization of the board, and thereby to remove certain embarrassments of the state administration that had grown up out of unfortunate conditions that had arisen.

In accepting your resignation permit me to assure you that I do not share in the belief that you or your board aided or assisted in the suppression and keeping from the public the knowledge of the fact that yellow fever existed in the city of New Orleans during the last summer.

Your long and successful service in the State Board of Health entitles you to the highest respect and consideration at the hands of the people of the state of Louisiana, and, on their behalf, as governor of the state, I tender you thanks, and wish you a prosperous future.

With high esteem, I remain, most sincerely yours,

NEWTON C. BLANCHARD.

Addition of Physicians to Morphin and Liquor.

READING, MASS., Dec. 26, 1905.

To the Editor:—In *THE JOURNAL*, Dec. 23, 1905, in the discussion of Dr. Pressey's paper, page 1944, a statement is made by Dr. Crothers so extreme that it seems to me worthy of some adverse comment in addition to that which it received from the members who criticised it on the spot. He says that from some studies which he made five years ago and which have since been fully confirmed, he is "convinced that at least from 15 to 20 per cent. of physicians in active practice are victims of morphia and spirit taking." And again: "A general study of the habits of physicians in four of the largest cities of the country showed that from 10 to 15 per cent. were drug and spirit takers. In one city a prominent daily paper made inquiries and concluded that at least 15 per cent. of all persons practicing medicine, including all members of all the schools, were spirit and drug takers. In other cities the percentage has been estimated as high as 20. In one city over 11 per cent. of all physicians were known or reputed to be using drugs."

I have no doubt it would be generally admitted that, for very obvious reasons, it is the brain-working classes, professional men and persons of the nervous temperament who are most likely to yield to the temptations of morphia and among them physicians, having in addition a greater knowledge of and familiarity with the drug, are probably most frequently addicted. It is easy to see how a drug which gives prompt relief from distress, the immediate effects of which are obvious to outside observers not as narcotism, but as full mental vigor, which enables a man to keep about his business for a long time undetected, should only too often be resorted to in some emergency by the practitioner to prevent his business from being neglected and broken up.

A physician of the highest moral character, deservedly distinguished among his brethren and beloved by his patients,

once told me that he used to remonstrate with a certain lady addicted to morphia and to alcohol on the folly of her course, and pointed out to her its dangers and wickedness, "and," said he, "the only way I could get strength to go to see her was to take it myself."

Few of us but have seen promising and successful men among our confrères prematurely lost to themselves and to the world from this drug, but notwithstanding my full share of such experience I have no doubt that Dr. Crothers' figures are very greatly exaggerated, certainly as regards morphia. If, however, we accept his additions of "spirits" and "drugs," the question becomes one of definition instead of statistics. It seems almost ludicrous, in these times of absurd statements from doubtless well meaning but unbalanced ultraists in the temperance reform, that any one should take seriously any estimate of what physicians in any city were "reputed" to be doing in the way of drugs. It depends entirely on where we draw the line, that is, on the personal views of the maker of the statistics, whether we shall find 2 or 10 or 20 per cent. of physicians who deserve to be put in the same class with morphia habitués. It is certainly doing the man who takes an occasional glass of wine or beer in a friendly way a great injustice to do so. There are probably much more than 20 per cent. of physicians who have not thought it necessary for their salvation to become total abstainers, who would be greatly surprised to hear themselves described as "victims" to spirit taking—and their friends would be quite as much so.

Although it is no doubt true that persons addicted to one drug not infrequently resort to some other, perhaps to help them out, as they vainly hope, yet the lumping together of all the persons who may use these two chief narcotics, so different not only in their mode of action, but in their noticeable effect on the character and behavior, a very small percentage perhaps so firmly bound to the one as to be almost irreclaimable without assistance and a great majority using the other as an indulgence, is wholly illogical and entirely destroys the value of even approximate statistics.

ROBERT T. EDES.

Fees for Life Insurance Examinations.

ASTORIA, ORE., Dec. 19, 1905.

To the Editor:—Referring to the short article in *THE JOURNAL*, December 16, page 1891, in relation to "Fees for Life Insurance Examinations," signed by J. Newton Hunsberger, permit me to say that the Clatsop County Medical Society, of Astoria, Clatsop County, Oregon, took action in this matter at its regular meeting, Oct. 5, 1905, in the adoption of the following resolution:

"Resolved, That, after this date, the fee for medical examination of applicants for Life Insurance, to be charged by members of the Clatsop County Medical Society shall be uniform, and in no case less than five dollars."

The companies affected by this resolution have been notified of the action and have replied in the tone stated by Dr. Hunsberger; but in this particular case they will find themselves "reckoning without their host," for every resident physician of Clatsop County is a member of the Clatsop County Medical Society, and it will hardly be practicable for the company to send an examiner with every solicitor wishing to do business here. Dr. Hunsberger is right in saying that medical societies should take the matter up, and I am sending this communication to you to point the way in which one society has already done so.

JAY TUTTLE.

Physician and the Pharmacopeia.

HILLSBORO, OHIO, Dec. 7, 1905.

To the Editor:—I am reading with pleasure and profit your special articles on the Physician and the Pharmacopeia. I think this a most excellent step in the right direction. Physicians need to be educated along therapeutic lines from the time they leave their colleges until they are dead. Therapeutics among the mass of general practitioners is the mainstay of medicine. There never was such a need as now. Every other department of medicine has made advances in the past ten or fifteen years. *THE JOURNAL* of the American Medical Association should be the leader and the court of last resort in matters of this kind.

J. C. LARKIN, M.D.

Miscellany

Care of the Insane in Brazil.—The October number of the *Revista Med.-Chir. do Brazil* is a special number, profusely illustrated, describing the institutions and methods of caring for the insane in Brazil. The text is in French and is from the pen of J. Chardinal, who quotes as his motto a saying of Prof. J. Moreira, the present director of the national insane asylum: "The civilization of a people is judged by the way it cares for its insane. The national asylum for the insane was founded at Rio de Janeiro in 1852. It is said to be a model institution, and had 1,591 inmates during 1904. Various diagrams are given to show the different forms of mental diseases observed, the causes of death, etc. A number of the states have special insane asylums, S. Paolo's dating from 1852.

The Effect of the X-Rays on the Blood.—E. Bibergeil, Berlin (*Wiener klin. Therap. Wchnft.*, No. 22), has sought to determine whether the action of the x-rays in reducing the number of the leucocytes is exercised directly on the blood elements or on the blood-forming organs. Following the method used by Rosin and himself, based on the fact that the quickness of the action of toxic coloring substances on the blood depends on the resistance of the blood cells, as well as the toxic power of the agent, he took two samples of blood from a healthy individual and submitted them both to the action of a concentrated watery solution of toluidin blue. One of these samples was submitted to the rays, the other not, but no difference as regards the quickness of the color reaction was observed. The same result followed the use of blood from a patient suffering from a blood disease, the rays appeared to have no influence whatever on the coloration or the blood cells. Hence, he considers the view of Heineke that the changes observed in the circulating blood are due, not to a lesion of the blood itself, but to one of the blood-forming organs.

The Eye Symptoms of General Paresis.—A. Joffroy (*Archives de Neurologie*, 1904), has examined the eye conditions in 227 paresies and found anomalies in 212. He considers this figure too small, as some of the cases were examined only once, and he thinks they are liable to appear later in the 15 in whom he failed to observe them. In 144 there was pupillary inequality, complete double mydriasis and extreme double myosis in 29 cases. Very frequently the pupillary orifice does not retain its normal form. In the last 125 examined this was observed 93 times in both pupils and 8 times in only one. He thinks this is, to some extent, a precursor or equivalent of Argyll-Robertson pupil. Of the two reflexes, luminous and accommodative, the former is by far most frequently affected. Its loss with the persistence of the accommodation constitutes the well-known Argyll-Robertson sign. The luminous reflex was found impaired or abolished 171 times in the 227 cases. It was lost on both sides in 103, lost on one side and weakened on the other 14 times, weakened on both sides 35 times, lost on one side and normal on the other 9 times, weakened on one side and normal on the other 10 times. The progressive weakness of this luminous reflex is generally the rule, and the Argyll-Robertson pupil once established is generally permanent, except perhaps during remissions. The accommodation reflex was found impaired or lost only 56 times. It was lost on both sides in 17, weakened on both sides in 13, lost on one side and weakened on the other in 5, lost on one side and normal in the other in 8. In only 2 cases did he find it impaired with normal luminous reflex, and it often remains normal even at a late stage of the disease. The external muscles of the eyes were affected in 38 cases. In 12 there was a simple ptosis, in 14 there were paralyses or pareses of the other muscles innervated by the third pair of nerves. In 5 there was paralysis of the fourth pair, nystagmus in 5, and in 2 spasmodic contraction of the orbicularis. In only 27 of the 227 were alterations of the fundus observed, papillary atrophy in 22, chorioretinitis (specific) in 2, old iridochoroiditis in 1, and traces of old optic neuritis in 2. The optic symptoms in paresis he considers of themselves insufficient for diagnosis. His figures are decidedly in contrast as regards fundus conditions with those reported by M. M. Kereval and Dangean (61 per cent. of cases) in the *Archives de Neurologie* in March, 1904.

Marriages

L. L. FLOYD, M.D., to Miss Rosie F. Norman, at Baltimore, December 19.

J. T. MCINTYRE, M.D., to Miss Magilee Pile, at Bristol, Va., December 20.

WILLIAM N. SENN, M.D., to Miss Marjorie L. Lynch, both of Chicago, January 3.

EDWARD B. CLAXTON, M.D., to Miss Irene Robertson, at Nanticoke, Md., December 27.

WILLIAM R. ROGERS, M.D., to Miss Natalie Haynes, both of Bristol, Va., December 20.

JESSE L. COONTZ, M.D., to Miss Hattie Alice Still, both of Woodland, Iowa, December 24.

FREDERICK W. FOCHTMAN, M.D., to Miss Leonora Ellen May, at Cumberland, Md., December 27.

H. COLLES GRANT, M.D., Round Hill, Va., to Miss Elinor C. Rowe, at Richmond, Va., December 15.

GUY HARRISON MCFALL, M.D., Detroit, Mich., to Miss Linnie Belle Tucker of Louisville, Ky., January 3.

FLETCHER J. WRIGHT, M.D., Fork Union, Va., to Miss Clara Edna Smith, at Ridgely, Md., December 27.

EDWARD W. ROWE, M.D., Wood River, Neb., to Miss Sarah Belle Harper of Randolph, Neb., December 14.

B. CURTIS MILLER, M.D., Cumberland, Md., to Mrs. Cornelia G. Finley, at Washington, D. C., December 23.

GEORGE INGLIS MCLEOD, M.D., Ardmore, Pa., to Miss Margaret G. Twiggs of Augusta, Ga., December 27.

E. GUY HOPKINS, M.D., Richmond, Va., to Miss Pauline Dudley Gary, at Fredericksburg, Va., December 27.

FRANZ CARL WALDECKER, M.D., Wichita, Kan., to Miss Dora Louisa Bergmann, at Rockville, Md., December 27.

THOMAS MONROE JONES, M.D., Anderson, Ind., to Miss Elizabeth Shields Baker, at Winchester, Va., December 27.

CHARLES WILBUR HOFFMAN, M.D., Henry, W. Va., to Miss Agnes Hamilton Boyd, at Lanaconing, Md., December 25.

Deaths

Charles C. Chittenden, D.D.S. Ohio College of Dental Surgery, 1866; a member of the American Medical Association; president of the Wisconsin State Board of Dental Examiners since its creation in 1885; president of the National Dental Association in 1904; sometime president of the Madison Odontological Society; a veteran of the Civil War; a practitioner of rare ability, died at his home in Madison, December 15, after an illness of several months, aged 63.

George I. McLeod, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia; formerly a resident of the Philadelphia Hospital and surgeon in the federal army during the Civil War, but since 1893 secretary of the state lunacy commission, and at one time a member of the State Board of Charity, died in the Bryn Mawr Hospital, December 18, from pneumonia, aged 68.

Ezra Herbert Wilson, M.D. College of Physicians and Surgeons in the City of New York, 1882; fellow of the Royal Microscopical Society of London; member of the Kings County Medical Society, Brooklyn Pathological Society and the Associated Physicians of Long Island, died at his home in Brooklyn, December 20, aged 48.

Oliver A. Blumenthal, M.D. Syracuse (N. Y.) University College of Medicine, 1893, of Syracuse; member of the National Society for the Prevention of Tuberculosis, Onondaga County Medical Society, and Syracuse Academy of Medicine, died from tuberculosis at Saranac Lake, N. Y., December 21, aged 35.

Edward Drew Phillips, M.D. Medical College of Virginia, Richmond, 1850; a Confederate veteran; for more than half a century a practitioner of Suffolk, Va., died at his home in that city from malignant disease of the throat, after a long illness, aged 74.

David Oldham Lewis, M.D., medical director U. S. Navy, fleet surgeon of the Pacific squadron, died at Honolulu, Hawaii, December 16 from cerebral hemorrhage, aged 54.

Norman B. Sherman, M.D. Albany (N. Y.) Medical College, 1861, died suddenly at his home in Marshall, Mich., from cerebral hemorrhage, aged 63.

John M. Rand, M.D. Dartmouth Medical School, Hanover, N. H., 1859; surgeon of the Twenty-fifth Army Corps in the Civil War; one of the founders and chief surgeons of the Women's and Children's Hospital, Newark, N. J., died at his home in that city, December 19, aged 72.

John H. Sanborn, M.D. Dartmouth Medical School, Hanover, N. H., 1857; surgeon of the Twelfth New Hampshire Volunteer Infantry during the Civil War, died at his home in Franklin Falls, N. H., December 18, from cerebral hemorrhage, after an illness of one month, aged 75.

John Jabez Caldwell, M.D. New York Medical College, New York City, 1859; assistant surgeon during the Civil War; some-time health officer of Brooklyn, and of Baltimore; member of many scientific societies, died at his home in Summit, N. J., December 18, aged 69.

Walter W. Naylor, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1889, a member of the Philadelphia Medical Emergency Corps and police surgeon in the second police district, died at his home in Philadelphia, December 16.

Charles Eppes, M.D. Vanderbilt University Medical Department, Nashville, Tenn., 1882, died December 26, after a year's illness with chronic nephritis, at Tazewell, Tenn., aged 51.

John R. Crapo, M.D. Medical College of Ohio, Cincinnati, 1877, a member of the American Medical Association, died at his home in Terre Haute, Ind., December 19, aged 55.

William C. Armstrong, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1880, died at his home in Wayne, Pa., December 20.

Queries and Minor Notes

HAS TETANUS FOLLOWED QUININ OR MORPHIN HYPODERMICS?

Dr. H. D. PHELAN, San Francisco, calls the attention of Dr. McCampbell (whose inquiry on the above subject appeared in THE JOURNAL, Dec. 9, 1905, page 1817) to the report of investigations by Dr. G. Vincent, in the *Annales de l'Institut Pasteur*. An abstract of this appeared in THE JOURNAL, May 20, 1905, page 1646. Tetanus has been frequently reported following hypodermic injections of quinin, while it seems never to have been reported following the injection of either cocaine, caffeine, ergotin or ether. Dr. Phelan referred to this in the *California Medical Bulletin* and remarked that in spite of thousands of injections of quinin for malaria in the military hospitals, cases of tetanus do not seem to have been reported from the use of quinin hypodermics.

FORMULARIES.

NORWICH, CONN., —, 1905.

To the Editor:—Can you recommend a good formulary—one containing only good prescriptions, rather than a conglomeration of all kinds?

CHARLES F. WHITNEY, M.D.

ANSWER.—Pocket formulary of Dr. J. Quin Thornton, published by Lea Brothers & Co., Philadelphia, price \$1.50 net; Saunders Pocket Formulary published by W. B. Saunders & Co., Philadelphia, price \$2.00 net; National Formulary, published by American Pharmaceutical Association, price \$1.00. There are many books of formulary on the market, but the above will be found as satisfactory as any.

State Boards of Registration

COMING EXAMINATIONS.

ARKANSAS MEDICAL Board, Little Rock, January 9. Secretary, J. P. Runyan, Little Rock.

NEW HAMPSHIRE State Board of Medical Examiners, State House, Concord, January 9-10. Secretary, H. C. Morrison, Concord.

VERMONT State Board of Medical Registration, Burlington, January 9-11. Secretary, W. S. W. Underhill.

WISCONSIN Board of Medical Examiners, Pfister Hotel, Milwaukee, January 9-11. Secretary J. V. Stevens, Jefferson.

SOUTH DAKOTA Board of Medical Examiners, Sioux Falls, January 10-11. Secretary, H. E. McNutt, Aberdeen.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, January 11. Secretary, W. C. Woodward, Washington.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, January 18-20. Secretary, J. A. Egan, Springfield.

ALBANY State Boards of Medical Examiners, January 30-February 2. Secretary, Charles F. Wheelock, Albany.

Connecticut November Report.—Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, November 14-15.

The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number examined was 29, of whom 22 passed and 7 failed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|--|--|------------|-----------|
| University of Vermont..... | (1898) | | 81.7 |
| Women's Med. Coll., Baltimore..... | (1888) | | 76.8 |
| Baltimore Med. Coll..... | (1900) | | 77.8 |
| Medical Coll. of Virginia..... | (1903) | | 75.1 |
| College of P. and S., New York..... | (1900) 83.1; (1901) | | 78 |
| University of Pennsylvania..... | (1903) 86.4; (1904) 84.1; (1905) 81.4. | | |
| Georgetown University..... | (1904) | 79.6, 80.2 | |
| Jefferson Med. Coll..... | (1889) | | 83.3 |
| Johns Hopkins Univ..... | (1904) | | 80.1 |
| McGill University..... | (1905) 75.3; (1904) 81, 84.2; (1905) 82.1, 83, 83.6, 83.8. | | |
| Harvard..... | (1901) | | 75.2 |
| Women's Medical College, Philadelphia..... | (1904) | | 82.3 |
| FAILED. | | | |
| Maryland Med. Coll..... | (1904) 69.2; (1905) | | 68.6 |
| Tufts Med. Coll..... | (1905) | | 70.2 |
| University of the South..... | (1905) | | 70.5 |
| Baltimore University..... | (1900) | | 62 |
| Georgetown University..... | (1904) 73.8; (1905) | | 64.3 |

District of Columbia October Report.—Dr. William C. Woodward, secretary of the Board of Medical Supervisors of the District of Columbia, reports the written examination held at Washington, D. C., October 1905. The number of subjects examined in was 17; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 25, of whom 18 passed and 7 failed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|---|---|------------|-----------|
| Albany Medical College..... | (1902) | | *81.9 |
| Baltimore Medical College..... | (1905) | | 86 |
| Medical Coll. of Virginia..... | (1900) | | 80.9 |
| George Washington Univ..... | (1905) 74.4, 81.3, 82.8. | | |
| Howard University..... | (1904) | | 82.8 |
| University of Pennsylvania..... | (1904) | | 90.9 |
| Georgetown University..... | (1904) 81.4, 84.5; (1905) 82.1, 82.3, 80.2. | | |
| Johns Hopkins University..... | (1901) | | 84.7 |
| Columbian University..... | (1904) | 81.9, 80.7 | |
| University of Virginia..... | (1902) 82.7; (1904) | | 79.6 |
| Hahnemann Med. Coll., Philadelphia..... | (1901) | | 80.5 |

| FAILED. | | | |
|-----------------------------------|--------------------|--|------|
| Howard University..... | (1905) | | 74.5 |
| George Washington University..... | (1905) 54.4, 68.9. | | |
| University of Michigan..... | (1887) | | 72.1 |
| Southern Homeo. Med. Coll..... | (1904) | | 71.0 |
| New York Homeo. Med. Coll..... | (1886) | | 69.5 |
| West Pennsylvania Med. Coll..... | (1892) | | 54.1 |

* This candidate passed the July, 1904, examination, but license was not issued until November, 1905.

Indiana October Report.—Dr. W. T. Gott, secretary of the Indiana Board of Medical Registration and Examination, reports the written examination held at Indianapolis, Oct. 3-5, 1905. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 750 points out of possible 1,000. The number of candidates examined was 108, including 13 osteopaths. Of this number 92 passed and 16 failed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|---|---|------------|-----------|
| Northwestern University..... | (1905) 88.4, 80.2, 80.8, 91.2. | | |
| University of Kentucky..... | (1900) 79.1, 83.4, 85.2, 87.1, 89.1, 92.7. | | |
| Eclectic Med. Inst., Cincinnati..... | (1905) 82.9, 84.6, 87.2, 80.9. | | |
| Rush Med. Coll..... | (1892) 90.9; (1903) 90.1; (1904) 86.4; (1905) 86.4, 87.8, 90.3, 82.3. | | |
| Detroit College of Medicine..... | (1905) | | 79.7 |
| Barnes Med. Coll..... | (1903) | | 83.7 |
| Miami Med. Coll..... | (1904) 84.8; (1905) | | 82.4 |
| Illinois Med. Coll..... | (1900) 87.8, 88.9, 90. | | |
| University of Louisville..... | (1898) 88.1; (1905) | | 83 |
| Hospital College of Medicine..... | (1905) | 80.8, 82.2 | |
| College of P. and S., Chicago..... | (1905) 80.9, 82.9, 86.1, 89.8. | | |
| Tennessee Med. Coll..... | (1897) | | 79.4 |
| Baltimore Med. Coll..... | (1897) | | 83.4 |
| Physio-Medical College, Indianapolis..... | (1905) 85, 85.1, 86.3. | | |
| Keokuk Med. Coll..... | (1905) | | 83 |
| Med. Coll. of Indiana..... | (1901) 80.2, 84.7; (1905) 75.7, 76.7, 73, 79.9. | | |
| College of P. and S., New York..... | (1902) | | 92 |

| | | | |
|---|--------------------------|--------------------|--|
| American College of Med. and Surg..... | (1903) | 81.3, 84.3 | |
| University of Iowa..... | (1903) | 83.3 | |
| University of Michigan..... | (1903) | 83 | |
| Columbian University..... | (1903) | 90.5 | |
| College of P. and S., Keokuk..... | (1902) | 82 | |
| Eclectic Med. Coll. of Indiana..... | (1905) | 77.2 | |
| Kenyon School of Medicine..... | (1905) 75.3, 84.1, 86.5. | | |
| Central College of P. and S., Indianapolis..... | (1905) | 78.9, 84. | |
| National Med. Univ., Chicago..... | (1905) | 82.1 | |
| Starling Med. Coll..... | (1905) | 87.2 | |
| University of Michigan..... | (1905) | 93.8 | |
| Hahnemann Med. Coll. and Hosp., Chicago..... | (1904) | 80.6; (1905) 88.3. | |
| Louisville Med. Coll..... | (1905) | 79.9, 83.1 | |
| Jefferson Med. Coll..... | (1905) | 86.1 | |
| Ft. Wayne College of Med..... | (1905) | 88.9 | |
| Washington University..... | (1905) | 87.7 | |
| Med. Coll. State of South Carolina..... | (1905) | 81.2 | |

FAILED.

| | | |
|--|---------------------|------|
| Hahnemann Med. Coll. and Hospital, Chicago..... | (1905) | 73.9 |
| Med. Coll. of Indiana..... | (1904) 67.1; (1905) | 71.1 |
| Illinois Med. Coll..... | (1905) | 52.7 |
| Ft. Wayne Coll. of Medicine..... | (1905) | 66.6 |
| Southwestern Homoeo. Med. Coll., Louisville, (1903) 73.3; (1905) 68.8. | | |
| Marion-Sims Beaumont Med. Coll..... | (1905) | 72.5 |
| Cleveland Homoeo. Med. Coll..... | (1894) | 66.9 |

Kentucky October Report.—Dr. J. N. McCormack, secretary of the State Board of Health of Kentucky, reports the written examination held at Louisville, Oct. 25, 1905. The number of subjects examined in was 14; total number of questions asked, 120; percentage required to pass, 70, and not less than 60 in any one branch. The total number of candidates examined was 23, of whom 22 passed and 1 failed. The following colleges were represented:

PASSED.

| College. | Year Grad. | Per Cent. |
|---|-------------------|-----------|
| Med. Coll. of South Carolina..... | (1903) | 91 |
| University of Baltimore..... | (1905) | 80.2 |
| College of P. and S., Atlanta..... | (1905) | 89 |
| Hahnemann Med. Coll., Chicago..... | (1903) | 87.5 |
| Handerbilt University..... | (1890) 75; (1905) | 86 |
| St. Louis University..... | (1905) | 80 |
| Georgetown University..... | (1890) | 84 |
| Kentucky School of Medicine..... | (1897) 78; (1905) | 84 |
| Illinois Med. Coll..... | (1905) | 84 |
| Medical College of Ohio..... | (1905) | 77, 77 |
| Columbia University..... | (1904) | 79 |
| Central College of P. and S., Indianapolis..... | (1905) | 78.5 |
| Medical College of Ohio..... | (1905) | 78 |
| University of Tennessee..... | (1905) | *70, 77 |
| University of Louisville..... | (1905) | 76 |
| Eclectic Medical Institute, Cincinnati..... | (1905) | 73 |
| Memphis Hospital Med. Coll..... | (1903) | 70 |

FAILED.

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|-----------------------|--------|----|
| Barnes Med. Coll..... | (1905) | 67 |
|-----------------------|--------|----|

* Failed at April examination.

Massachusetts November Examination.—One hundred and eleven applicants took the examination of the Massachusetts Board of Registration in Medicine in November; of this number 57 passed and have received certificates of registration.

Michigan October Report.—Dr. B. D. Harrison, secretary of the Michigan State Board of Registration, reports the written examination held at Lansing, October 10-13, 1905. The number of subjects examined in was 19; total number of questions asked, 95; percentage required to pass, 75. The total number of candidates examined was 19, of whom 15 passed and 4 failed. The following colleges were represented:

PASSED

| College. | Year Grad. | Per Cent. |
|--|------------|------------|
| Laval University..... | (1903) | 76.3 |
| Kentucky School of Medicine..... | (1905) | 75.1 |
| Detroit College of Medicine..... | (1905) | 76.1, 83.4 |
| College of P. & S., Baltimore..... | (1905) | 83.2 |
| Woman's Medical College of Pennsylvania..... | (1905) | 82.4 |
| George Washington University..... | (1905) | 79.1 |
| Northwestern University..... | (1905) | 79.1 |
| Rush Medical College..... | (1905) | 78.7, 82.1 |
| College of P. & S., Chicago..... | (1903) | 76.7 |
| Jefferson Medical College, Philadelphia..... | (1904) | 80.6 |
| University of Bellevue Hospital Medical College..... | (1905) | 81 |
| Hahnemann Medical Coll. & Hosp., Chicago..... | (1905) | 80.5 |
| Georgetown University..... | (1903) | 88.8 |

FAILED.

| | | |
|---------------------------------------|--------|------|
| Miami Medical College..... | (1895) | 71.9 |
| Kentucky School of Medicine..... | (1905) | 71.3 |
| Mechy Medical College..... | (1905) | 62.4 |
| College of Med. & Surg., Detroit..... | (1899) | 74.6 |

North Dakota October Report.—Dr. H. M. Wheeler, secretary of the North Dakota State Medical Examining Board, reports the written examination held at Grand Forks, N. D., October, 1905. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 28, of whom 27 passed and 1 failed. The following colleges were represented:

PASSED

| College. | Year Grad. | Per Cent. |
|--|------------------------------|------------|
| Trinity University..... | (1896) 80, (1897) | 80 |
| Vienna..... | (1897) | 83 |
| Northwestern University..... | (1899) 77, (1905) | 86, 90 |
| McGill University..... | (1905) | 79, 80, 80 |
| Hamline University..... | (1903) 88, (1904) | 75 |
| University of Minnesota..... | (1897) 85, (1904) 84, (1905) | 82 |
| University of Chattanooga..... | (1893) 81, (1895) | 75, (1903) |
| American Coll. of Med. & Surg., Chicago..... | (1905) | 87 |
| Rush Medical College..... | (1902) 90, (1903) | 82, (1905) |
| Toronto University..... | (1905) | 80, 83 |
| Bennett Medical College, Chicago..... | (1897) | 78 |
| College of P. & S., Milwaukee..... | (1902) | 76 |

FAILED.

| | | |
|-----------------------------|--------|-----|
| Barnes Medical College..... | (1905) | ... |
|-----------------------------|--------|-----|

Texas October Report.—Dr. T. T. Jackson, secretary of the Board of Medical Examiners for the State of Texas, reports the written examination held at San Antonio, Texas, Oct. 17-19, 1905. The number of subjects examined in was 12; total

number of questions asked, 150; percentage required to pass, 75. The total number examined was 37; 23 passed and 14 failed. Two candidates applied for license to practice obstetrics; one passed the examination, the other failed. The following colleges were represented:

PASSED

| College. | Year Grad. | Per Cent. |
|---|---------------|------------|
| University of Texas, (1905) 81.3, 84, 86.7; (nongraduate), 82.4, 84.9 | | |
| McGill University..... | (1894) | 85.9 |
| University of Port Wayne..... | (nongraduate) | 85.9 |
| Washington University..... | (1904) | 82.5, 81.6 |
| Northwestern University..... | (1904) | 79.2 |
| University of Michigan..... | (1902) | 85 |
| College of P. & S., New York..... | (1904) | 78.6 |
| University of Pennsylvania..... | (1895) | 80.4 |
| University of Kentucky..... | (1905) | 75 |
| University of Louisville..... | (1905) | 75, 78 |
| University of Virginia..... | (1905) | 78.7 |
| Jefferson Medical College..... | (1905) | 91.1 |
| Hospital College of Medicine, Louisville..... | (1899) | 84.3 |
| Tulane University..... | (1905) | 81 |
| American Medical Missionary College, Chicago..... | (1901) | 80.4 |
| College not stated, one candidate..... | (1905) | 81.5 |

FAILED.

| | | |
|---|---------------------|----------------|
| Hospital Coll. of Med., Louisville..... | (1892) 56.2; (1904) | 69.9 |
| Louisville Medical College..... | (1905) | 72 |
| Tulane University..... | (1904) | 65.4 |
| Howard University, Washington, D. C..... | (1898) | 73.7 |
| Medical College of Ohio..... | (1896) | 72.1 |
| University of the South..... | (1905) | 66.3 |
| Illinois Medical College..... | (1903) | 55 |
| Chattanooga Medical College..... | (1905) | 63.1 |
| Herring Medical College..... | (1900) | 66.7 |
| College and year not stated, four candidates..... | | 72, 64, 48, 14 |

Utah October Report.—Dr. R. W. Fisher, secretary of the Utah State Board of Medical Examiners, reports the examination held at Salt Lake City, Oct. 2, 1905. The total number of candidates examined was 10, of whom 9 passed and 1 failed. The following colleges were represented:

PASSED.

| College. | Year Grad. | Per Cent. |
|---|------------|-----------|
| Northwestern University..... | (1905) | 75 |
| Hospital College of Medicine, Louisville..... | (1905) | 75 |
| College of P. and S., Baltimore..... | (1896) | 78 |
| University of Michigan..... | (1904) | 80 |
| St. Louis University..... | (1905) | 77, 80 |
| College of P. and S., Chicago..... | (1905) | 84 |
| Bennett Med. Coll..... | (1905) | 77 |
| Harvard University..... | (1898) | 77 |

FAILED.

| | |
|-------------------------|------------------|
| University of Iowa..... | Grade not given. |
|-------------------------|------------------|

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Dec. 30, 1905:

Dean, E. A., asst.-surgeon, granted three months' leave of absence.

Church, James R., asst.-surgeon, ordered to report to Washington, D. C., and report in person to the Secretary of War for temporary duty, and on completion thereof will return to Fort Robinson, Neb. Carroll, James, asst.-surgeon, left Washington, D. C., en route to New Orleans, La., to attend meeting of American Association for the Advancement of Science.

Tinquard, Joseph, contract surgeon, arrived at San Francisco from Philippines Division, and has been ordered to Fort Leavenworth, Kans., for duty.

Wolven, F. Homer, dental surgeon, left Fort McKinley, Me., on leave of absence for fifteen days.

Waddell, Ralph W., dental surgeon, arrived at Fort Mackenzie, Wyo., for duty.

Wing, Franklin P., dental surgeon, left Jefferson Barracks, Mo., and arrived at Fort Riley, Kans., for duty.

Ware, William H., dental surgeon, left Fort Logan, Colo., on leave of absence for two months.

Hallwood, James B., contract surgeon, relieved from duty at Fort Leavenworth, Kans., and ordered to Washington, D. C., for annulment of contract.

Kennedy, James S., contract surgeon, left Fort Omaha, Neb., on leave of absence for fourteen days.

Lowie, Thomas S., contract surgeon, reported at San Francisco, from leave of absence for transportation to the Philippines Division.

Leeper, John P., contract surgeon, left San Francisco, on leave of absence for two months from the Philippines Division.

Stuckey, Harrison W., contract surgeon, left Fort Snelling, Minn., for temporary duty at Fort Assiniboine, Mont.

Dickenson, Clarence P., contract surgeon, left Fort Logan, Colo., for temporary duty at Fort Wingate, N. Mex.

Adair, George P., contract surgeon, returned from Fort Jay, N. Y., to his proper station, Fort Wadsworth, N. Y.

Brooks, John D., contract surgeon, left Fort Meade, S. D., on leave of absence for thirty days.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending December 30, 1905:

McLanahan, R. K., asst.-surgeon, having been examined by a retiring board and found incapacitated for active service on account

of disability not the result of any incident of the service, is retired from active service on furlough pay from Dec. 19, 1905, under the provisions of Section 1454, Revised Statutes.

Dorsey, B. H., asst.-surgeon, ordered to Altoona, Pa., January 2, for duty with Recruiting Party No. 4.
Judd, H. W., acting asst.-surgeon, detached from duty with Naval Recruiting Party No. 4, ordered home and granted leave until expiration of appointment as acting assistant-surgeon.
Curtis, E. E., acting asst.-surgeon, appointed acting asst.-surgeon from December 21, 1905.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Dec. 27, 1905:

Grubbs, S. B., P. A. surgeon, granted seven days' leave of absence from Dec. 22, 1905, under Paragraph 191 of the Regulations.
Foster, M. H., P. A. surgeon, relieved from duty at San Diego, Cal., and temporary duty at Galveston, Texas, and directed to proceed to San Juan, P. R., assuming the duties of chief quarantine officer.

Francis, Edward, P. A. surgeon, granted leave of absence for one month from January 17.

Lloyd, B. J., asst.-surgeon, directed to proceed to Guayaquil, Ecuador, and relieve Acting Asst.-Surgeon Luis F. Cornejo-Gomez.
Castle, J. H., chief division of chemistry, hygienic laboratory, granted three days' leave of absence.

Gustetter, A., acting asst.-surgeon, excused without pay for a period of twenty-five days from December 21, 1905.

McKay, Malcolm, pharmacist, granted leave of absence from December 13 to 31, inclusive.

Walterus, Matthias, pharmacist, relieved from duty at Chicago, and directed to proceed to Memphis, Tenn., reporting to medical officer in command for duty and assignment to quarters.

Herty, F. J., pharmacist, granted seven days' leave of absence from December 18, 1905, under Paragraph 210 of the Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended December 29, 1905:

SMALLPOX—UNITED STATES.

California: Los Angeles, Dec. 9-16, 1 case; San Francisco, 1 case.
District of Columbia: Washington, Dec. 8-23, 15 cases, 1 death.
Florida: Jacksonville, Dec. 9-23, 6 cases.
Illinois: Galesburg, Dec. 16-23, 1 case.
Louisiana: New Orleans, Dec. 9-23, 13 cases.
Maryland: Baltimore, Dec. 16-23, 1 case.
Michigan: Grand Rapids, Dec. 16-23, 1 case.
Missouri: St. Louis, Dec. 16-23, 2 cases.
Ohio: Cincinnati, Nov. 3-Dec. 22, 22 cases.
Utah: Five counties, Nov. 1-30, 46 cases.
Wisconsin: Appleton, Dec. 9-16, 1 case; La Crosse, Dec. 16-23, 1 case.

SMALLPOX—INSTLAR.

Philippine Islands: Manila, Oct. 28-Nov. 4, 2 cases.

SMALLPOX—FOREIGN.

Brazil: Para, Nov. 1-17, 187 cases, 48 deaths; Rio de Janeiro, Nov. 19-26, 7 cases, 3 deaths.
Chile: Iquique, Nov. 11-26, 21 cases, 7 deaths.
India: Bombay, Nov. 21-28, 1 death; Calcutta, Nov. 11-18, 1 death; Madras, Dec. 18-24, 12 deaths.
Mexico: City of Mexico, Dec. 1-9, 1 case, 2 deaths.
Russia: Odessa, Nov. 18-Dec. 2, 28 cases, 5 deaths.
Spain: Barcelona, Dec. 1-10, 6 deaths.

YELLOW FEVER—UNITED STATES.

Texas: Galveston, Dec. 24, 1 case (imported from Habana).

YELLOW FEVER—FOREIGN.

Brazil: Para, Nov. 1-17, 39 cases, 9 deaths; Rio de Janeiro, Nov. 19-26, 2 cases, 2 deaths.
Cuba: Habana, Dec. 18-24, 8 cases, 3 deaths; Matanzas Province, Dec. 22, 1 case.
Ecuador: Guayaquil, Dec. 20, epidemic.
Honduras: Puerto Cortez, Nov. 27, 2 cases, 1 death; San Pedro, 6 cases.
Mexico: Coatzacoalcas, Dec. 3-9, 1 case, 1 death; Cordoba, Dec. 3-16, 3 cases, 3 deaths; Orizaba, Dec. 9-16, 1 case; Zenapa, Dec. 3-9, 1 case, 1 death.

CHOLERA—INSTLAR.

Philippines: Manila, Oct. 28-Nov. 11, 15 cases, 15 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Nov. 11-18, 14 deaths; Madras, Nov. 18-24, 3 deaths.
Russia: Vistula Province, Oct. 26-Nov. 22, 32 cases, 22 deaths.

PLAGUE.

Brazil: Rio de Janeiro, Nov. 19-26, 25 cases, 9 deaths.
China: Hongkong, Oct. 28-Nov. 4, 2 cases, 1 death.
India: Bombay, Nov. 21-28, 8 deaths; Calcutta, Nov. 11-18, 17 deaths; Karachi, Nov. 19-26, 6 cases, 5 deaths.

Medical Organization

WHAT CAN THE COUNTY SOCIETY DO?

In most of the counties of the United States there is now at least a skeleton organization, and, while in many instances the society is doing good work, there are yet others that languish for the want of knowing what to do and how to do it. Local needs vary too widely to enable any one series of pro-

grams to fit the wants of all, but from time to time in this column the attempt will be made to give practical replies to the above question.

Each local society is likely to devise some original and profitable method of work, which will be outlined herein in order that others may benefit. The endeavor will be made, too, to present the subjects for discussion and forms of meeting that will be of help to the commonwealth and to the whole profession, as well as to the society itself. The keynote of medical organization is coöperation. Brief outline reports of society accomplishments will be welcomed.

I. RELATIONS TO NEWSPAPERS.

At the present time, when the exposure of the patent-medicine traffic is uncovering the method by which newspapers have been forced to oppose public health legislation, the relation of the profession to the newspapers is a topic of prime importance to every county society. In our condemnation of the press for its alliance with the worst of public frauds we must not overlook the fact that the majority of newspapers were bunched innocently enough. They needed money, as does every other enterprise, and nothing at first aroused suspicion as to the fraudulent game in which they were led to a partnership. In North Dakota the newspapers, at great financial sacrifice, supported the well-organized profession in its successful campaign for a pure food and drug law. Dr. McCormack reports, from all along the route of his present tour, that a surprisingly large number of local newspapers are throwing off the proprietary association control and are openly and courageously supporting *Collier's*, the *Ladies' Home Journal*, etc., in their efforts to mitigate the terrible evils of the patent-medicine trade. As these papers do this at a very considerable financial cost, they deserve the hearty praise and support of the profession. One enthusiast suggests that in counties where the newspapers are small and struggling the physicians should carry ethical advertising cards in the papers to compensate the publishers for the loss of patent-medicine advertisements.

Every society should be on friendly terms with the newspaper editors in the county. Meetings should be held to which the editors are invited and at which the subjects for discussion should be patent medicines, physicians' advertising, epidemic diseases, sanitation, health officers, the prevention of disease, and topics of local health interest.

In addition to such meetings, each society should have a "Committee on Relations to the Press," whose duty it should be to keep in touch with the editors, explaining to them the profession's attitude on the various problems of mutual interest that arise. Preferably such a committee should in every possible instance include among its members the family physician of the editor. It should be made clear that these committees are not for the purpose of winning the press to the personal advantage of physicians, but purely for the good of the whole community. They should make it clear that they have no personal favors to ask of the press, but that their function is to see that the papers are enlightened on all the public relations of scientific medicine.

(To be continued.)

THE STATUS OF ORGANIZATION WORK IN CALIFORNIA.

By J. N. McCormack, M.D.

Chairman of the Committee on Organization of the American Medical Association.

BOWLING GREEN, KY.

While it is now very generally known that my work is entirely in the interest of county and state organizations and is done wholly at the expense of the American Medical Association, and although the profession everywhere has been more enthusiastic after my visits than the merits of what was done seemed to warrant, it is not so well known that I have had almost literally to beg my way into most states and that I am still kept out of others where the need for somebody to do something to arouse and help the profession is even more evident. Fortunately, I have been relieved of all embarrassment in the matter by the knowledge that the obstacles or objections are in no way personal to myself, to what I represent or to the association. Most frequently the trouble is that the

council and other state society officials labor under the delusion that their organizations are already so advanced that only the element of time is needed to make them complete. Often I am told that "You could use no argument and bring no influence to bear which we have not already exhausted, and we cannot think that the results would pay for the trouble to us and the expense to the association which would be involved." Back of all these expressed difficulties is the fact that these officials are busy practitioners who are so occupied with their own affairs that they cannot, or at least do not, give much serious thought to anything else which they can postpone or avoid. Being thus relieved of all personal embarrassment, and knowing from long experience what can be accomplished if the opportunity is given, I have just patiently, kindly and tactfully persisted in my efforts to secure the necessary co-operation and to get in, and have seldom failed to find that the work was most needed in those states where the need for it was least felt.

California is an excellent illustration of what has just been said. It was the first state to adopt the new plan of organization without advice or assistance from the outside. The increase in membership has been rapid, and societies exist in all but a few sparsely settled counties. Through its ably edited state journal it is leading in some of the best and most fruitful reform work which is being done in this country. Its secretary and editor, Dr. Jones, in a most altruistic and unselfish way, has given up every other interest and ambition in order to devote his entire time and talents to its work. It has a fair medical law and the standard of examinations is high. The fees for medical men are higher than in almost any other state. This is far more than has been accomplished in most states, more than has been done in my own state in several lines, and a pride in it all is natural and easy to understand. Still, from a careful study of their legislative history, of the dominion and insolence of the quack interests in the state and other unmistakable symptoms, I have become convinced that their attractive-looking organization was largely on the surface, and that the unusual prosperity of their profession was not only fortuitous and insecure, but was endangered by the same influences which have operated so disastrously for years in the eastern and middle states.

When I took up the matter with Dr. Jones he insisted that their organization was complete except in a few sparsely settled outlying counties, and no impression was made when it was urged that far more good could be done, and that there was the greatest need for work in San Francisco, Los Angeles, Sacramento and other centers of population than in the country districts, and that his plans could not be considered even well under way until these centers were thoroughly infected with the modern spirit of professional co-operation. When we met at Portland, after fruitless correspondence, I was not surprised to find that we had been discussing entirely different propositions. Earnest and able worker as he was, and is, he had believed that his profession was organized as soon as a large majority of them were enrolled in the membership, with a good attendance and an interesting program at the annual meetings of the state society, and a strong journal for intercommunication and instruction. When he realized that, important and necessary as these things are as links in the complete chain proposed under the new system, they are secondary to and almost entirely dependent for real effectiveness on the county societies, and that these, meeting weekly or oftener, should and can be made live local schools for working out all of the complex problems confronting a rapidly evolving profession, including postgraduate work, practical business methods, and for educating and leading public opinion along proper lines as to the reasons for and methods of securing and enforcing medical and health legislation, he was more anxious for the work to be undertaken than I had been, and at the end of the itinerary exacted a promise that I would return next year for at least six weeks' work of the same kind.

As first arranged the itinerary included Sacramento, Oakland, Santa Rosa, San Jose, Monterey, San Luis Obispo, Los Angeles and San Diego. Later Pasadena and Long Beach were added. Dr. Jones attended all of the appointments with me except those at Santa Rosa and San Luis Obispo, and it soon developed that he had made systematic arrangements to secure the fullest possible representation at all of the meetings. At Sacramento, the first meeting, as the attendance was pretty full, and as I had the privilege of meeting many of the members in advance, opportunity was given for a careful study of local conditions. The personnel was markedly high, especially on the social side, but their county society was of the old perfunctory kind and, although at the beautiful and historic capital of the state, where the need for a live interest in

public affairs and for concert of action was so great, they had never even grasped the idea of such an organization or of uniting and wielding the powerful influence of the profession in everything for the promotion of its own and public welfare. For instance, Governor Pardee, a physician, and a member of the county society since his removal to the capital, had been forced to veto an anti-vaccination bill during the last session of the General Assembly, which he believed could have been easily defeated with a little effort by the local profession. Other instances were related where prominent members had failed or declined to explain important measures to legislators who were patrons or personal friends. On the whole, I got the impression that this excellent profession, more than usually harmonious and prosperous, and located at a point of the greatest advantage and importance, was practically dead to everything not entirely personal.

My opportunities for framing an opinion were more limited as to San Francisco and Oakland—in many respects one profession. While their societies attempt little except the reading and discussion of papers and the old order of routine work, so far as could be learned, they were somewhat more progressive than the one at Sacramento. No systematic effort had been made to deal with quackery and other similar problems, and the society appeared to be drifting along in the direction of least possible resistance, although made up of a profession able to guide with a master hand if aroused to the importance of doing so. The society at Santa Rosa was new and enthusiastic, that at San Jose solid and conservative, with delightful personal and social relations. Although adjoining one of the great army posts, with every facility and incentive for clinics and scientific work, the society at Monterey was weak and dormant, and things were not materially different at San Luis Obispo.

We had more time again at Los Angeles and looked into local conditions carefully. Owing largely to the personal efforts of an active and capable president, Dr. Joseph M. King, this society had made a rapid growth during the past year in both membership and interest, and a successful warfare had been waged against a number of unlicensed quacks of the lower order. Their principal work, however, had been along the old routine lines, and no serious discussion ever had been had of the vast practical problems confronting the profession at every turn. They were fairly harmonious and very prosperous and had not been alarmed by the rapid gains being made by the old as well as the almost endless new forms of quackery. And Los Angeles is a veritable paradise for quacks. Chiropractics, neuropsychics, vitapaths, neuropaths, and others not classified, in addition to the common varieties with which we are all so familiar, were extensively and expensively exploited in open defiance of law and decency, all claiming, of course, not to be physicians. These combined interests appeared to have a controlling influence over the public press, and are likely to exercise a like power over the legislatures and courts within the next few years unless all the friends of scientific medicine can be united in an intelligent, systematic, comprehensive opposition. Pasadena has an excellent branch of the Los Angeles County Society, and we organized a similar one with a promising future at Long Beach.

San Diego is entitled to a chapter of its own. In this beautiful, semi-tropical city, so favored by nature and human enterprise, the profession had been engaged in an internecine, personal and factional war for years, which had brought it into great public reproach. Some of the leading physicians had been kept out of all society relations in spite of the best efforts of the councilor and others, until the strife had come to be looked on as chronic and almost hopeless. Declining to hear anything of the origin or history of their troubles, and having all the factions present at the meeting, I frankly told them of the disgrace which physicians had brought on themselves in all of the ages by causeless, senseless bickerings, how these things had consumed energies and barred progress, showed them how all had been equally to blame but equally held in public contempt for these conditions, and then, without ever referring to their local affairs, I tried to convince them that harmony and co-operation were more important in ours than in any other vocation, and that there were at least ten reasons in favor of these pleasant and profitable relations where there was but one for discord. In conclusion, I urged that if discussions existed there a general clapping of hands, without apologies or explanations, and an individual resolution to try to do better in the future would settle everything. In less time than it has taken to tell this story there was a general and joyous handshaking going on until it embraced every one who had been in discord, and it was tacitly agreed to take every one into the society and unite in efforts to make it one

of the best in the state. Dr. Jones and I remained over for a day to join in a boat ride down the bay, which the local profession insisted on as a ratification of the era of good feeling on which they were all so rejoiced to enter.

I feel that the foregoing is a very imperfect and restricted description of local society conditions in California. I have described things as I saw them, but am convinced that what I have said gives a very inadequate conception of this great profession as a whole. For they have a great profession. Individually they are strong. Socially they are delightful. They are more prosperous financially than in any other section I have visited. But they are weak just where they need to be strong—in their county societies. In consequence, there has been little cohesion or unity of purpose, there has been no systematic or well-directed effort to secure the co-operation of the press and other educational agencies in creating and guiding public opinion in regard to medical and public health affairs or to concentrate the influence of the profession itself on proper legislation.

A system of local societies, composed of and uniting all of the reputable physicians in each county, meeting at short intervals and alive to, and in touch with, every proper and available power for good in their respective jurisdictions, are the only agencies through which these things can be done. In California better than in almost any other state all of the other machinery is about complete. They have a strong state society and an able and fearlessly-edited journal. It is the only state in the Union, except Alabama, which has a secretary who can devote his entire time to this work. Dr. Jones deserves to have, and to a remarkable degree has, the profession solidly enlisted in his support. Their legislation is in a bad shape. They especially need a blanket provision in their medical law, like the one we have in Kentucky, which requires every one practicing the healing art under systems now in existence, or which may hereafter be discovered, to take a fair and impartial examination. There are many other things to be done, but this should receive early attention. They have little legislative influence at present, and there is danger from adverse efforts from the combined quack interests at the next session of their General Assembly, but with such a professional and such an able and unselfish leader, and with such a system of local societies as I have urged, it can and should be the banner state of the Union in medical organization, including model medical legislation.

Society Proceedings

NORTHEAST BRANCH PHILADELPHIA COUNTY MEDICAL SOCIETY.

Organization Meeting, held at Frankford, Nov. 27, 1905.

DR. ROBERT H. CHASE in the Chair.

Origin of the Branch Idea.

DR. ALBERT M. EATON said that Massachusetts was the first to have the state divided territorially, with a medical society in each district and that Philadelphia was the first city to have this division made. The movement had its birth in June, 1901. Chicago followed this plan later. Dr. Eaton said that in originating this "branch idea" he had been influenced: 1, By the apathetic condition of the Philadelphia County Medical Society; 2, the difficulty of persuading physicians to join it; 3, the fact that the meetings were held at an hour inconvenient to most of its members, and 4, because at that time it was not properly fulfilling the purposes of its charter. Another factor helpful in the development of the "branch idea" was the reorganization of the American Medical Association. At St. Paul appeals were made to increase the membership of state societies by additions to the county societies. It had occurred to Dr. Eaton that if this work could be done over the whole nation the idea could be carried out along the same lines in cities of large population. The success of the plan was shown in the statement that in 1901 the membership of the Philadelphia County Medical Society was between 500 and 600, while in 1905 it numbers almost 1,200. At present there are five branches, with another one to form in the near future.

Development of the Branch Idea.

DR. JAMES M. ANDERS said that the branch idea was copied from the so-called district societies of London, and that the

fortunes and destiny of the movement in this country were largely in the hands of the present generation of physicians. He referred to the adoption by the American Medical Association, at St. Paul, in 1901, of a report on the reorganization of the entire profession of the country. On account of the topographical peculiarities in large cities the plan recommended could only be carried out by the creation of local branch societies. Reference was made to the reorganization of the Chicago Medical Society as a brilliant example of work along the line of the development of the branch idea. No other city in the United States can boast of eleven districts, each with its own branch society. A group of branches properly distributed in Philadelphia, Dr. Anders thought would serve to create and maintain a proper interest in scientific medicine and other questions of vital import to a community of physicians not otherwise possible. No other factor, he thought, is so influential as an uplifting force in the profession of a community as a society organized under the branch idea. He urged the hearty support by all state and county societies, including the branches, of a movement inaugurated by the American Medical Association at its meeting in Portland in the creation of a "Council on Pharmacy and Chemistry." The cure of the nostrum evil, one of the greatest of the age, demands the concerted efforts of national, state and county societies. Finally, he endorsed the method proposed by the American Medical Association to effect an organization including the entire profession of America.

Benefits of the Branch Plan.

DR. JOHN B. ROBERTS said that branches are valuable because they give the opportunity for men to attend meetings who can not afford the time to go to the central body; and, because the branches encourage modest and timid members to take part in discussions, a thing they would not do in the central body, because they are not among their immediate associates. The branch system is also of advantage, because it trains men in parliamentary usage and enables the membership of the society to pick out men for the high offices who show executive ability, honesty and a desire to aid in the organization of the profession.

Organizing the Profession.

DR. A. B. HIRSH said that as organization of the profession throughout the land is in active progress, and that the county society is recognized as the unit, it is the expectation that practically all ethical physicians will become members. He reviewed the character of scientific work presented in the central body and the branches of the Philadelphia County Medical Society, showing that in this work there is offered a sort of postgraduate instruction of the general practitioner. The branches are supported by the general society and have no separate dues, and to some are added, with advantage, the social feature. Some of the advantages received through membership in the county society are receipt of the *Weekly Roster*, a bulletin containing the programs of all medical meetings for the ensuing week; membership in the Medical Society of the State of Pennsylvania; the receipt of the *Pennsylvania Medical Journal*; eligibility to membership in the American Medical Association, and in the Mutual Aid Association, a local association through which financial aid is extended to widows and orphans of members, and to members in distress. Further features of value accruing to members are those of the reports of the scientific meetings of the central body of the county society; the legal defense of members, with the state's attorney-general as counsel; the suppression of abortionists and illegal practitioners; the work of the committee on public policy and legislation of the county society, which committee, in conjunction with similar committees of other county societies, is enabled to act quickly and unitedly to prevent legislation hostile to the interests of the public and the profession. Dr. Hirsh emphasized the fact that the best interests of the profession as a whole as well as the individual practitioner demand that all reputable physicians should be in one strong, well-organized body. The membership is said to number over 1,100, with 800 eligibles remaining to become affiliated.

BOSTON MEDICAL LIBRARY MEETING.

Regular Meeting, held Dec. 6, 1905.

DR. GEORGE H. MONKS in the Chair.

Traumatic Epilepsy.

DR. DUDLEY P. ALLEN, (Cleveland, Ohio, read a paper on "Traumatic Defects of the Skull; Their Relation to Epilepsy." His consideration of the subject was chiefly from the point of view of the surgeon. Of 167 soldiers reported to have been treated for head injuries in the Civil War, 23 are now drawing pensions for epilepsy. Of 527 in the Franco-Prussian War, 25 are now suffering from epilepsy. Often the symptoms are less severe, including only periodic attacks of dizziness, headache, etc. In considering these cases the surgeon must consider: 1. Can relief be obtained by operation? 2. At what period had the operation best be done? 3. What class of patients will most probably be benefited by operation? 4. What are the defects of the usual method of operation? 5. What is the best operation? His paper had chiefly to do with some suggestions as to the answer to the last question, but with regard to the others he noted: 1. There is great variation in the results reported. With a three-year limit most surgeons have obtained but few cures—from 2 to 10 per cent. Others reporting immediate relief as cure have attained 80 per cent of cures. 2. All agree that early operation is best, for then permanent destruction of brain tissue is avoided. 3. All injuries to the head should be operated on if it be judged possible that epilepsy may later develop therefrom. Of other later cases best results are obtained from those which have occurred after previous operation, from cases of Jacksonian epilepsy and when there can be found on the skull or scalp evidence of an injury which may have been forgotten entirely. 4. He prefers the method of the bone drill and forceps rather than the trephine. The chief defect seems to be that the surgeon makes no effort to repair the hole. This may be the reason for so many poor results. It is better to restore the normal. 5. For this purpose he has devised a method of using a bone flap. He lays back the scalp and removes bone and connective tissue, all of it, even down to the brain. He divides the dura, if necessary. Then he makes an incision over the thickest nearby portion of the skull and lays bare down to the periosteum. Next he marks out an area the size and shape of the hole already made, and with a chisel scales off the periosteum with chips of bone adherent underneath, laying it in the hole. The scalp is closed up with the exception of a small cigarette drain. In from twenty-four to forty-eight hours the wound is dressed and the drain removed. The second dressing is made in ten or twelve days. Dr. Allen has had seven such cases, three of which he reported to the meeting. All have healed by first intention and have a firm bony covering. One allowed him later to cut down into the new tissue, and it was found to feel and look like bone. Experiments carried out with much difficulty on dogs gave good results. The animals were killed at intervals of two weeks, one month, three months, four months and five months. It was then shown that the graft first fills in around its edges; it remains viable and grows in thickness; at five months the hole is nearly completely filled with new bone, which is quite smooth on the under side, and is covered.

DISCUSSION.

DR. W. N. BALLARD discussed the subject from the point of view of the neurologist. He said that there are few reliable statistics in regard to the possibility of preventing epilepsy by a suitable operation. In all cases of compound fracture of the skull, however, trephining should be done. Of 70 such cases only one was followed by convulsions later, and of 845 cases of epilepsy at the Massachusetts State Epileptic Hospital only 61 had had any head injury which could be assigned as a possible cause. Twenty-two of these were probably due to some other cause, and in 19 the history is deficient. Thus in only 20 cases is the diagnosis of traumatic epilepsy probable. As to United States pensioners, it must be remembered that syphilis is a very common cause of epilepsy and vitiates any such statistics. He urged early operation, thus avoiding the establishment of a habit. Shock will diminish the frequency of epileptic attacks, only to have them recur later.

DR. J. C. WARREN has operated on 11 cases for epilepsy, of which six were for traumatic epilepsy. He reported these cases in some detail, showing a gain in only two of them. He has lately used the osteoplastic resection. In one case the button and the fragments were replaced and united perfectly. He did not believe that the lack of bony covering is necessarily evil.

DR. L. B. LUND showed a boy $9\frac{1}{2}$ years old who, when 4 years old, had a fall, resulting in a depression back of the left ear. Four and one-half years later he began to have convulsions of a general character, which finally became so frequent as to occur once in two weeks. He was operated on last March and a large piece of depressed bone was removed and a cyst underneath was opened. He thinks that the best cases for operation are those where a cyst is formed which can be removed. He would operate on any case of such a horrible disease as epilepsy, if a scar can be found on the head.

DR. E. E. SOUTHIARD said that the pathologist now expected to demonstrate postmortem in a case of epilepsy defects in the fibrillary fibrosis and a gliosis in Ammon's horns. By Weigert's stain the neuroglia fibrils can be differentiated from the nerve tissue, and by Mallory's method they can be differentiated from the connective tissue.

DR. GEORGE L. WALTON believes in operating early and freely if there is a supposed fracture. A blow often causes a fracture or an injury deeper in without apparent damage on the outer tables. He urged giving the patient the benefit of the doubt by an early operation.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

*Eighteenth Annual Meeting, held in Louisville, Ky., Dec. 12-14, 1905.**(Continued from page 2028.)*

Gallstones in the Cystic Duct.

DR. L. H. DUNNING, Indianapolis, presented a method which he has employed in one case which greatly facilitated the pressing backward into the gall bladder of a stone impacted into the cystic duct. In this case the gallstone was lodged in the cystic duct in front of a small stricture. After making all the efforts he deemed prudent to press the stone backward into the gall bladder without success, he then unsuccessfully attempted to dilate the stricture with the finger-tips and later with forceps. One of his assistants suggested that he thought they could better dilate with the forceps if they could see the stricture. The walls of the gall bladder were elastic. The liver was turned up, so that the gall bladder was near the surface. The opening in the gall bladder through which he had been working was enlarged a little, and then the stone was steadied and held against the stricture by an assistant. The fundus of the gall bladder was pushed forward toward the strictured entrance into the cystic duct. They so far succeeded as to bring the opening in the wall of the gall bladder directly opposite the strictured opening. They then tried to introduce the forceps tips, but failed. Picking up a pair of probe-pointed scissors curved on the flat, the point was gently worked through the fistula and the scissors opened; this did not dilate the opening sufficiently, so the edge of the fistulous ring was snipped tightly in two or three places, when they were able to dilate the fistula so as to permit the easy exit of the stone. The operation was completed in the usual way. A rubber tube was fastened in the gall bladder and that viscus was anchored to the fascia. Before they had finished the operation, a little bile had flowed into the gall bladder. Two or three ounces of bile were discharged from the tube daily; at first it was dark and thick, but gradually approached the normal color and consistency. The patient made an uneventful recovery, and had but little pain or soreness in the gall bladder region. The procedure adopted in this case may be found of service in others, but it is not applicable to cases in which the gall bladder can not be brought near the surface, or where the gall bladder is thickened by inflammatory deposits. In Dr. Dunning's experience in operating on 93 cases of gallstones, there were 10 cases of stone in the cystic duct requiring considerable effort to dislodge them. In 2 of

the cases occurring early in his experience the stones were crushed and portions left behind, subsequently giving so much trouble that cholecystectomy was finally performed.

Common Duct Obstruction.

DR. J. WESLEY LONG, Greensboro, N. C., stated that this condition is many times more serious than gallstones in the gall bladder. He quoted the unpublished statistics of the Mayo clinic, where more gallstone operations have been done than in any other clinic in the world, showing that in simple gallstones in the gall bladder the mortality of operation is less than 0.5 per cent., while the mortality in operations for common duct obstruction ranges from 11.9 per cent. in benign cases to 40 per cent. in malignant cases. These facts emphasize the prophylactic value of operating while the stones are yet in the gall bladder.

Common duct obstruction in practically all cases, Dr. Long says, is due either to stones or to malignant growths caused by the irritating presence of stones. Gallstones may exist in the gall bladder for a long while without producing symptoms, but once in the common duct, not only pronounced symptoms, but many serious complications arise. The mortality in these cases is due to the complications, the cholemia, infection, inflammation, and exhaustion due to hemorrhage at the operation. He emphasizes the fact that common duct obstruction can be treated only by surgical methods. After removal of the obstruction, the first consideration is drainage, since it is imperative to overcome the infection. No operation must be deemed finished until the patency of the opening into the duodenum is assured.

Attention is called to the importance of not removing the gall bladder in the operation of choledochotomy, since stones occasionally reform in the common duct, and in these cases the gall bladder serves for drainage.

Gangrene of the Gall Bladder; Rupture of the Common Duct.

DR. JOSEPH RANSOHOFF, Cincinnati, read a paper on this subject which will appear in THE JOURNAL.

Electrothermic Angiotribe in Abdominal Surgery.

DR. J. WESLEY BOVEE, Washington, D. C., has employed the Downes angiotribe in 203 abdominal and 27 vaginal operations, removal of uterus, appendix, spleen, kidney, parovarian cysts, portions of intestine, etc. In these 230 cases the author has had two cases of hemorrhage subsequent to operation. He can not believe the method of hemostasis employed was responsible in either instance. In both cases he is confident latent mild infection was responsible for the hemorrhage. In no other instance has hemorrhage occurred, and he has the utmost faith in the hemostatic properties of the instrument. The advantages of the electrothermic angiotribe of Downes in pelvic and abdominal surgery seem to be a more reliable hemostasis than by ligation; freedom from hemorrhage during operation; the ease of its application in locations in which the use of ligatures would be very difficult and uncertain; the greater security against dissemination in radical operations for malignant disease; the ability to sterilize unclean areas before suturing, as in intestinal and appendiceal surgery; lessening of the tendency to the formation of postoperative adhesions; the increased speed in operations, such as removal of the uterus, the appendages, or the vermiform appendix, and the greatly lessened amount of pain following operation. The disadvantages are the danger of accidental injury of the bladder, rectum and ureter; the necessity of great precision in its employment, and the special care necessary to keep the paraphernalia in good working condition.

DISCUSSION.

DR. ANDREW J. DOWNES, Philadelphia, stated that for four years he has not used a ligature except in the case of a woman on whom he operated for extrauterine pregnancy, and who was moribund at the time. He has performed intestinal anastomoses and gastroenterostomies with these instruments; other surgeons have removed gall bladders, kidneys, etc., with them as aids. He has done 400 or 500 hysterectomies with them, while other surgeons have performed 70 hysterectomies with them.

DR. CHARLES P. NOBLE, Philadelphia, having used the Downes instruments a number of times in removing the uterus for cancer, considers them a great advantage. After the uterine arteries are tied on each side, when one comes down to the vaginal plexus, which is the most troublesome part of the operation when the ligature is used, the veins are apt to leak and flood the field, requiring a number of ligatures to secure hemostasis around the cut vagina. If these instruments are used the field will be perfectly dry. From the standpoint of recurrence of cancer, the instruments have not been used long enough to give figures as to results, but one can believe from the work of Byrne that much better results can be obtained with the aid of these instruments than with ligatures, etc.

DR. HOWARD A. KELLY, Baltimore, said that while the Downes instruments are practical and useful, he thinks that if surgeons exercise more care as to the character of ligatures they use daily, it will limit the use of the Downes method. Fine silk ligatures control bleeding from large blood vessels and are practically innocuous.

Operation for Large Rectocele.

DR. GEORGE H. NOBLE, Atlanta, Ga., presented the technic of an operation which is intended only for large rectoceles. Small rectoceles can be relieved by the ordinary perineal operations. In large rectocele not infrequently there is more or less tediousness, loss of blood in the denudation, and certain objections to puckering the overstretched and distended tissues together and forcing them into the rectum. Furthermore, there are unsatisfactory results by infecting the strong and resisting rectovaginal septum. This operation is presented for the purpose of overcoming these objections. In the technic it will be observed that the rectocele is actually resected, and that the strong or normal rectovaginal septum above the weak occluding point is drawn down to the level of the levator ani muscle and securely anchored. The steps are: 1. A thorough dilatation of the anus and releasement of the rectum. 2. Denudation of a wide collar, as it were, the ring around the neck of the rectocele, beginning high up in the vagina and extending near to the promontory of the rectocele. It is unnecessary to remove the mucosa over the last point mentioned, as it is cut away in the resection. By proceeding with the denudation from within outward, the veins of the rectovaginal septum are cut through at a high point and secured with compression forceps, and the necessity of repeatedly cutting the same vessels in repairing the wound is avoided. 3. Two fingers are placed on the promontory of the rectocele, carried into the vagina and out through the anus, forcing the rectocele ahead of them, and in this way completely everting it through the anus. It is seized with a pair of forceps at the point where it protrudes and is gradually drawn down step by step until the lax portions are secured and a feeling of tenseness is felt. If, in drawing the anterior rectal wall down, the normal parts of the rectum do not come as low as the levator ani, the rectum should be liberated by dissecting it from the vagina, which will permit of further descent and allow all of the overstretched tissues to project beyond the anus. 4. A light pair of compression forceps is then placed on the neck of the rectocele just external to the anus for the purpose of holding it in position. 5. Two sutures, preferably medium-sized kangaroo tendon, are passed through the unruptured portion of the perineum close to the sphincter ani muscle after the manner Emmet inserts his tension sutures in perineorrhaphy. These two sutures in passing across from side to side should take up the prolapsed portion of the anterior wall of the rectum. When tied they closely approximate and anchor sound or healthy rectum to the levator ani muscle and rectal vessels in the deep pelvic fascia. 6. The vaginal side of the wound is completed by doing a perineorrhaphy. The protruding rectocele is amputated about three-quarters to an inch external to the clamp, and its edges closely sutured with a continuous suture of catgut. The case is then treated as an ordinary perineorrhaphy, except that a wet soft dressing is placed over the protruding stump. The stump retracts within the anus in a week's time and takes care of itself. The author reported 5 cases in which he has done this operation, with very satisfactory results.

Wandering Retroperitoneal Fibroid Tumors of Uterine Origin.

DR. I. S. STONE, Washington, D. C., stated that these tumors must reach the space behind the peritoneum by way of the broad ligament. This route is the only one open and is necessarily followed by every fibroid which escapes into any part of the retroperitoneal space, however remote. After a fibroid becomes well separated from the uterus, it usually remains in the broad ligament indefinitely and will always do so unless other tumors develop in the uterus and are forced to follow directly in the same channel as the one preceding. Single tumors are generally found in the broad ligament and the development of others must occur before the variety under discussion exists. Many subperitoneal tumors are seen and few, indeed, have been noticed where the tumor has lost all connection with the uterus. Such growths can not become parasitic and receive their nutrition from some other source, as does the intraperitoneal wandering or parasitic variety. He has no experience with a single wandering tumor behind the peritoneum which has entirely lost its uterine connections and believes such development an impossibility for the reason mentioned above, that a *vis à tergo* must exist. The movement of these tumors is, therefore, directly opposite to that of the intraperitoneal variety, for the latter must have either movable organs to assist in their progress, or else traction, a result of adhesive contact, must aid in lifting or elevation of them upward in the abdominal cavity.

Dr. Stone reported 2 cases illustrating the variety described. Both of these grew to very large proportions. In the first, the largest tumor was very high in the abdomen, and was entirely separate from all former uterine connection, including its blood supply. The presence of a large wedge-shaped middle portion is sufficient proof of the mode of development. It has forced other growths both upward and downward, acting as a wedge between the two. In the second case the central portion of the specimen is made up of many small tumors which have appeared to force the larger growths in opposite directions, as in the first case. The largest growth was highest, and was completely separated from the uterus and the tumors below, except by a small amount of connective tissue, and its anterior peritoneal cover. The pelvic tumors in both of these cases were firmly impacted, and in the second case it was impossible to release the specimen without injury to deep and unseen vessels which resulted in fatal hemorrhage. The first patient made a fairly satisfactory recovery, and was now able to attend to her duties as housekeeper.

Report of 182 Operations on the Thyroid.

DR. CHARLES H. MAYO, Rochester, Minn., said that surgery of the thyroid is increasing. These operations are as satisfactory as any made, giving relief with brief disability. In 50 years the mortality has fallen from 40 per cent. to less than 3 per cent., Kocher's percentage being 2. Accessory glands, like bronchial cysts, are more often found in the lines of hypoblastic inversion. The lymphatics serve as ducts. Total extirpation is followed by cachexia in from 50 to 70 per cent. of cases. Graves' disease is probably due to an over- or perverted secretion, the glands showing a general or local condition of cell activity. The great majority of enlargements in young people respond to medication. Part of the benefit obtained in the removal of the sympathetic is from cutting the lymph channels draining the thyroid. During the past 17 years the Mayos have operated on 182 thyroids, with 9 deaths. Of these, 57 were cases of well-marked Graves' disease, with 7 deaths in all, and but 1 in the last 23. Of these cases, 50 per cent. made an early recovery; 25 per cent. did so during several months. The remainder were improved, but had occasional relapses of a temporary nature. Among the remaining 125 operations representing cysts, colloids, parenchymatous and 5 malignant tumors, there were but 2 deaths, 1 from pneumonia, the other from tracheal collapse, on the third day following extirpation of a carcinomatous goiter. Cocain was used in 13 cases, but ether anesthesia, preceded by morphia and atropin, was the rule. The head was maintained in the high position. The incision is usually transverse. Parenchymatous enlargements and some colloids were extirpated; cysts and

encapsulated growths were enucleated. Saline solution was freely given after operation.

Diagnosis of Renal Calculus.

DR. GUY LE ROY HUNTER, Baltimore, Md., first considered the various other maladies of the kidney from which nephrolithiasis must be differentiated, and then the diseases of other organs which may mislead the diagnostician. The Roentgen ray and the wax-tipped bougie are considered invaluable aids in the diagnosis of renal calculus, but they both fail at times, and the importance of the urine examination in all suspected kidney cases was emphasized. Several cases were reported.

Aneurism Treated by Suture Inside the Sac.

DR. F. W. PARHAM, New Orleans, reported 2 cases treated after the method of Matas. One was an idiopathic aneurism of the popliteal artery, the other an aneurism of the second and third portions of the left subclavian. The popliteal aneurism was treated by suture, inside the sac, of proximal and distal openings separately, and continuous suture of the groove of the artery intervening. In the subclavian case only the proximal opening was sutured, the distal bleeding being controlled by ligatures. Both patients recovered. The indications for this procedure are: 1. The practicability of laying open and inspecting the interior of the sac. 2. The possibility of applying a constrictor, clamp, or temporary ligature to the proximal side of the tumor. In the second case reported the suture was employed because the proximal ligature failed to stop the bleeding completely.

The operation of suture within the sac is to be preferred to ligature, because, first, every possible bit of artery is saved except that actually forming the sac of the aneurism. Second, the suture accomplishes simple approximation of the intima and does not cut through, as may happen with ligature of an atheromatous artery. Third, all collateral bleeding in the sac is stopped by direct suture of the vessel mouths within the sac, and packing of the sac becomes unnecessary. Fourth, hence there is no disruption of the outside vascular (collateral) connections of the sac wall, already much relieved by the emptying of the sac. The reconstruction of the artery is to be attempted only in certain cases, as in aortic aneurism, where suture of the proximal opening will, like ligature, probably be fatal, and in other aneurisms where from swelling and lymphangitis, as in Morris' case, the danger of gangrene is too great to risk any interference with the nutrient stream. In such case reconstruction of the artery may be preferred for two reasons: 1. Because even a temporary continuance of the main stream will be a great advantage until the subsidence of edema consequent on the evacuation of the sac shall have somewhat relieved stress on the collateral vessels; and, 2. because, as remarked by Matas and shown in Dana's case, it is feasible at a secondary operation to open the sac again and to close the arterial opening. In abdominal aneurisms the method of Matas offers some hope of cure.

Varicosity of the Saphenous Veins, with Resulting Varicose Ulcer.

DR. ROBERT CAROTHERS, Cincinnati, Ohio, mentioned complete excision of the internal saphenous vein as being the most satisfactory operation to be employed. Until the ingenious invention by Charles H. Mayo of two instruments which subcutaneously strip the vein, it was an operation which required a long incision, tedious dissection and considerable time for its performance. Mayo's operation is very quickly and easily done, but it is not without danger from hemorrhage or sepsis. Dr. Carothers has twice performed this operation and the immediate results were satisfactory. The cases are too recent to judge of the ultimate results. They were old cases with large, troublesome ulcers treated by skin grafting. The patients were able to leave the hospital in less than three weeks, wearing an elastic porous bandage for support, and are now, at the end of about eight weeks, at work as housewives. In one case in which there was a troublesome eczema, after an effort of one week to relieve the same, he again followed the advice of Dr. Mayo, sealing the eczematous area with compound tincture of benzoin until the skin had healed.

Early Diagnosis and Radical Cure of Carcinoma of Prostate.

Dr. HUGH H. YOUNG, Baltimore, Md., presented conclusions drawn from a study of 40 cases. He said that carcinoma of the prostate is more frequent than is usually supposed, in that it occurs in about 10 per cent. of the cases of prostatic enlargement, as shown also by Albarran. It may begin as an isolated nodule in an otherwise benign hypertrophy, or a prostatic enlargement which has for many years furnished the symptoms and signs of benign hypertrophy may suddenly become malignant. Marked induration, if only on intralobular nodule in one or both lobes of the prostate in men past 50 years of age, should be viewed with suspicion, especially if the cystoscope shows little intravesicular prostatic outgrowth, and pain and tenderness are present. The posterior surface of the prostate should be exposed as for an ordinary prostatectomy, and if the operator is unable to make a positive diagnosis of malignancy, longitudinal incisions should be made on each side of the urethra, as in prostatectomy, and a piece of tissue excised for frozen sections, which can be prepared in about six minutes and examined by the operator at once. If the disease is malignant the incisions may be cauterized and closed and the radical operation performed. Cancer of the prostate remains for a long time within the confines of the lobes, the urethra, bladder, and especially of the posterior capsule of the prostate resting inviolate for a considerable period. Extraprostatic incision nearly always occurs, first, along the ejaculatory ducts into the space immediately above the prostate between the seminal vesicles and the bladder, and beneath the fascia of Denonvilliers. Thence the disease gradually invades the inferior surface of the trigone and the lymphatics leading toward the lateral walls of the pelvis, but involvement of the pelvic glands occurs late, and oftentimes the disease metastasizes into the osseous system without first invading the glands. Cure can be expected only by radical measures, and the routine removal of the seminal vesicles, vasa deferentia, and most of the vesical trigone with the entire prostate, as carried out in 4 cases by the author and fully described by illustrations, is shown to be necessary by the 40 cases, including 8 autopsies and 10 operations. The 4 cases in which the radical operation was done demonstrate its simplicity, effectiveness, and the remarkably satisfactory functional results furnished.

Surgical Treatment of Floating Kidney; Postoperative Results.

Dr. FLOYD W. McRAE, Atlanta, Ga., argued for surgical intervention rather than attempted support by bandages or corsets, but urged careful selection of cases for operation, and the recognition of correction of associated pathologic conditions. He called attention to the frequent coincidence of floating kidney and chronic or recurring appendicitis. He described a new muscle-splitting operation, delivery of the kidney, partial decapsulation, the making of a broad quadrilateral suspensory ligament by dissecting forward the fibrous capsule from near the hilum to beyond the convex border of the kidney. A mattress suture is put in each angle of the capsule, near the hilum, from which the suspensory ligament has been dissected, and including the reflected flap from either pole of the kidney. These sutures are passed deeply into the muscles of the back, high up, so as to bring the kidney well into the hollow of the loin and close up to the twelfth rib. The quadrilateral suspensory ligament is next brought up between the separated muscles and held there by two silk-worm-gut sutures passed through all the structures from within out. A cigarette drain is placed between these sutures and the remainder of the wound closed in layers with interrupted catgut sutures. Care is taken to avoid injury to iliohypogastric and ilioinguinal nerves. The operation was illustrated by drawings. Thirty-two cases were reported.

Chronic Endocervicitis; a New Method of Treatment.

Dr. DANIEL H. CRAIG, Boston, said that the diagnosis is made to depend on the conditions of contraction or relaxation of the internal os. In the absence of flexion the inflammation is confined to the tissues external to the internal os. If, on the other hand, the internal os is distinguished with difficulty or

not at all, because of its relaxation and wide caliber, the inflammation is above the internal os, which is thus widely dilated to favor free drainage and to guard against back pressure. Treatment by Craig's method should be strictly confined to those cases in which the internal os is distinctly contracted.

Dr. Craig's treatment consists in curetting the cervical canal up to, but not beyond, the internal os, with a specially designed curette after dilatation of the external os with a conical dilator, also specially designed for this purpose. The operation is quickly and easily performed at the office of the gynecologist without the use of anesthesia, except occasionally a few crystals of cocaine at the external os, and without confinement to bed. Pain, when done without cocaine, is about the same as that due to the filling of teeth. Inasmuch as the most rigid asepsis is requisite to render such ambulatory treatment safe, the author does not offer this operation for the use of those not thoroughly familiar with surgical and gynecologic manipulations, but for those who are able to establish and maintain a rigid asepsis.

The preparatory and after-treatment consist of three 1 to 5,000 formalin douches daily for three days before, and for ten days after, the operation, with avoidance of unusual exertion and abstinence from sexual relations. The cure is prompt and complete, only a relatively very few severe cases requiring more than the original curettement. Tubo-ovariitis or other concomitant disease, which may be aggravated or lead to a recurrence, constitutes a contraindication to treatment, except as an immediate preliminary to radical operation. The treatment is not intended as a substitute for tracheoplasty, nor for uterine curettement in cases in which the disease has invaded the corporeal endometrium.

Dr. RUFUS B. HALL, Cincinnati, Ohio, reported 2 cases of traumatism of the ureter and pelvis of the kidney, in which the ultimate results were satisfactory.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Pruritus of the Vulva.

Frederick J. McCann, in the *Clinical Journal* (London), states there are many conditions which may be the source of this trouble: the most important of these is, perhaps, eczema. The lack of cleanliness is also a frequent cause of this condition. The presence of pediculi is another cause of pruritus, for which condition he recommends the mercurial ointment as the best treatment. Another common condition of which he speaks is the presence of tender spots on one or the other side of the vulva, which can be easily detected by using a probe, when the patient will be able to tell when the affected part is touched. The best treatment for this condition, he believes, is the application of pure carbolic acid or tincture of iodine to the tender spot. Sometimes the cauterization is necessary to relieve this condition. After the use of the caustic, whatever it may be, he recommends the application of a bland ointment to these local areas. McCann mentions crops of small boils as frequent factors in producing pruritus. In other cases the condition of the urine is at fault, there is either the presence of sugar or simple hyperacidity. Consequently, whenever a patient presents herself complaining of pruritus the urine should be examined for sugar and the reaction ascertained. Climacteric glycosuria not infrequently occurs in fat women, and in those of the Jewish race, and these cases are best treated by the administration of opium given in the form of a pill, one to six grains daily. This amount should be increased or diminished according to the condition of the patient and the treatment kept up for a month or two.

In cases of hyperacidity of the urine the internal adminis-

tration of alkalis is recommended along with the local application of the following ointment:

R. Bismuthi carbonatis.....gr. x [65
Unguenti simplicis.....ʒi 30]

M. Sig.: Apply locally.

A good alkaline mixture internally, as recommended by the writer, is composed as follows:

R. Potassii bicarbonatis.....ʒiii 8|
Potassii acetatis.....ʒiiss 6|
Aque camphoræ.....ʒi 30]

M. Sig.: One teaspoonful in water four times a day.

The diet must be properly regulated, and the amount of meat diminished.

Vaginal pruritus, he states, may also be caused by vaginal discharges during and after menstruation. The best treatment under these circumstances is the bismuth ointment applied locally, in order to protect the mucous membrane against the irritating discharge. As an injection a bland liquid is recommended similar to the following:

R. Potassii permanganatis.....gr. v-x [30-65
Aque dest.....ʒi 500]

Other causes he mentions are pregnancy and epithelioma; he also speaks of cases in which examination fails to reveal anything wrong. These cases generally occur in neurotic women, and no marked changes in the skin and mucous membrane can be detected.

In the examination of these cases one must be thorough in order to get at the proper seat of the trouble, and it will be found that the most sensitive area in the vulva is at that part where it joins the vagina, where one may find small fissures and tender spots in the vicinity of the ring, together with a degree of inflammation extending into the vaginal canal. Consequently no treatment is of any avail unless it should be applied to the vagina as well as to the vulva, and if the general practitioner will take that into consideration he will find success in these treatments where formerly failure has been the rule.

The author recommends carbolic acid as the best preparation in the local treatment of pruritus. It will always cure this condition, he states, if used in the proper strength. It is a local anesthetic and a strong antiseptic.

According to McCann, one should begin first with a solution of 1 in 40, and if that does not prove to be strong enough, it should be increased to 1 in 20 and, if necessary, to 1 in 10. [When using phenol (carbolic acid), as recommended by this author, the possible untoward effects of the drug must be borne in mind and guarded against, as well as a possible idiosyncrasy on the part of the patient.]

There is one point on which he places special stress in the treatment of these cases, and that is that a cure will never be effected in a bad case of pruritus unless the patient is put to bed. The relief obtained by the horizontal position diminishes the local congestion and necessarily improves the condition of the patient. He states that the proper way to apply carbolic acid is to cut strips of lint and to steep them into a 1 in 20 carbolic acid solution. These strips should be about three inches in length. One inch of the strip should be introduced into the vagina and the remainder spread into the form of a fan between the labia, so as to cover the surfaces as much as possible, and should be left in place over night. He attaches importance to this method of application, and says that the strips should not be applied to the vulva alone, but should extend into the vagina, in order to give complete relief. After applying these medicated strips he advises the application to the vulva of a large pad of antiseptic wool over which boracic acid has been powdered, kept in place by means of a T bandage. After the carbolic acid has been used once or twice locally, and the conditions show improvement, the ointment of bismuth carbonate should then be applied. This ointment should be made up of carbonate of bismuth, lanolin and glycerin, which makes a fairly thick paste and forms a very effective coating to the mucous membrane and the surrounding skin.

In case there are patients who do not yield to the carbolic acid treatment, which is very unlikely, in the opinion of this author, the following combination is recommended:

R. Spiritus chloroformi.....ʒi 4|
Olei amygdalæ.....ʒi 30]

M. Sig.: Apply locally to the affected areas with a camel's hair brush or on a piece of wool or lint.

It must not be forgotten, with this preparation, that the vagina must be reached as well as the vulva, in order to cure the patient.

Hot sitz baths are very useful in combination with the treatment just described, because in many cases there is lack of cleanliness and increased amount of discharge. These sitz baths should be tepid and should contain bicarbonate of soda—half a pound of the bicarbonate of soda to the usual bath. After the bath the local parts should be thoroughly dried, the carbolic acid gauze inserted, and the boracic wool applied. When these are removed in the morning, the parts should be thoroughly cleansed and the ointment applied.

The author mentions several lotions which are of use in these cases, one of the best of which is the following:

R. Sodii bicarbonatis.....ʒi 4|
Olei menthæ piperitæ.....m. v [30
Aque.....ʒi 500]

M. Ft. lotio. Sig.: Apply locally.

Another good lotion is the liquor carbonis detergens, which acts almost as a specific in some cases, especially when the irritation has been alleviated by the carbolic acid preparation. The author recommends the following combination, with directions for the patient to use at home in order to prevent the return of the pruritus:

R. Liquor carbonis detergens.....ʒi 4|
Plumbi subacetatis, ʒā.....m. x [65
Aque.....ʒi 30]

M. Ft. lotio. Sig.: Dilute with an equal quantity of warm water and apply locally to the affected part.

[Liquor carbonis detergens is a mixture of coal tar 1 part and tincture of quilloja 6 parts.]

If an ointment is preferred, the following combination may be ordered:

R. Liquor carbonis detergens.....ʒi 4|
Hydrargyri ammonii chloridi.....gr. x [65
Lanolini.....ʒi 30]

M. Ft. unguentum. Sig.: Apply locally two or three times daily.

The author mentions in this connection that lanolin is very much better than vaselin as a base for these ointments, as it is more soothing to the irritated parts. He also mentions the fact that ointments are much better than lotions. Another lotion which he recommends is composed as follows:

R. Zinci oxid
Mucilaginous tragacanthæ, ʒā.....ʒi 4|
Aque calcis.....ʒiv 15|
Aquam ad.....ʒi 30]

M. Ft. lotio. Sig.: Apply locally.

As ointments the following combinations may be serviceable:

R. Pulv. amyli
Zinci oxid, ʒā.....ʒiii 8|
Lanolini.....ʒiv 15]

M. Ft. unguentum. Sig.: Apply locally. Or:

R. Unguenti zinci.....ʒiii 60|
Pulv. amyli.....ʒiv 15]

M. Ft. unguentum. Sig.: Apply locally. Or:

R. Acidi hydrocyanici dil.....ʒi 4|
Unguenti bismuthi.....ʒi 30]

M. Ft. unguentum. Sig.: Apply locally.

In some cases a 4 per cent. solution of cocain is recommended to relieve this intense itching, or a weak continuous current in the so-called neurotic cases may be of service.

In the general treatment, rest and regulation of diet are important.

Another most important precaution is to prevent patients from taking alcohol, which they are liable to do because of the depressing effect that the pruritus has on their system. Local sedatives, such as the bromid of sodium in 20 grain (1.30) doses, three times a day, are advisable in some cases.

If the case should be so unruly that carbolic acid can not cure, the author recommends excising the whole ring of the mucous membrane at this sensitive area.

Medicolegal

Admissibility of Evidence of Intercurrent Disease.

The Supreme Judicial Court of Massachusetts holds, in *Dickinson vs. City of Boston*, that, in an action by an administrator to recover for the conscious suffering of an injured person from the time of her injury to her death, evidence which had a tendency to prove that during this period she was suffering and finally died from an intercurrent disease was admissible. But an attempt for this purpose to elicit on cross-examination from the mother of the deceased, who was a witness for the plaintiff, that other members of her family had died from pulmonary tuberculosis, and hence there was a presumption that her daughter also had died from this disease, well may have been deemed in the discretion of the presiding judge as too remote to be of any probative value, and its exclusion afforded no just ground of exception.

Attendance on Wife or Child Under Bankruptcy Law.

The United States District Court, Eastern District of New York, without attempting to define the limits of the provision in Clause 2 of Section 17a of the Bankruptcy Act, as amended in 1903, excepting from the claims dischargeable under the act for those "for maintenance or support of wife or child," holds, in *re Ostrander*, that it does not apply to medical attendance furnished on express or implied contract of the husband or parent to pay therefor while the recipient is a member of the family, and while there is no breach of duty on the part of the person contracting the debt toward the one receiving the service. It says that it is considered that the words, "for the maintenance or support of wife or child," do not refer to a debt incurred for the services of a physician called by the husband to attend the wife while she is in normal relation to her husband. If so, a person supplying goods for a wife or child, or rendering a service necessary for support or maintenance, at the request of the husband, without delinquency on his part, would be beyond the scope of the bankruptcy act. The grocer, the marketman, clothiers of all descriptions, physicians, dentists, in fact, all who, by service or sale, contribute to the support of the family, and thereby to the support of a wife or child, would have claims not dischargeable under the act. The provision has probable application to cases where the person applying for discharge from his debts had so betrayed his moral and legal duty as a husband or parent that another was justified in providing the maintenance and support denied by the one on whom the law places the primary duty.

Admissibility in Evidence of Photographs of Wounds.

The Supreme Court of Nevada holds, in the homicide case of *State vs. Roberts*, that a photograph of a wound in the back after it had been opened by the knife of a surgeon was properly excluded by the trial judge, because the bullet hole was no longer in the condition caused by the accused. But it finds no error in the admission in evidence of three photographs, one of which showed the face of the deceased in the repose of death in which a witness was able to recognize the features of the man picked up, while the others showed the entrances of the bullets in the arm and leg, and were illustrative and instructive in connection with the testimony of the physician and other witnesses. It says that if their tendency was to give a more vivid realization of the wounds than a verbal description, they were less greswome than an exhibition of the man's injuries to the jury in his real flesh and bone, which would have been permissible, if practicable. They had been taken the day after the man died, and were not especially repulsive, and there was testimony as to their correctness. Some extreme cases were cited where photographs were rejected on the grounds that witnesses had described what they would show, or that they would inflame or prejudice the jury—doctrines that this court is not able to sanction, and which are not supported by the weight of authority. Ifjuries can not be entrusted with the pertinent facts for which litigants and offenders are responsible, however appalling they may be, and with the most accurate, instructive and convincing evidence of

those facts, it is time to abolish the jury system. Photography, engraving and the arts of picture making are important factors in our civilization, and the courts in their search for truth should not be adverse to accepting the benefits they bring. A glimpse at a photograph may give a more definite and correct idea of a building or of a person's features than the most minute and detailed testimony. When photographs are shown to be correct representations, and give a better and clearer understanding of relevant facts, it would seem on reason and principle that their use as evidence should be favored. It is generally held that they need not be taken by a professional photographer, and that any one who knows may testify regarding their correctness.

Scope of Privileged Communications.

The Court of Appeal, Second District, California, says that the plaintiff in the case of *McRae vs. Erickson* and others was injured while working for the defendants in the construction of a railway tunnel. Exception was taken to the exclusion of the testimony of a physician as to a statement made to him by the plaintiff at the defendants' hospital, to which he had been taken for treatment. It was contended that there was nothing in the record to indicate that the witness was acting professionally, or with a view to treating the plaintiff, or that the information was obtained with a view to treatment, and that the information was, in fact, not necessary to enable him to prescribe or act for the patient. But the court thinks that the former point was obviously untenable. It says that the witness was a physician and surgeon, and as such was in charge of the defendants' hospital, and his services were remunerated by assessments on the wages of the men, so that he was, in effect, employed by the plaintiff. He examined the plaintiff as a physician, and the plaintiff knew that he was examining him as such, and the information sought was obtained from the plaintiff at the time he was examining him, or some time during the day. The court below was right in holding that the communication was made to the witness in the course of professional employment.

With regard to the second point, the Court of Appeal says that the court was not informed as to the effect of the statement sought otherwise than by questions from which it could not be very clearly determined what the statement would have been. If it was as indicated by one question, asking if the plaintiff made a statement explaining how the rock fell, and how it hit him, the information sought was apparently of a character necessary to the proper treatment of the patient; but information as to the direction or point whence the rock came, asked for by another question, would seem to have been unnecessary for such purpose, and to this extent, if regard be had to the most obvious sense of the statute, the point raised would seem to have been well taken. But to give to the statute this narrow construction would equally exclude from its application many, if not most, of the answers to questions usually put, and properly and necessarily put, by competent physicians to patients in cases of this kind, in order to enable them to act for their patients. This, the court thinks, would be to defeat the obvious purpose of the act.

Therefore, the court is of the opinion that the view of the court below in this case was correct, and that the intention of the statute is to exclude all statement made by a patient to his physician while attending him in that capacity for the purpose of determining his condition; nor does this construction, the court thinks, do violence to the language of the act liberally construed, which is to be understood as forbidding a physician to be examined "as to any information acquired in attending the patient, the acquisition of which was necessary (or which it was necessary for him to acquire) in order to enable him to prescribe or act for the patient." Of this necessity, from the nature of the case, the physician must commonly be regarded as the sole judge; for it would be obviously unreasonable to require of the patient the exercise of any judgment with reference to the propriety of the questions asked by the physician, except, possibly, in cases where the materiality of the question is obviously apparent.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

December 23.

- 1 Exile and Drugs in the Treatment of Tuberculosis. A. Jacob, New York.
- 2 *One Patient's Experience with a Number of Specialists. G. M. Gould, Philadelphia.
- 3 Diagnosis of Bright's Disease. L. B. Pillsbury, Lincoln, Neb.
- 4 *Effect of Copper Sulphate on the Bacteriologic and Chemical Constituents of Large Bodies of Water. W. R. Stokes and J. R. Thomas, Baltimore.
- 5 Postoperative Nausea and Vomiting. L. E. Holmes, Asheville, N. C.
- 6 *Control of Nasal Hemorrhage. H. J. Mulford, Buffalo, N. Y.

2. **One Patient's Experience.**—Gould reports a case in which the patient had suffered from profound symptoms, seemingly of intestinal nature, but also from psychic symptoms, such as lapses of consciousness at least closely simulating those of major epilepsy, morbid delusions, etc. His disease was diagnosed by the leading specialists as indigestion, hysteria, neurasthenia, nervous breakdown, or hyperchlorhydria, but all the treatments ordered had no effect in lessening the symptoms. One ophthalmologist reported to the neurologist that nothing was wrong with the patient's eyes, and then tried glasses, which gave no relief. A leading consultant made the diagnosis of eyestrain as the fundamental cause of the trouble, and soon after the ametropia had been accurately corrected by the third oculist the patient was restored to health.

4. **Effect of Copper Sulphate on Bacteriologic and Chemical Constituents of Water.**—Stokes and Thomas show from their experiments that a dilution of 1 to 100,000 will destroy about 95 per cent. of the algae in water in 48 hours, but that this dilution is not effective against water bacteria. One to 100,000 and 1 to 1,000,000 will destroy all fermentative bacteria in from 24 to 48 hours, respectively. Since the typhoid bacillus is more vulnerable than the fermentative bacteria, it is assumed that this organism can be destroyed in large bodies of water by these dilutions. The dilution of 1 to 100,000 caused a marked decrease in the total and suspended residue, as well as in the nitrates, albuminoid, ammonia, free ammonia and required oxygen. In one case in which the water contained much fine clay in suspension there was a decrease of about 25 per cent. in the total solids. In fairly impure water the fermentative bacteria were not destroyed, and the assumption concerning the destruction of the typhoid bacillus does not apply to such water.

6. **Control of Nasal Hemorrhage.**—Mulford's method consists in the subcutaneous injection of adrenal extract into the arterial supply at the nearest accessible point to the bleeding area. The injection may be made directly into the artery supplying the part, or it may be thrown into the tissue closely adjacent to the artery. The ingoing arterial current sweeps the solution directly into the leaking area, all the vessels of the part are constricted, and almost at once the hemorrhage ceases.

Medical Record, New York.

December 23.

- 7 *Neurasthenic States Caused by Excessive Light. C. E. Woodruff, Plattsburgh Barracks, N. Y.
- 8 *Curative Treatment of Pneumonia, with Points on Hydrotherapy and Therapeutic Fasting in Fevers. C. E. Page, Boston, Mass.
- 9 Congenital Stenoses of the Urethra. F. E. Gardner, New York.
- 10 Dysmenorrhea at Puberty, and Uterine Tumors. F. D. Reese, Cortland, N. Y.
- 11 *Tonsillitis. R. M. Niles, Scranton, Pa.

7. **Neurasthenic States, Caused by Excessive Light.**—According to Woodruff, an excess of light may be injurious owing to the underlying law that the effect of the short waves is always destructive and never constructive. The various races have been provided by nature with a degree of cutaneous pigmentation suitable for the average intensity of light in the region in which they are native. The blond, fair-skinned races are indigenous in the comparatively dark, gloomy, northern countries, whereas the inhabitants of tropical and subtropical lati-

tudes are universally brunettes. This principle is so radical that the blonds, in the course of time, tend to become extinct if they migrate to more sunny regions. Woodruff states that the excess of sunlight to which the people of many parts of this country are exposed is distinctly injurious and is a potent cause of neurasthenia. He states that, as a matter of fact, neurasthenia is commoner in blonds than brunettes, is worse in cities than in the country, and is vastly benefited or cured by removal to dark, cloudy climates. The same element is of importance in the treatment of tuberculosis, and excellent results in treating the disease in this country and in Europe are obtained in sanatoria where there is a minimum of sunshine. Woodruff suggests that a uniform system of recording complexions be adopted, for the purpose of gathering statistics, and he has devised a numerical scheme of notation, by using which it will be possible to secure uniformity in the records.

8. **Curative Treatment of Pneumonia.**—Page enters a strong protest against what he terms the non-curative, not to say killing, treatment of pneumonia, which is the prevailing one and includes drugs and forced feeding plus the mischievous effects of hot poultices on hot lungs. The essential features of his plan consist in the use of cool applications to the chest and abstinence from practically all nourishment except water. In this way, he says, the disease when taken early is frequently aborted, and the normal death rate becomes 5 per cent. for private and hospital cases combined, while in private practice alone it is about 2 per cent. For pneumonia the procedure recommended is as follows: A large towel, coarse linen or cotton, is folded lengthwise in the middle, then folded crosswise in the middle, and one-half the length of this four-ply towel is wrung tightly from ice water, or the coldest water obtainable, and again folded crosswise, so as to give four thicknesses of damp towel next the skin, and the same, dry, outside. The damp folds should be freshened as often as they become at all hot, whether this be in ten, twenty, or thirty minutes. At first, in severe cases, the changes will be necessary as often as every eight or ten minutes, the intervals lengthening more and more as the inflammation subsides, and breathing consequently becomes deeper and easier. When the patient is able to breathe naturally, and the compress no longer becomes hot, and before it is felt to be an uncomfortable treatment, this local cooling should cease. In some cases hot applications are also made to the legs. Page emphasizes the untoward results attending the employment of forced feeding, and points out the great advantages of keeping the patient on a diet of warm water until convalescence is established.

11. **Tonsillitis.**—Niles urges isolation of the patient, and broken doses of calomel, followed by a saline; or, if the stomach be irritable or the patient objects to the saline, one-fourth to one drop of croton oil in combination with hyoscyamus and a carminative may be given. Quinin in tonic doses, 2 grains, three times a day, should be given in the majority of cases. Strychnin may be added, if indicated. He has found that aconitin not only controls the fever, but may abort the disease. Sodium salicylate is useful in cases presenting the rheumatic diathesis, and guaiac is serviceable both as a gargle and as a constitutional remedy.

New York Medical Journal.

December 23.

- 12 Diagnosis of Acute Hemorrhagic Pancreatitis. J. C. Wilson, Philadelphia.
- 13 *Complexions of the Insane. C. E. Woodruff, Plattsburgh, N. Y.
- 14 *Arteriovenous Aneurism of the Occipital Vessels. H. Cushing, Baltimore.
- 15 *Ten Years' Experience of the New York Department of Health with Diphtheria Antitoxin. J. S. Billings, Jr., New York.
- 16 Manual Treatment of Diseases of Women. G. Norstrom, New York.
- 17 A Study of Contagion. (To be continued.) W. S. Cornell, Philadelphia.
- 18 Hourglass Contraction of Stomach. O. Lerch, New Orleans, La.

13. **Complexions of the Insane.**—Woodruff discusses the statistical study of the complexion of the insane conducted by Dr. W. L. Russell, the medical inspector of the New York Commission in Lunacy, which shows the remarkable preponderance of brunettes. He concludes as follows:

Owing to the rapidly increasing data as to the damage done to living tissues by the short rays of light and the ultraviolet, it too intense, it is of vital importance that observations be recorded of the complexions of all the sick, particularly those suffering from nervous affections. It has a very practical prophylactic and therapeutic importance. Such data, to be of the greatest scientific value, should, of course, be compared with statistics of the complexions of the general population, urban and rural, native-born and alien, and also native-born of foreign parentage. This country is very backward in such anthropologic work, and it is high time it were taken up in earnest, particularly in the schools. Too long have we been damaging our blonde patients, particularly the tuberculous, by sending them south when they should be kept north. Only brunette invalids will do well in the south.

14. Arteriovenous Aneurism of Occipital Vessels.—Cushing reports a case of this kind in which the aneurism had existed for seven years and was the result of a fall out of a wagon on the back of the head, the patient sustaining merely a superficial contused wound which healed up promptly. A small pulsating swelling appeared shortly afterward and continued to increase in size until finally there presented itself a soft, visibly pulsating tumor, about 5 cm. in diameter and elevated about 2 cm. above the level of the surrounding scalp. Radiating from this more prominent area were several hugely dilated and pulsating veins. The operation in this case consisted of a ligation of the left external carotid artery, with excision of the aneurismal varix. The result was entirely satisfactory.

15. Ten Years' Experience with Diphtheria Antitoxin.—Billings shows that the mortality rate from diphtheria in New York City in 1889-91 was 37.3 per cent., whereas in 1902-04 it was only 10.8 per cent. The mortality has apparently been reduced over 200 per cent. Very much better results are being obtained at present than during the first few years following the introduction of antitoxin. Of 2,447 cases of diphtheria treated between 1895-1897, 641, or 26 per cent., were laryngeal. Of 4,730 cases treated from 1902-1904, only 628, or 13 per cent., were laryngeal. Billings says that there can be no doubt that this decreased frequency of laryngeal involvement is directly due to early, larger and more frequently repeated doses of antitoxin. Less than 0.5 per cent. of all children immunized contracted the disease.

Medical News, New York.

December 23.

- 19 The Therapeutic Outlook in Pediatrics. L. E. Holt, New York.
- 20 *Wandering Gallstones. W. L. Estes, South Bethlehem, Pa.
- 21 Chronic Rheumatism. C. F. Palmer, Boston, Mass.
- 22 *Treatment of Lobar Pneumonia. A. Kohn, New York.
- 23 Clinical and Bacteriologic Study of the Communicability of Cerebrospinal Meningitis and the Probable Source of Contamination. C. Bolduan and M. E. Goodwin, New York.
- 24 *Results of Cold Irrigations as Compared with Warm Irrigations in the Treatment of Gonorrheal Urethritis and Endometritis. E. C. Shattuck, Manila, P. I.
20. Wandering Gallstones.—Estes discusses this condition and cites an illustrative case. He believes that the sequence of pathologic changes is as follows: 1. The development of the stones or stone in the gall bladder. 2. An after-infection of the interior of the gall bladder. 3. Suppuration and ulceration of the lining of the gall bladder. 4. Coincident adhesions of the gall bladder to the transverse colon, to both omenta, and possibly to the duodenum and mesocolon. 5. Perforation of the gall bladder by extension of the ulceration, with adhesions strong enough to resist the pressure of the escaping contents of the gall bladder. 6. Encysting fibrous sac. 7. Gradual working downward of the abscess and contents.

22. Treatment of Pneumonia.—Kohn urges the administration of drugs by the hypodermic method in pneumonia whenever this is possible. External applications of all kinds he condemns, except a cold compress about the chest for antipyretic purposes. Hydrotherapy which mauls and pulls the patient about, Kohn says, is harmful. He emphasizes the importance of careful management of the diet. Milk, he says, should form the principal article of food; the customary dilution with a carbonated water he does not advise. Any water containing carbonic acid, he says, is to be avoided. Strychnin, administered hypodermically, will strengthen a weak and flagging heart. When further medication is needed, Kohn uses camphor and oil. In pulmonary edema he employs wet cups. He regards the tincture of musk as the most valuable heart stimulant.

24. Cold Irrigations in Gonorrheal Urethritis and Endometritis.—Shattuck reports the results obtained by the use of cold irrigations in 277 cases during a period of five months as compared with the results obtained by the use of warm or hot irrigations in 295 cases during the same period of time. The cases consisted of gonorrheal urethritis, vaginitis and endometritis, with or without complications. The complication which retarded the cure most was chronic metritis. All cases were positive microscopically on beginning treatment and the patients were not discharged cured until examinations were negative both clinically and microscopically. The method of irrigation in women was as follows: Vaginal douches with ordinary douche points, followed by urethral irrigations by means of a reflux silver catheter were given twice daily. Intrauterine or intracervical irrigations were given once daily, using a return current metal catheter, except in cases where the uterus was not involved. The treatment was reinforced by vaginal tampons, once a day, of 15 per cent. ichthyol in glycerin, or 5 per cent. carbolic acid and alum in glycerin. The antiseptics which were added to the solution were, at different times, lysol in .5 to .7 per cent. solution, potassium permanganate from 1 to 3,000 to 1 to 2,000, and for intrauterine irrigation, zinc sulphate 2 per cent. solution and potassium permanganate 1 to 2,000. During half of the first period, while warm irrigations were being used, the antiseptic was lysol; during the latter half, potassium permanganate was used. During the period of cold irrigation, potassium permanganate was used almost entirely. The results, in general, obtained while warm irrigations were being used were fair. In cases in which intrauterine irrigations were given, there was, as might be expected, an occasional case of uterine colic.

Boston Medical and Surgical Journal.

December 21.

- 25 Report of the Committee on the Progress of the Crusade Against Tuberculosis in the City of Boston. H. Jackson, E. O. Otis, and E. A. Loomis.
- 26 Present Attitude of Blood Examination for Diagnostic Purposes. F. E. Sondern, New York.
- 27 Laboratory Aids in the Diagnosis of Disorders of the Gastro-Intestinal Tract. E. E. Smith, New York.
- 28 Some Recent Advances in Urology. L. Heltzmann, New York.
- 29 Some Advantages and Fallacies of Urinary Examinations. E. C. Savidge, New York.

Lancet-Clinic, Cincinnati, Ohio.

December 23.

- 30 *Operative Treatment of Tuberculous Joints. H. J. Whitacre, Cincinnati.
- 31 Bone Tuberculosis. W. W. Vlnedec, Lafayette, Ind.
- 32 *Management of Neurasthenics. H. A. Rodabaugh, Columbus.
- 33 Cases of Invagination (Intussusception) of the Uterus. B. Robinson, Chicago.
30. See abstract in THE JOURNAL, Oct. 28, 1905, page 1353.
32. Id.—Nov. 4, 1905, page 1436.

St. Louis Medical Review.

December 16.

- 33½ Result of an Examination of Yellow Fever Blood Indicating a Protozoan Origin of the Disease. M. Schuller, Germany.
- 33¾ Examples of Corrupt Medical Nomenclature. A. Rose, New York.
- 34 Biographie Clinique on Berlioz. G. M. Gould, Philadelphia.

Annals of Surgery, Philadelphia.

November.

- 35 *Review of Five Hundred Cases of Gastroenterostomy, Including Pyloroplasty, Gastroduodenostomy and Gastrojejunostomy. W. J. Mayo, Rochester, Minn.
- 36 *Splenectomy for Myelogenous Leukemia. M. H. Richardson, Boston, Mass.
- 37 *Rupture of Intestine. R. P. Campbell, Montreal.
- 38 *Management of Certain Critical Cases of Intestinal Obstruction. J. W. Elliot, Boston, Mass.
- 39 Anclulation at the Signoid. H. B. Delatour, Brooklyn, N. Y.
- 40 Mesocolic Hernia. J. F. Dobson, Leeds.
- 41 Lymphatic and Hepatic Infections Secondary to Appendicitis. J. C. Munro, Boston.
- 42 Parotitis Following Appendectomy. E. Bowe, Jacksonville, Ill.
- 43 Acute Gangrenous Appendicitis in Typhoid Fever Stimulating Perforation. J. H. Jopson, Philadelphia.
- 44 *Jahorin's Anastomotic Button. E. Beer, New York.
- 45 Tuberculous Peritonitis in Woman. H. O. Marcy, Boston.
- 46 Fracture of a Phalanx Near the Epiphysis. J. A. Wyeth, New York.
- 47 *Necessity of Consent to Render Surgical Operations Lawful. J. F. Shields, Philadelphia.

35.—See abstract in *THE JOURNAL*, July 29, 1905, page 348.

36. Splenectomy for Myelogenous Leukemia.—Richardson refers to a case in which a splenectomy was done for myelogenous leukemia in 1901. The patient remained well for three years, when typical symptoms of locomotor ataxia set in, to which the patient eventually succumbed. Richardson does not believe that the extirpation of the spleen had any effect on the disease, one way or the other, and that the final break up was the natural course of the disease.

37. Rupture of Intestine.—Campbell reports the case of a man, aged 48, who had a sudden severe pain in the abdomen following a severe lifting strain. Under ether anesthesia the abdomen was opened below the umbilicus in the median line. A peritonitis was present, most marked in the right lower quadrant of the abdomen. On exploring the internal ring of the right inguinal canal this was found enlarged, and a sac present, but no contents. The bowel in this neighborhood was first examined, and here a rupture in the long axis of the gut, large enough to admit a lead pencil, with everted mucosa, was found. In the mesentery underlying this loop was a transverse tear two and one-half inches long. The contents of the bowel had escaped and were escaping; a moderate quantity of blood clot was present, though all active hemorrhage had nearly ceased. No sign of strangulation, bruising, or injury other than the above tears could be discovered. The rupture was closed with two purse-string sutures followed by a layer of straight Lembert sutures, the abdomen was flushed out with large quantities of warm saline solution, and closed without drainage. The patient made a recovery, interrupted only by a slight artificial infection. The rupture was determined to be about the center of the ileum.

38. Management of Certain Critical Cases of Intestinal Obstruction.—Elliott finds that the prevalent method of enterectomy with immediate suture in cases of intestinal obstruction is attended with a high mortality due to the changed condition of the distended bowel. He urges that enterostomy with later enterectomy is to be reserved for the patients unable to bear primary enterectomy, and that enterectomy with a temporary artificial anus should be the operation of choice in all critical cases of intestinal obstruction, in which there is an opportunity for resection, whether it involves the large or the small intestine. The improvements in the technic suggested by Elliott are as follows: The upper distended bowel should not be opened until the peritoneal cavity is completely closed. The open ends of the bowel should be stitched together on their mesenteric side before they are fastened into the parietal wound. This will greatly facilitate the later closing of the artificial anus. When the artificial anus is in the small intestine, the partially digested discharge from the upper opening should be collected and injected into the efferent opening. The closing of the artificial anus is a safe operation, and hardly disturbs the convalescence. Up to the present time not enough patients have been operated on by this method to estimate the relative mortality, but cases reported by Elliott, and others referred to, he thinks, suggest the probability of better results than have been obtained by enterectomy with immediate suture.

44. Jaboulay's Anastomotic Button.—As the result of considerable experimentation Beer is convinced that this button has the advantage of being easily and very rapidly introduced, without making a large incision in the bowel. On the other hand, it has the disadvantages that it divides and tears the incision, that its halves must be driven home with great force, and that it frequently becomes firmly fixed in the anastomosis and is not eliminated. In advanced carcinoma cases, especially in very feeble patients with gastric cancer, the saving of time by the use of the Jaboulay button may be life prolonging, while the fact that it may not be passed is of little or no consequence. To emphasize its usefulness in this field in this type of cases, Gayet reports only 79 per cent. mortality in the last 41 cases of gastroenterostomy for carcinoma ventriculi. The cases in which rapidity of operating is less essential, Beer can not see justification for using the new contrivance.

47. Necessity of Consent to Render Surgical Operations Law-

ful.—According to Shields, consent of an adult patient in good mental health is sufficient to relieve the surgeon of liability in all classes of cases. In the case of insane patients, the surgeon should have the person legally declared a lunatic, if time permits, and have the consent of those legally in charge of the lunatic. If the urgency of the case does not permit such delay, the consent of those directly in control of the lunatic and the "consent" of the lunatic, if possible, should be secured. In all cases of sudden and critical emergency, the law will imply consent or justify the surgeon's act by implied license. This is true as to all individuals, adults or minors. In the case of minor children, consent of parent and child, if possible, should be obtained to protect the surgeon against litigation. Under the age of 14 years the parents' consent is especially necessary to protect the surgeon against litigation and error of judgment. Over the age of 14 years the consent of the child, in serious cases, would appear sufficient.

Alienist and Neurologist, St. Louis, Mo.

November.

48. An Early American Description of Astasia-Abasia. C. F. Taylor, New York.

49. Case of Unusual Sexual Precocity. H. M. Rich, Detroit.

50. Fright Etiology as a Basis for Damages. J. G. Klerman, Chicago.

51. Relations Between Physical Diseases and Mental Disorders. L. W. Weber.

52. Pathology of Epilepsy. M. R. Hughes, St. Louis, Mo.

53. Mikoseptic Adolescent Survivals in Art, Literature and Pseudo-Ethics. J. G. Klerman, Chicago.

52. Pathology of Epilepsy.—Hughes attempts to show that each epileptic stage has a distinct pathology, and the entire category or classification of epilepsy, including the psychical varieties, has one common pathology or gross structural change, and that this structural change, whether idiopathic or organic, has to do largely with the movements of the centrifugal and centripetal mental forces as we find them in the psychical equivalence of epilepsy, dual consciousness, obliviousness and allied states of mental eclampsia.

Annals of Otolaryngology, Rhinology and Laryngology, St. Louis, Mo.

September.

54. Frontal Sinusitis.—Diagnosis, Treatment and Results. C. G. Coakley, New York.

55. Intranasal Route in Operating on the Nasal Accessory Sinuses. W. A. Wells, Washington.

56. Results of Operations by Way of the Maxillary Route for Combined Disease of the Maxillary Antrum, Ethmoid Labyrinth and Sphenoidal Sinus. T. P. Berens, New York.

57. External Operation for the Relief of Ethmoiditis. L. A. Coffin, New York.

58. Further Experience with Radical Operations from Frontal Sinus Disease. W. Prenderhal, New York.

59. Two Successful Cases of Obliteration of the Frontal Sinus After Repeated Operations. H. H. Curtis, New York.

60. Inflamed Denticulous Cyst Simulating Abscess of the Antrum of Highmore, Caused by an Odontoma. W. H. Haskin, New York.

61. New Operation and Instruments for Draining the Frontal Sinus. E. F. Ingals, Chicago.

62. Address of the President of the American Laryngological, Rhinological, and Otolaryngological Society. F. C. Cobb, Boston.

63. Observations in Two Hundred Cases of Mastoid Disease with Operations. E. B. Sprague, Providence, R. I.

64. Tinnitus Aurium and Hallucinations of Hearing, or Relation of Ear Disease to Auditory Hallucination of the Insane. W. S. Bryant, New York.

65. Meniere's Complex of Symptoms—With a Criticism on Quincke's Lumbar Puncture Treatment and an Account of the First Recorded Case Treated Successfully by Hypnotic Suggestion. T. W. Parry.

54. Frontal Sinusitis.—Coakley's paper is based on a study of 58 cases of acute frontal sinusitis. The diagnosis, treatment and results are discussed in detail. Of the 58 patients, 17 had both the frontal sinuses involved, while 41 had only a single sinus, the right 22 times and the left 19. Of the 41 cases of unilateral frontal sinusitis, the antrum showed clear on transillumination 7 times and was not irrigated. In the 34 cases in which there was a shadow on the face on the affected side, the antrum was irrigated, and pus washed out in each case. Of the 17 cases of bilateral frontal sinusitis, both antra were irrigated, owing to imperfect transillumination, and pus found in every case. In 13 of the 34 unilateral cases, the antrum was irrigated but once, the shadow growing less and disappearing after from three to seven days. In the other 21 cases, the original shadow was darker, and the antrum was irrigated two or three times, oftenest in a girl of 16, who was irrigated every other day for two months. The 17 patients

with bilateral fronto-maxillary sinusitis, all had their antra irrigated more than once. The antrum was, therefore, involved in 51 of the 58 cases. Ethmoiditis was considered to be present when considerable swelling was found in the region of the bulla and posteriorly. In 47 cases the swelling was marked and ethmoiditis considered present. In 26 cases the sphenoid was involved, as determined by irrigating the cavity. In the 17 bilateral frontal cases, both sphenoids were involved in 8, the right sphenoid in 2 and the left in 3, making 13 cases in all. Of the remaining 13 cases complicating the 41 unilateral frontals, the right sphenoid was involved 8 times and the left 5 times. So far as known, only 1 patient among the 55 had a return of the disease, accompanying an attack of the gripe. The average duration of treatment was nine days, the shortest four days. One patient was under observation for two months on account of an associated acute maxillary sinusitis, the frontal sinus discharging for five weeks at least, and possibly a little longer. Coakley says that patients suffering from acute frontal sinusitis should remain indoors and be given such drugs as would ordinarily be used in abating the general infection, as, for example, influenza, of which the sinusitis is but a complication. Opium and morphia are contra-indicated. External applications of moist heat, by cloths wrung out in very hot water, always prove agreeable, giving great relief. Occasionally cold applications in the shape of ice cloths or an ice bag to this region will produce the same results. Cold, however, is not usually so well borne as heat. The internal local treatment employed consisted of the establishment of drainage and irrigation with adrenalin, cocaine and saline solutions. The external operative treatment employed consisted of opening into the frontal sinus through the anterior or inferior wall.

61. **New Operation for Draining Frontal Sinus.**—In performing this operation Ingals first introduces a small silver canula and washes out the frontal sinus with a 50 per cent. solution of the commercial solution of peroxid of hydrogen, warm, immediately following this with a warm saturated solution of boric acid. He then injects into the sinus, slowly, from five to ten minims of the following solution which trickles down about the canula and anesthetizes the field of operation:

| | | |
|-----------------------|----------|-----|
| R. Atropine | gr. 1/10 | 006 |
| Strophanthini | | |
| Suprarenalin, aa..... | gr. 1/5 | 012 |
| Olei caryophylli..... | m. iiii | 2 |
| Acidi carbol. | gr. x | 66 |
| Cocain hydrochl..... | ssss | 6 |
| Aque dest., ad..... | 5i | 30 |

He then introduces his steel pilot, which is no larger than an ordinary probe, and, with the patient in the sitting position, administers chlorid of ethyl for about a minute; this insures complete anesthesia. The handle is removed from the pilot and a hollow burr (which has already had a flexible sheath slipped over it and been attached to the chuck of a dental engine) is slipped over this pilot into the nares and up to the lower end of the naso-frontal canal. Gentle continuous pressure is then made, the electric current is turned on, and within a few seconds the frontal sinus has been entered. Before turning on the power Ingals says that one should note just how much of the proximal end of the burr protrudes from the nostril, otherwise he will not know when it has passed into the sinus and may waste time in the futile effort to make it go farther. One can not recognize the drilling of the bone either by sound or by the feeling of the instrument. As soon as the sinus has been entered the burr is withdrawn and a packer, the end of which has been bent to the same curve as the pilot, is introduced, and through it the frontal sinus is packed and dried by a strip of absorbent gauze an inch in width, which is left long enough to stop any bleeding. The gauze is then withdrawn and a similar strip, saturated with 95 per cent. of carbolic acid or with a 10 to 20 per cent. solution of chlorid of zinc is introduced in the same way and allowed to remain a few minutes. The packer is then withdrawn about an inch to insure thorough cauterization of the whole canal, and this strip is then drawn out, through the packer, so as to avoid cauterizing other parts of the nasal cavity. A gold tube, the upper end of which has been sprung together and covered with a gelatin capsule, is then slipped on

an applicator and passed up the canal until stopped by its lower flaring end. A probe is now pressed up against the end of the tube and the applicator is withdrawn. When the gold tube has been placed in the canal it is crowded off the applicator, as the latter is withdrawn, by pushing the spiral tube upward. Within half a minute the gelatin capsule will dissolve and the end of the tube will have opened out so that it will be retained. The operation is then complete. Ingals gives the patient a small sprig with a bent nozzle, by which the frontal sinus can be washed out or medicated. Little or no attention by the surgeon will be needed afterward.

Journal of Nervous and Mental Diseases, New York.

November.

- 66 Study of Dementia Praecox. D. O. Hecht, Chicago.
 67 *Early Ocular Signs of Dementia Paralytica. W. A. Holden, New York.
 68 Psychasthenia: Its Clinical Entity Illustrated by a Case. S. I. Schwab, St. Louis, Mo.

67. **Early Ocular Signs of Paralytic Dementia.** Holden records the ocular conditions of 70 paralytics in an early stage of the disease, showing how far pupillary disturbances may be of value in diagnosis. Each pupil was measured with the pupilometer while the other eye was covered, thus excluding any consensual contraction. The shape of the pupils was perceptibly irregular in 51 patients, or 70 per cent. Inequality of the pupils was found in 32 patients, or 45 per cent. The sensory pupillary reflex was absent in 61 patients, or 87 per cent. The direct light reaction was perceptibly sluggish in one or usually both eyes in 15 patients, or 21 per cent. The direct light reaction was entirely wanting in one or usually both eyes in 20 patients, or 28 per cent. The convergence reaction was sluggish in 6 patients, or 9 per cent., in all of whom the light reaction was sluggish or wanting. The size of the pupils ranged from 1.5 to 5 mm., and in 37 patients, or 55 per cent., one or both pupils were smaller than the average size for the patient's age and refraction. Among the 20 cases in which the light reaction was lost, in 7 cases one or both pupils were 4 mm. or more in diameter, but it is likely that they had been small earlier in the disease. Holden believes that in true, uncomplicated paresis there is early in the disease almost constant absence of the sensory reflex, in half the cases irregularity of the pupils, in nearly half inequality of the pupils, in more than half abnormally small pupils, in a fifth of the cases loss of light reaction, in another fifth marked sluggishness of light reaction, and in a few of those with diminished light reaction a diminution of convergence reaction also.

Journal of South Carolina Medical Association, Charleston.

November 21.

- 69 Surgery of the Kidney. C. M. Rees, Charleston, S. C.
 70 A Plea for a Simpler Materia Medica and More Rational Medication. R. E. Mason, Charlotte, N. C.
 71 Operative Treatment of Concomitant Amblyopic Squint. E. F. Parker, Charleston.
 72 *New Operation for Tubo-Ovarian Abscess. A. E. Barker, Charleston.

72. **New Operation for Tubo-ovarian Abscess.**—To avoid the danger of rupture of this abscess while it is being dissected out, Baker has devised a method which has enabled him to enucleate six of these abscesses in succession without rupturing any of them. The first step in the operation consists in making a free abdominal incision. The patient being in the Trendelenburg position, the abdominal cavity is carefully walled off with pads. All adhesions are broken up, thus liberating the uterus and abscess from the surrounding viscera. With Bissell's clamp, Baker clamps two or more inches of the broad ligament between the abscess and the side of the pelvis, and with scissors severs as much of the broad ligament as is clamped. This will free and make easy the dissection of the abscess on that side. If necessary, a similar clamp is applied between the uterus and the abscess, including in the bite the Fallopian tube and the broad ligament. After this is severed the abscess can easily be lifted out of Douglas's cul-de-sac without making any undue pressure on the friable walls during the dissection. Baker lays stress on the importance of draining through the vagina if infection should occur before or during the operation, also of putting the patient in a half-sitting position to favor drainage and to prevent the infection from ascending to the abdominal cavity.

The Laryngoscope, St. Louis, Mo.

October.

- 73 Jurisprudence of the Nose, Throat and Ear. H. W. Loeb, St. Louis.
- 74 *Submucous Cautey—Its Use in the Treatment of Hypertrophy of the Inferior Turbinates. S. J. Kopetzky, New York, N. Y.
- 75 Tumors of the Middle Ear, with Report of Two Rare Varieties. J. C. Beck, Chicago.
- 76 Acute Eustachian Salpingitis. F. H. Koyle, Hornellsville, N. Y.
- 77 Contribution to the Treatment of the Diseased Attic. F. C. Hotz, Chicago.
- 78 Intracranial Pressure a Cause of Headaches, Diplopia and Other Ocular Disturbances. K. W. Baldwin, Philadelphia, Pa.
- 79 New Instrument for Mastoid Surgery. W. S. Bryant, New York.

74. **Submucous Cautey.**—Kopetzky has devised a submucous cautey which lessens the totality of the mass of redundant tissue, but does not destroy the epithelium, and the resulting band of connective tissue is placed so deep in the turbinate body that no interference with the functioning power of the turbinate is brought about. The blade of the instrument is made of an alloy consisting of about 30 per cent. platinum iridium, a mixture of metals which easily and quickly becomes white hot when the electric current is passed through them, yet having sufficient stability to retain its shape and to permit its introduction into the tissues while cold. The cautey end is $1\frac{1}{4}$ inches long, $\frac{1}{4}$ inch broad, and as thin as it is possible to make it without sacrificing rigidity. The handle is made of metal and fits into any standard cautey handle. The field of operation is cleaned of all secretions, and a 4 per cent. solution of cocaine, or a 10 per cent. solution of B. eucain is applied over the hypertrophied tissue, followed by an application of a 1 to 1,000 adrenalin solution. It is not necessary to cause a complete depletion of the blood vessels, nor is it required to completely anesthetize the mucous membrane. If the mucous membrane is tightly contracted down to the bone, the introduction of the cautey knife into the tissues presents difficulties. The tip of the instrument being sharp, its introduction into the tissues causes very little sensation, if any at all. When the nostril is prepared, the instrument is introduced (cold) into the redundant tissue, along the septal side of the turbinate bone, backward, under the mucosa, as close to, and following the septal side of the bone as it is possible to go. In those cases in which the redundancy of the hypertrophied tissue is irregular, or in which the condition exists, which in a recent study of pathologic conditions of the mucous membrane of the turbinate, Kopetzky designates as "état mameeloné," the submucous cautey should only be introduced into the circumscribed hypertrophied portion; the septum and the remainder of the turbinate being protected from the action of the protruding blade end by thin pieces of cardboard of a Bernay sponge. The instrument in position, the electric current is allowed to pass for a few seconds only, and the instrument is at once entirely withdrawn from the nose before it cools. A slight bleeding may occur from the point of entrance. Looking into the nostril immediately after the cauterization one should observe a whitening streak, slightly broader than the blade of the instrument, shining through the overlying strata of the mucosa. This disappears in the course of a few hours. A light dressing of cotton, wet with a 1 per cent. solution of a silver preparation, is then applied to the entire turbinate. The reaction following this procedure is very slight. The results obtained have answered all the indications calling for the use of the cautey. Kopetzky has employed this method in one case of localized hypertrophy of the inferior turbinate and in 10 cases of diffuse hypertrophy of the inferior turbinate. Among the latter one patient gave postoperative evidence of hemorrhage which, however, was easily held in check by adrenalin. In none of the cases was the reactionary coryza as marked as when the ordinary cautey is employed, and in no case was there any evidence of scarring or scabbing except at the small point of introduction of the instrument. This method of cauterization absolutely does away with any chance wounding of the septal mucous membrane and consequent synechia formations.

American Journal of Obstetrics, New York.

November.

- * Etiology of Floating Kidney with Suggestions Changing the Operative Technic of Nephropexy. H. W. Longyear, Detroit, Mich.

- 81 *Pyosalpinx in Pregnancy and Confinement. O. H. Elhrrecht, St. Louis.
- 82 *Considerations on the After Management of Abdominal Sections. W. B. Chase, Brooklyn, N. Y.
- 83 *General Principles in Conservative Pelvic Surgery. J. F. W. Wharton, New York, N. Y.
- 84 *Trivial Pathologic Conditions of the Uterus and Adnexa Considered as Causes of Severe Gastric Disturbances. F. Feder, St. Louis, Mo.
- 85 *Treatment of Prolapsus Uteri. H. E. Hurd, Buffalo, N. Y.
- 86 *Liver Surgery. W. J. Gillette, Toledo, Ohio.
- 87 *The Byrne Operation and Its Application in the Radical Treatment of Cancer of the Uterus. X. O. Werder, Pittsburgh, Pa.
- 88 *Papillary Cystadenoma of the Breast. E. J. Ill, Newark, N. J.
- 89 *Indications for Hysterectomy in Acute Puerperal Septicemia. C. G. Cumston, Boston, Mass.
- 90 *Treatment of the Uterus for Multiple Fibroids Complicated by Pregnancy. J. H. Carstens, Detroit, Mich.
- 91 *Personal Experience in Myofibromata of the Uterus. M. F. Porter, Ft. Wayne, Ind.
- 92 *Unusual Dilatation of Cervical Blood Vessels; Rupture into Uterine Cavity; Hysterectomy; Recovery. F. F. Simpson, Pittsburgh.
- 93 *Primary Bowel Resection vs. Artificial Anus in the Treatment of Strangulated Hernia. J. V. Brown, St. Louis.
- 94 *Intestinal Obstruction. J. C. Morris, Birmingham, Ala.
- 95 *Diagnosis. J. B. Deaver, Philadelphia.
- 96 *Cesarean Section. H. Schwarz, St. Louis.
- 97 *Appendicitis as a Factor in the Diagnosis and Treatment of Abdominal and Pelvic Tumors—Also Complicating Pregnancy. R. B. Hall, Cincinnati.

80, 91, 92, 93, 94, 95 and 97.—THE JOURNAL, Oct. 14, 1905, pages 1191 to 1193.

81, 83 and 96.—THE JOURNAL, Sept. 30, 1905, page 1021.

82, 84, 85, 86, 87, 88, 89 and 90.—THE JOURNAL, Oct. 7, 1905, pages 1108-1110.

Physician and Surgeon, Detroit and Ann Arbor.

October.

- 98 Indications for Operation in Pelvic Disease. R. Peterson, Ann Arbor.
- 99 Fever in Chronic Pulmonary Tuberculosis. H. L. Degel, Ann Arbor.
- 100 Use of Tuberculin as a Diagnostic Agent. R. A. Brown, Ann Arbor.
- 101 Sanatorium Treatment of Tuberculosis. R. O. Beakes, Ann Arbor.
- 102 Home Treatment (Non-Medical) of Tuberculosis. H. N. Bradley, Ann Arbor.

Fort Wayne Medical Journal—Magazine.

November.

- 103 Differential Diagnosis Between Typhoid and Tubercular Diseases. J. S. Boyers, Decatur, Ind.

Texas Medical News, Austin.

October.

- 104 Modern Methods of the Management of Tuberculosis of the Lungs. H. N. Graves, Georgetown, Texas.
- 105 Antistreptococcus Serum per Rectum. B. Cornick, San Angelo, Tex.
- 106 School Life in Relation to Health. P. Zenner, Cincinnati.
- 107 Diagnosis of Typhoid Fever. C. M. Cooper, San Francisco.

November.

- 108 Rheumatoid Arthritis. J. W. Torbett, Marlin, Texas.
- 109 Modern Treatment of Pneumonia. W. J. Mathews, Austin, Tex.
- 110 The County Society. J. C. Larkin, Hillsboro, Ohio.

Virginia Medical Semi-monthly, Richmond.

October 27.

- 111 The Country Doctor. W. S. Christian.
- 112 Death from Peritonitis Due to Gonorrhea. A. Stone, Worth, W. Va.
- 113 Headaches. D. L. Field, Jeffersonville, Ind.
- 114 Treatment of Corneal Ulcer by the General Practitioner. C. P. Jones, Newport News, Va.
- 115 Practical Points in X-Ray Therapy. A. L. Grey, Richmond, Va.
- 116 Operation for Renew of Complete Laceration of the Female Perineum. C. E. Ristine, Knoxville, Tenn.
- 117 Preventive Medicine and Its Relation to Municipal Government and Society. B. C. Keister, Roanoke, Va.

November 10.

- 118 Unusually Large Foreign Body in the Larynx for Five Days. J. Pugh, Richmond.
- 119 Treatment of Summer Diarrhea of Infancy. T. M. Baird, Crewe, Va.
- 120 Autointoxication. D. L. Field, Jeffersonville, Ind.
- 121 Otitomyelitis. A. R. Shands, Washington, D. C.
- 122 Plastic Operations for Acquired Defects of the Lips. J. S. Horsley, Richmond, Va.
- 123 Present Status of Water Analysis in Connection with the Investigation of Typhoid Epidemics. E. C. Leay, Richmond.

November 25.

- 124 Uterine Fibromata Complicating Pregnancy and Labor. E. P. Davis, Philadelphia.
- 125 Line of Least Resistance. P. B. Barringer, Charlottesville, Va.
- 126 Appendicitis. J. Price, Philadelphia.
- 127 Fetal Cases of Smallpox. L. Elliot, Washington, D. C.
- 128 Early and Preventive Treatment of Acute Otitis Media. O. Wilkinson, Washington, D. C.
- 129 Principles of Surgery. S. McGuire, Richmond, Va.

Pacific Medical Journal, San Francisco, Cal.

November.

- 130 Is There Any Limit to Man's Usefulness? W. Anderson.
 131 Late Toxic Effects of Anesthesia. H. D. Power.

Northwest Medicine, Seattle, Wash.

October.

- 132 Organization of the Medical Profession. J. N. McCormack,
Bowling Green, Ky.

November.

- 133 Arteriosclerosis.—History, Etiology and Pathology. W. A. Shannan, Seattle.
 134 Arteriosclerosis, Symptomatology and Course. P. V. von Phul, Seattle.
 135 Arteriosclerosis, Complications and Sequelæ. W. B. McCrory, Tacoma.
 136 Prognosis in Bright's Disease. L. R. Markley, Bellingham, Wash.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

December 9.

- 1 Principles of Treatment of Typhoid Fever. W. Ewart.
 2 Are the Problems of Cancer Insoluble? E. F. Bashford.
 3 Shock. J. D. Malcolm.
 4 Atypical Internal Derangements of the Knee Joint. A. E. Barker.
 5 Acute Arthritis Deformans. B. Abrahams.

4. Atypical Derangements of Knee Joint.—Barker points out that the physician may meet with atypical as well as with typical cases of "internal derangement" of the knee, and that he must be prepared for them. He also insists that with flexion of the joint, combined with external rotation of the knee, it is possible with a good light to discover which of the varieties is present. He has never been obliged to divide the internal lateral ligament, and holds this practice to be most undesirable, as likely to weaken the joint. Further, his own cases—now very numerous—prove that, whatever variety is met with, it is possible to deal with the case without ever allowing the hand or finger to come in contact with the wound or with any part of the joint surface. He believes this to be most important, and that it is one of the reasons why he has never had any inflammatory trouble in these joints which has injured the patients.

The Lancet, London.

December 9.

- 6 Diseases in Relation to Spa Treatment. A. P. Luff.
 7 General Principles of the Therapeutic Inoculation of Bacterial Vaccine as Applied to the Treatment of Tuberculous Infection. A. E. Wright.
 8 Points in Relation to the Administration of Tuberculin. D. Lawson, and I. S. Stewart.
 9 Case of Syringomyelia. A. D. Ketchen.

7. Therapeutic Inoculation of Bacterial Vaccines of Tuberculous Infection.—Wright says: 1. Our first efforts ought to be directed to bringing back the infection to the condition of a purely localized infection. Rest in bed and the adoption of measures for increasing the coagulability of the blood would be the appropriate methods for the achievement of this end. 2. As soon as this first object has been achieved it should be our aim to substitute for the inappropriately adjusted, inappropriately interspaced autoinoculations, which wore down the patient without achieving effective immunization, a system of appropriately adjusted and appropriately interspaced inoculations of a tubercle vaccine. 3. Finally, as soon as a satisfactory anti-bacterial pressure has been achieved in the blood, it should be an object of endeavor, by the regulation of the patient's exercises and by attention to his blood pressure and by taking steps where necessary to diminish the coagulability of his blood, to irrigate in a methodical manner all the foci of infection with a lymph rich in bacterial substances.

Journal of Tropical Medicine, London.

December.

- 10 *New Process for the Microscopic Diagnosis of Tinea Imbricata. U. Paranhos.
 11 *Eucalyptus Oil as a Vermifuge in Ankylostomiasis. L. P. Phillips.
 12 Case of Anihum in Its Earliest Stages. F. C. Wellman.
 13 Notes from Angola (continued). F. C. Wellman.
 14 Spirochete Found in Yaws Papules. F. C. Wellman.
 15 Symmetrical Pendent Keloids of the Ear. F. C. Wellman.
 16 Smallpox Inoculation in India. G. H. Fink.

10. Microscopic Diagnosis of Tinea Imbricata.—Paranhos' method is as follows: The suspected scale is bathed in essence of wintergreen during five minutes. The procedure is repeated with Roux-mixture, absolute alcohol, and ether in equal parts. The scale is placed in the following solution for ten minutes:

| | | |
|-----------------------|------|-----|
| Common ammonia..... | 3i | 30 |
| Distilled water | 3iii | 100 |

After dissociation the scale is spread in the ammoniacal solution by means of a little glass rod on a slide, fixing it with heat and coloring it with the infrachromatic mixture, then freezing it for ten minutes, having beforehand washed the preparations with distilled water.

| | | |
|-------------------------|--------|-----|
| Aniline blue | gr. xv | 1 |
| Carbonated lithia | 3ss | 15 |
| Distilled water | 3v | 150 |

These different ingredients are mixed up by shaking the liquid well, then warming it in a water-bath during a quarter of an hour, and keeping it in a bottle with emery cork during three days and in a stove at 37 C. The reaction is corrected to a weak alkalinity with a solution of acetic acid at 5 per 100. The coloration being thus obtained, the slide is washed in running water, dried with filter paper and treated with neutral cedar oil. It is examined with an immersion objective.

11. Eucalyptus Oil in Ankylostomiasis.—The following is the routine method employed by Phillips: About 6 p. m. the patient takes a saline purge and then fasts all night, and the next morning at 7 takes half of the following mixture:

| | | |
|---------------------|----------|-----|
| Eucalyptus oil..... | m. xxxix | 2/5 |
| Chloroform | m. lii | 3/5 |
| Castor oil | 3x | 40 |

In half an hour's time he takes the other half; he is kept in bed, still fasting, until the bowels act. Should any depression occur after the first half of the mixture is taken, the second half is omitted. In young boys and in feeble, anemic patients the dose is divided into thirds and given at twenty-minute intervals. The dose can be repeated every other day. This effects a considerable saving of time necessary for treatment. As a rule, from three to four liquid stools follow, though sometimes only one. In the first stool there are no worms, and in the first solid stool after the medicine has ceased acting there are also no worms. The worms are expelled alive.

Intercolonial Medical Journal of Australasia, Melbourne.

October.

- 17 Twenty Years of Sanitary Progress in Melbourne. J. Jamieson.
 18 Differential Diagnosis of Appendicitis in Women. J. W. D. Hooper.
 19 *Cyst of Gartner's Duct. F. A. Nyulasy.
 20 Puerperal Sepsis. H. O. Cowen.
 21 Bacteriology of Puerperal Infection. H. C. Lloyd.
 22 Chemical Effects of the X-rays. F. J. Clendinning.
 23 *Lymphadenoma (Internal) Treated by the X-Rays. F. J. Clendinning.

19. Cyst of Gartner's Duct.—Nyulasy's patient, a woman aged 27, complained of constant aching pains in the back, tenderness in the left ovarian region, severely painful, scanty menstruation, worse since her marriage, four years before, constipation, and occasional difficulty in urination. On examination the cervix was found lying up under the pubic arch, and the narrow end of a fluctuating tumor was dipping down behind the cervix, and in close contact with it. A distinct fullness in the right iliac fossa could be detected on palpation, but was not obvious on inspection. An incision three inches long was made in the midline below the umbilicus. A part of the cyst was seen lying snugly in the right iliac fossa. There was a little ascitic fluid surrounding the growth, and its peritoneal covering had a dark, deeply congested appearance. The Fallopian tube and upper part of the mesosalpinx were quite free from the cyst; the abdominal end of the tube was closed. The ovary lay on the anterior and outer part of the cyst, but was not attached to it anywhere. The cyst extended right across, behind the uterus, to the opposite side, and lay in contact with the left broad ligament, which was wrapped firmly round it. The left Fallopian tube was dilated into a hydrosalpinx as large as the caliber of the small intestine; the corresponding ovary was dilated into a cyst the size of a small mandarin orange, and both were bound down by universal ad-

hesions. The uterus was displaced forward by the main cyst, and had also been pushed over to the left as the growth enlarged. On cautiously passing the fingers behind the tumor, as far as they could safely reach, they dipped right down into the pelvis, where many bands of adhesions were felt crossing in an antero-posterior direction, between the pelvic and tumor walls. The tumor itself was situated between the walls of the mesometrium, and was everywhere densely adherent to it. The tumor, moreover, had lifted up the posterior wall of the peritoneum, and there effected some important attachments. The bladder was free from the cyst, which contained two and a half pints of perfectly clear watery fluid. The collapsed cyst was then removed. Many of the adhesions on the anterior part of the cyst were so dense that they could not be torn through with the fingers, but had to be cut with scissors. The right ureter was flattened out into a broad band, firmly attached to the base of the cyst wall, the peritoneum having been lifted off the ureter by the growing cyst. The ureter was separated from the cyst by the aid of dissecting forceps and scissors. This being accomplished, the enucleation of the rest of the cyst was comparatively easy. Having made sure that there was no bleeding into the pelvis, and feeling convinced that there was nothing septic to be feared, either from the growths or the sponges, instruments and ligatures, it was decided to dispense with drainage altogether, and the wound was, therefore, closed in three layers, and dressed with iodoform gauze and a flannel roller bandage. The patient made an uneventful recovery.

21. **Bacteriology of Puerperal Infection.**—Of 159 cases of puerperal sepsis examined by Lloyd, streptococci were found in 83 cases; staphylococci in 30; pneumococci in 17; gonococci in 21; *Bacillus coli communis* in 22; no organism in 21; long bacilli in 20; diplococci, undifferentiated, in 10, and *Bacillus ureogenes capsulatus* in 2.

23. **Lymphadenoma Treated by the X-Rays.**—On examining his patient Clendinnen found a tumor in the abdomen lying to the right of the umbilicus, extending about 2¼ inches upward and downward, and 3 inches to the right. It felt lobulated, was firm, fixed, tender, and it did not move with respiration. It had an apparently communicated impulse. The pulses in the femorals and tibials in both limbs were equal. The abdomen was opened by an incision through the right rectus sheath, the rectus being displaced. The tumor was found to be retro-peritoneal, the posterior peritoneum over it was divided, and the tumor exposed. It consisted of a mass of enlarged lymphatic glands lying along and adherent to the vena cava and aorta. It was considered inadvisable to remove the growths and the incision was closed. The wound healed, and the patient was given an arsenic preparation and x-ray treatments. The tube used was what Clendinnen terms a three-degree tube, situated about 4 inches distant from the tumor, with a current of 3 mp. in the primary. The sittings lasted about ten minutes, three times a week, with the exception of a few intermissions owing to a slight dermatitis. After 27 treatments the tumor had apparently disappeared, and two months later it had totally disappeared.

Revue de Chirurgie, Paris.

Last indexed XLV, page 1382.

- 24 (XXV, No. 9). "De l'arrachement de la tubérosité antérieure du tibia (tearing out). Gaudier et Bounet.
- 25 "Un nouveau procédé commun à la gastrostomie et à la jejunostomie. José Arce (Buenos-Ayres).
- 26 Anomalies de développement des aponeuroses chez les dégénérés. Ch. Féré.
- 27 "Du Cancer de l'antrum pylorique. X. Delore et R. Leriche.
- 28 "Surgery of the Heart. La chirurgie du Cœur. P. Guibal. (Commenced in No. 3.)

24 **Fracture from Tearing Out of Tuberosity of Tibia.**—Gaudier and Bounet review the 15 cases of complete and the 6 cases of incomplete tearing out of the anterior tubercle of the tibia on record. They discuss the various features and the prognosis and emphasize the fact that the restoration to normal of the limb depends on proper treatment. In 17 of the cases medical treatment alone was attempted, but the fine results attained in the 5 cases treated by surgical measures encourage further intervention in this line. The pain of the fracture is always at the exact point of the solution of continuity. In case of incomplete fracture, the swelling takes the

form of a crescent and the ecchymosis extends far downward on the leg. In case of complete fracture with involvement of the synovial membrane, the local swelling is surmounted by a characteristic swelling suggesting an effusion into the joint. The patella generally slides upward from 4 to 10 cm. and is abnormally movable in all directions. Early massage is important in treatment of the incomplete fracture. Hemarthrosis requires operative treatment. In general, reduction of a complete fracture is easy, but in Gaudier's case a silver wire was passed through the ligamentum patellare in order that the necessary traction could be safely exerted. The fractured portion was nailed in place or sutured with wire or held with a Jaccoud double-pointed nail in the various cases reported. After the suture, the leg was placed in a cast for ten days, after which massage and passive movements were begun. Gaudier's patient was able to walk on the twenty-first day after the operation, which was performed thirteen days after the accident. The perfect results after the broken portion was secured with the double-pointed nail and with a wire suture are shown in a radiogram.

25. **Improved Technic for Gastrostomy and Jejunostomy.**—The simple technic described prevents reflux of fluids injected to feed the patient and also prevents the loss of bile or pancreatic juice. The loop of intestine or the stomach wall is fastened in the wound and the seromuscular coat is fastened to the parietal peritoneum only, with from four to six U-shaped, fine, silk sutures, leaving exposed a patch of the wall of the jejunum not larger than 1 sq. cm. at most. The walls of the abdomen are sutured above, still leaving this patch exposed. A Nélaton sound is then worked into the exposed part and pushed in for from 8 to 10 cm. toward the right. The sound is withdrawn after the nutrient fluid has been injected. The sound should be withdrawn very slowly, and if no more than 200 or 300 c.c. are injected at two-hour intervals there will be no reflux of fluids. In the 2 cases described, the results were eminently satisfactory, as also in a case in which gastrostomy was done by this technic.

27. **Cancer of the Pyloric Antrum.**—Delore and Leriche relate the particulars of 8 cases of juxta-pyloric cancer to call attention to the special features which distinguish a malignant neoplasm in the antrum. In every case in their experience the tumor was hard, like pasteboard, not knobby. The first stage of the development of a cancer of the antrum is characterized by gastric troubles, but vomiting is not observed. In the second stage, the symptoms are those of stenosis of the pylorus. The possibility of a tumor in the antrum should be suggested when a woman in the neighborhood of 50, previously healthy, presents certain vague digestive troubles, a little oppression, pains of variable intensity, a burning sensation, and sometimes acid or watery regurgitations. At the same time the appetite suffers, the patient loses relish for meat and fat food, and she grows thin and weak, although still able to keep about. The symptoms may persist about the same for several months or even years. One of the patients described had been a "dyspeptic" of this kind for thirteen years, but there had never been any vomiting. The lesion was found to be very extensive. Another patient had had watery regurgitations every morning for a year. In another patient this stage lasted only three months. The tumor in this case was evidently unusually virulent, as recurrence was observed seven months after resection of the stomach. Pain is frequent in this variety of cancer, presenting the characteristics of hyperchlorhydria. Tardy hyperchlorhydria should be regarded with suspicion. Watery regurgitation is another suspicious symptom. The end of this stage is signaled by the appearance of a tumor, but it is not definite at first and may escape discovery for a time, during which the patient is usually treated with medical measures until the second phase of the malignant disease announces its onset by vomiting. Cachexia rapidly develops and surgical intervention is then too late to effect a cure. Laparotomy performed during the first stage always revealed more extensive lesions than had been anticipated. Delore's experience has convinced him that cancer of the pyloric antrum is, of all gastric cancers, the most amenable to suitable surgical treatment if this is resorted to in time. Its movability, the distance from the duodenum, its slow evolution, all are condi-

tions which favor gastroectomy. The operation should be extensive, with subtotal ablation of the stomach. Before lost only 1 out of the 7 patients on whom he has operated since 1903. Only 1 patient has presented recurrence; a secondary gastroentero-anastomosis was done a year ago, and the patient is still alive. Her condition is evidently much better than if the latter operation had been done at first.

28. **Surgery of the Heart.**—Guibal summarizes the details of 66 cases of injury of the heart in which a suture was attempted, adding 4 more in which the operation was not concluded. The bullet was not extracted in some of the cases, but causes no disturbances. Experience has shown that it is practicable and important to ligate the coronary vessels when they are found injured. Guibal has studied on dogs and rabbits the symptoms of various kinds of injuries of the heart and the best technic for treating them, as he relates in detail. Stab wounds bleed the most, and those inflicted during systole more than those in the diastole, and the perpendicular more than the slanting. A wound in the left ventricle stops bleeding sooner than one in the right. Even the smallest wound in the auricles proved fatal for rabbits. The patients recovered in 26 out of the 66 cases recorded, the proportion of patients saved by prompt intervention being thus 39.3 per cent. Twelve of the patients recovered without the slightest complication. The signs in Lisanti's patient alone suggest a possible aneurism in the heart. The extensive monograph concludes by recommending cardiorrhaphy as liable to save the patients from almost certain death while leaving them with a heart nearly as sound and vigorous as it was before the injury.

Semaine Médicale, Paris.

- 29 (XXV. No. 47, Nov. 22.) *La typhlité ptosique et son traitement par la cucoplicature (inflammation of cecum from ptosis). P. Delbet (Paris).
30 (No. 48.) *Les troubles de la baresthésie (sensibilité à la pression), et leur coexistence avec l'anesthésie vibratoire. G. Marinresco (Bucharest).
31 (No. 49.) La cyanose entérofœne. L. Cheinisse. Review of literature. See page 79 of last volume of THE JOURNAL.

29. **Inflammation from Ptosis of the Cecum.**—Delbet has had a number of patients who complained of disturbances in the region of the appendix and in whom the trouble proved to be the result of ptosis of the cecum while the appendix was found sound. In 3 cases the appendix had been removed on the assumption of appendicitis, but the disturbances persisted afterward. In others he saved the sound appendix from unnecessary removal and it has never given trouble since. The patients are constipated and there is pain in the iliac fossa, which is both spontaneous and elicited on pressure. The pain is more diffuse than in appendicitis, and it is a little higher and outside of McBurney's point. The trouble is essentially generalized paresis of the intestines, most pronounced in the large intestine. The affection is liable to be extremely painful and requires active treatment. Dinting and enemata may give relief temporarily in some cases, but Delbet has found that all disturbances cease when a fold or tuck is taken in the wall of the cecum, turning the fold inward and thus shortening the long bag made by the sagging gut. The cecum is seized with forceps 1 cm. below the mouth of the small intestine, and another forceps is applied on the opposite side. Slight traction on the forceps flattens out the round bag of the sagging bowel, and the part below the forceps is turned up inside the cecum. The straight, horizontal edges left, just below the two forceps, are sutured across with No. 3 catgut. The results of this operation in a case he describes apparently have been entirely satisfactory.

30. **Sensibility to Pressure, Heat, Etc.**—Marinresco groups in four classes the various disturbances in the sensibility noted in pathologic conditions of the nervous system: 1, alteration in all forms of sensibility; 2, abolition of sensibility to pressure or to the vibration of a tuning fork, or to both, with retention of all other forms of sensibility (this is the type of anesthesia to which von Strümpell and Marinresco have called special attention); 3, abolition of sensibility to pain and to heat, with retention of all other forms of sensibility (the syringomyelic type); 4, changes in the sensibility to heat, to contact and to pain, with retention of the sensibility to pressure and to the tuning fork. He is convinced that these various forms of sen-

sibility are transmitted by different sets of conductors. The sensibility of different planes of the tissues is not identical. Pain is not a special sensibility, but rather a defensive reaction. The nerve fibers conducting the different forms of sensibility probably lie close together and may intermingling, while retaining their relative topography, as he shows by a number of illustrations.

Berliner klinische Wochenschrift, Berlin.

- 32 (XLI, No. 42.) *Ueber das Verhalten der Tuberkel-Bacillen an der Eingangsporte der Infektion (behavior at entering point). P. von Baumgarten.
33 *Zur Pathogenese der Diphtherie. R. Scheller.
34 *Weitere Untersuchungen ueber Radium-Wirkung (action of radium). E. S. Loudon (St. Petersburg).
35 *Zur Verhütung des Kindbettfiebers (prevention of puerperal fever). E. Preiss.
36 Ein Zweiter Beitrag zu den Erfolgen einer einmaligen Kur in Karlsbad beim Gallensteinleiden (results of single Karlsbad "gallstone cure"). F. Fink.
37 *Zur Frage des Menstruation-Fiebers tuberkulöser Frauen (fever). E. Franck.

32. **Behavior of Tubercle Bacilli at Entering Point.**—Baumgarten does not believe that we can decide with certainty as to the route followed by the tubercle bacillus in infecting the organism. Only in rare cases of cadaver infection is it possible to trace exactly the mode of entry. In other conditions, study of the localization, size and extent and arrangement of the tuberculous products in the infected human body may render this or that route more probable, but our knowledge is not certain. The lack of positive data imposes the necessity for considering all routes as possible, and consequently adopting prophylactic measures not only against infection from inhalation and from feeding, but also considering congenital transmission and all other possible sources of tuberculous infection.

33. **Pathogenesis of Diphtheria.**—Scheller has made a practice of bacteriologic examination of the mouth and nose of all patients before and after operations on the nose. He has found that diphtheria bacilli can survive longer in the nose than in the throat, and that apparently healthy persons can harbor the bacilli and be a source of infection to others and to themselves if their resisting powers become reduced from any reason. He has often noticed the development of tonsillitis after operations on the nose. Animal experiments confirm these facts. In a recent case, a young woman was to be operated on for the removal of a hypertrophied turbinal, which almost completely obstructed one side of the nose, with resulting headache and a tendency to coryza. As diphtheria bacilli were found in her nose, almost in pure cultures, during the five days before the operation, Scheller did not wish to operate, fearing that diphtheria might develop, although he had never heard of an instance of the kind. The young woman was healthy, except for scoliosis, and insisted on the operation without delay. She returned every day for after-treatment, and the third day exhibited the symptoms of typical diphtheria with false membranes in the throat. After an injection of diphtheria antitoxin the symptoms subsided. It was learned afterward that the patient had been exposed to diphtheria three weeks before the operation. The bacilli had evidently lurked in the nose all this time without causing infection. The operation had increased the disposition to the disease, and infection resulted. This experience suggests that in many cases of throat diphtheria the nose may be regarded as the entering point of the bacilli. Various influences, chemical, mechanical, infections or of other nature, might increase the predisposition, as did the operation in this case, and may start a diphtheria process in a bacilli carrier. The practical lessons from this experience are that persons in the environment of diphtheria patients—who are almost certain to harbor diphtheria bacilli in their nose or throat—should avoid all injurious external influences liable to fan the spark into a blaze. Also that the bacilli should be destroyed by diligent disinfection of the nose and throat, without waiting for them to die off spontaneously.

34. **Action of Radium.**—London has been conducting research with very small amounts of radium, applied for a fraction of a second, to learn the effects of such minimal exposures. He found that the application of 18 mg. of radium, for a quarter of a minute, to the inside of the forearm caused a reddish spot to develop in the course of a few days. The spot grew brown

in time, but shows no signs of subsiding, although two years have since elapsed. In some tests of the action of radium from a distance, he placed 25 mg. radium on top of a cage, 31 cm. high, in which were three rabbits. After two weeks the rabbits' hair fell out, the ears became necrotic, and the spleen, the sexual organs and the nerve elements showed signs of extreme degeneration. The ulcerations on the rabbits' skin always healed over with scar formation. This suggested that connective tissue escaped injury from the action of the radium. This assumption was confirmed by his experience in a case of cancer of the ileocecal valve which had been rendered accessible by a broad opening for an artificial anus, a palliative measure for the inoperable growth. A capsule with 10 mg. of radium bromid was inserted in the artificial anus for twenty-four hours on five occasions during the course of six or seven weeks. The cancer did not seem to be influenced, but the wound over it rapidly healed, the artificial anus closing by the rapid formation of granulation tissue under the influence of the radium.

35. Prevention of Puerperal Fever.—Preiss urges the distribution of circulars to midwives describing the means of avoiding puerperal fever. The midwife must give one of the circulars to each pregnant woman applying to her, and when the birth is reported the official should inquire whether the midwife gave the circular. If not, she should be fined. Preiss gives a suggestion for the contents of such a circular.

37. Fever During Menstruation as Early Sign of Tuberculosis.—Frank announced four years ago that a rise in temperature preceding or during menstruation is a strong presumptive sign of a morbid process somewhere in the body. It points especially to tuberculosis, and if the woman is anemic and thin, with a tendency to sweat and to catch cold readily, the physician will do well to inaugurate antituberculosis treatment or to recommend a sanatorium, superfeeding or a course of cinchamic acid or iron and arsenic. He is convinced that the normal limit of the temperature is 37.5 C. (99.5 F.), measured in the rectum, and that even a fraction of a degree above this is fever. Sabourin and Kraus have also recently pointed out the importance of fever during menstruation as an early sign of tuberculosis. Measured in the rectum, a fraction of a degree above normal may be due to the hyperemia of some inflammatory affection in the adnexa, but, if such can be excluded, then the assumption is in favor of tuberculosis.

Centralblatt f. Chirurgie, Leipzig.

Last indexed XLV, page 392.

- 38 (XXXII, No. 41, Oct. 14.) Zur Resektion des Wurmfortsatzes (appendix). T. Kähler.
- 39 Bullet Wound of Heart. Extraction of Bullet from Rear Wall. Recovery.—Schussverletzung des Herzens, etc. Z. von Mantuffel (Dorpat).
- 40 (No. 42.) Zur Radikal-Operation der Nabelbrüche (umbilical hernia). E. A. Polya.
- 41 Die Radikal-Operation der Hernia obturatoria. M. Sträter.
- 42 (No. 43.) Celluloid als Wundverband (for dressing wounds). A. C. Wiener (Chicago).

Deutsche medizinische Wochenschrift, Berlin and Leipzig.

- 43 (XXIX, No. 44.) Zur Diagnose der Nierenneingeschwülste (tumor in suprarenals). J. Israel.
- 44 Ueber die differential-diagnostische Bedeutung des Agglutinationsfaktors bei Typhus und Paratyphus. L. Zapik.
- 45 Das Gär-Saccharoskop, ein neuer Apparat zur quantitativen Zuckerbestimmung (determination of sugar). II. Citron (Berlin).
- 46 Weitere Syphiliden-Befund bei Syphilis. K. Flügel. Jd. A. Brönnum und V. Eltermann.
- 47 Permanent Changes in Skin After Radium Exposures.—Ueber bleibende Hautveränderungen nach Radiumbestrahlung und ihre Bedeutung für die therapeutische Anwendung der Röntgen-Strahlen. II. E. Schmidt.
- 48 Die intravenöse Salzwasser-Behandlung. Rubens.
- 49 Ueber Wind und Zucht (drafts). M. Herz.
- 50 Prevention of Vomiting in Treatment of Tapeworm.—Zur Verhütung des Erbrechens bei Bandwurmkuren. E. Apolant.
- 51 (No. 45.) Therapie der funktionellen Psychosen. E. Mendel.
- 52 Versuche über die bakterielle Fähigkeit des Serums.—O. Ball.
- 53 Fortschritte in der chirurgischen Behandlung der Darmkrankheiten (progress in intestinal affections). A. Tietze.
- 54 Improvable Removable Plaster Corset.—Vereinfachung des abnehmbaren elastischen Gipskorsetts. K. Gerson (Berlin).
- 55 Aronson's Anti-treptococcum bel 3 Fälle von puerperaler Sepsis. P. Hanel.
- 56 Tones for Picking Up Things from the Floor, etc.—Die Greifschere, ein Beitrag zur Krankenpflege. C. Moeller (Erkner). For persons unable to stoop.

43. Diagnosis of Tumors in Suprarenals.—Israel reviews the lessons he has learned from 9 cases of suprarenal tumor. The

differentiation of a tumor under the costal arch is mainly by exclusion. If the kidney, gall bladder and liver can be excluded, a tumor in the suprarenals may be assumed. A tumor in this region may also be suspected when indications of a malignant affection in the kidney or suprarenals are accompanied by paroxysms of pain and paresthesia in the region of the lumbar plexus, although no tumor can be discovered by palpation. Febrile states under these conditions, with exclusion of other causes of fever, are corroborative evidence. He gives illustrations of his cases, classifying them in five groups, principally according to the palpation findings.

45. Saccharoscope.—Citron's instrument is based on the loss of weight during the fermentation of the sugar in the urine. It is said to be reliable, simple and convenient.

47. Permanent Changes in Skin After Radium Exposures.—Telangiectasia is observed at the edges of the cicatricial atrophic skin after radium as after Roentgen exposures. It appears much more tardily, and Schmidt regards it as a new formation of vessels. He exposed eight spots on his own arm to the action of 5 mg. radium bromid, and telangiectasia developed at each point from four to six months later. The exposures were from twenty to ninety minutes long, and the telangiectasia was proportional to the length of the exposure. At two other points exposed for only five minutes there is still a visible pigmentation and the blood vessels are evidently enlarged. This tardy action of the radium rays interferes with their use for vascular nevus, as the final outcome of a white cicatricial surface, striped and spotted with red, is worse than the original nevus. Finsen treatment is far preferable. Forchhammer has thus cured 49 cases, the smaller nevi vanishing completely and the larger ones showing notable improvement.

49. Wind and Drafts.—Wind is air under pressure, and is experienced as agreeable. A draft, on the other hand, is a current of air under lesser tension than the prevailing barometric pressure. The air is being sucked out of the room, and, therefore, it has an aspirating effect, producing suction, which is experienced as disagreeable. It makes one feel colder than when wind of the same temperature is blowing on the body. Herz has noticed that the skin feels a weak outward draft at times as if cold air were blowing inward.

50. Prevention of Vomiting in Tapeworm Cures.—About fifteen minutes before administering the tapeworm remedy Apolant gives one or two 0.3 gm. tablets of equal parts of menthol and saccharum lactis. This reduces the sensitiveness of the stomach without interfering with the action of the tapeworm-expelling drug.

51. Treatment of Functional Psychoses.—Mendel lays great stress on medical oversight of children whose parents are inclined to be "nervous," if the children display the least tendency that way. Especially before puberty is it advisable to remove the child from the home atmosphere to some family in the country or in a small town living a simpler, more wholesome life. Milk, vegetables and fruit should be the principal diet for such children. In a confirmed psychosis, wet packs, baths and massage should be given a thorough trial in case of insomnia before resorting to drugs. When the patient refuses to eat, a glass of milk or bouillon and crackers should always be left on a table beside the patient's bed. He will sometimes be thus tempted to eat when he thinks no one is looking. Patients who soil themselves should be taken at brief intervals to the water closet, and ingestion of fluids should be restricted. Another point which Mendel emphasizes is that nothing should be said in the hearing of patients with mental derangement that would cause annoyance if repeated to others later. The lack of this caution has led to much annoyance in some instances. He regards opium in increasing doses and then tapering off as the main reliance in melancholia, supplemented by rest in bed and a strengthening diet. He gives opium to a maximum of 1 gm., with injections of oil in case it causes constipation, and a few drops of hydrochloric acid after meals.

Münchener med. Wochenschrift, Munich.

- 57 (LII, No. 42.) Zur Verhütung der nach Intubation und sekundärer Tracheotomie zuwollen sich einstellenden Kehlkopfstenosen (prevention of stenosis of larynx). II. v. Ranke.

- 58 *Heutige Grenzen und künftige Ziele der Asthma-Therapie. G. Avellis.
- 59 *Komplikationen nach Kropf-Operationen (goiter). Reichel.
- 60 *Die venerischen Krankheiten in der Garnison Metz (venereal statistics). M. Müller.
- 61 *Ueber die Verwendbarkeit der konzentrierten Carbolösung zur Behandlung des Skrophuloderma und der Furunkulose (treatment with carbolic acid). H. Vörner.
- 62 Klinischer Beitrag zur Serumkrankheit (serum disease). H. Rosenhaupt.
- 63 *Appliance to Aspirate Secretions from Accessory Cavities of the Nose.—Vorrichtung zum Ansaugen von Sekreten aus Nebenhöhlen der Nase. O. Nück.
- 64 *Origin of Cancer.—Nochmals die Entstehung des Karzinoms. R. Bormann.
- 65 *Camphor Internally in Erysipelas.—Die Pirogoff'sche Kampherbehandlung des Erysipels. Mayer.
- 66 Silver in Treatment of Appendicitis.—Ueber innere Behandlung der Blinddarmentzündung. A. Schmitt.
- 67 (No. 43.) Zur Etiologie der epidemischen Genickstarre (epidemic cerebrospinal meningitis). Mantel.
- 68 Zur Kenntnis der lokalen Eosinophilie. C. Stähli.
- 69 Zur Symptomatologie der Barlow'schen Krankheit. E. Schlesinger.
- 70 Verwendung des Ohrkorpels zum Ersatz von Liddefekten (plastic restoration of lid from ear). A. Birch-Hirschfeld. Id. Elster and Haass.
- 71 *Typhoid Epidemic Among School Children.—Typhnsepidemie unter Kindern. Tischer.
- 72 Fall von Akromegalie (Zerstörung der Hypophysis durch Blutung (destruction of hypophysis by hemorrhage). L. Blehtren.
57. Prevention of Laryngeal Stenosis After Intubation.—It has been von Ranke's experience that stenosis of the larynx after secondary tracheotomy after intubation can be prevented by not allowing the larynx to be excluded from the respiration a moment longer than it is absolutely necessary. He thinks that the stenosis is due mainly to the lack of the normal participation in the breathing act.
58. Treatment of Asthma.—Avellis remarks that internal medicine has washed its hands of asthma since the Leyden crystals have been found to be a consequence and not the cause of the affection. Rhinologists and neurologists also disclaim responsibility in regard to asthma, and the tuberculosis specialists also turn their backs on it. He hopes that more physicians than has hitherto been the case will make a specialty of this disease. The treatment requires a fundamental knowledge of neurology and of neuropathies in general, also a small sanatorium equipped as for nervous diseases with appliances for hydrotherapy, massage, resistance and breathing exercises and air baths, associated with a rhinologic clinic and inhalatorium; in short, a special institution for treatment of non-bacillary lung affections. It would be well, he thinks, if such sanatoriums could be located at different altitudes, so that there might be an exchange of patients to correspond to the climate found best for individual cases. The first attack of asthma should be the warning signal to institute a regular course of training to ward off future attacks, just as the first hemoptysis is the signal for a course at a sanatorium. Several months should be devoted to a systematic course of training in measures to ward off future attacks. The entire mode of life must be regulated to conform to the rules of hygiene, and the respiratory organs should be strengthened by appropriate gymnastics. The patient must also be taught the various measures which have proved effectual in warding off impending attacks, such as counting at each expiration to divert the mind, voluntary modification of the respiratory rhythm, or stimuli applied to the skin, etc. Such training is especially important for children.
60. Venereal Statistics Under Unusual Conditions.—Müller states that the garrison of 24,000 men at Metz is a remarkably high proportion of males to a total population of only 80,000 in the city of Metz. As careful records are kept of venereal disease in the barracks, they allow an unusual oversight of the conditions prevailing in regard to prostitution. The tables show that regulation of prostitutes on the basis of microscopic examination of the secretions has caused a striking reduction in the number of cases of gonorrhea. The proportion of cases of syphilis has not varied materially in the last ten years, averaging about 4 per cent., but the proportion of cases of gonorrhea has dropped from 25.6 to 12.6 per cent. It has ranged from 12 to 12.9 in the last five years. He thinks that the results obtained at Metz speak loudly in favor of systematic microscopic examination of the secretions in the official regulation of prostitution.
61. Concentrated Carbolic Acid in Treatment of Scrofuloderma and Furunculosis.—Vörner declares that he does not know of any method of treatment which can approach in efficiency the application of concentrated carbolic acid. For a small, still hard furuncle he touches the center with the acid. In larger ones he applies the acid with a fine needle or sound introduced into the central hair follicle or pore, inserting it as deep as he can. A single application is enough in most cases, but sometimes as many as eight are required. The application is made only once a day. He describes his experience with it in a number of cases, including two extensive carbuncles.
63. Aspiration of Secretions from Accessory Cavities of the Nose.—Muck presents a little apparatus which resembles a breast pump. A short glass tube fits into the nostril, the outer end connected with a glass bulb reservoir and also with a projecting tube carrying a rubber bulb. A hole in the nostril tube, just above the reservoir, allows it to be closed with the finger during aspiration, but the air can stream in at any moment in case the pressure becomes painful. This method of removing secretions from the nose and accessory cavities has abundantly proved its usefulness.
64. Origin of Cancer.—Bormann analyzes the reasons for the conflicting findings of various investigators in the field of cancer, and remarks, in conclusion, that none of the so-called parasites are found in very small, young cancers. The reason for this is that these so-called parasites are, in reality, the relics of degenerative processes in the cells, and these processes do not occur early in the younger new growths.
65. Camphor Treatment of Erysipelas.—Mayer reiterates that sixteen years of experience with Pirogoff's method of treating erysipelas have only confirmed him more and more in his high opinion of it. He gives, every hour or second hour, 15 gm. triturated camphor, with hot drinks to promote sweating, and the usual external measures.
71. Epidemic of Typhoid Among Children.—The public schools at Deggendorf are attended by 1,009 children. About 200 of the poorer children are given their lunch at a soup house established for the purpose. Two of these children were taken sick, December 10, and staid at home, and about ten days later fifty of the others were also affected in the course of nine days, the sickness proving to be typhoid fever in all. The children lived in different parts of town, with scarcely any communication between the families. This epidemic of typhoid among the children eating at the soup house was fatal in two instances. The total number of children affected was 61, while only 43 adults in town and 31 in the adjoining country were affected during the same winter. No children were affected except those who had eaten at the soup house; the drinking water and milk there were above suspicion. A very few scattered cases of typhoid generally occur every year at Deggendorf.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed XLV, page 1769.

- 73 (LVII, Nos. 5-6.) Relations Between Emotions and Disturbances in Speech.—Das Verhältnis der Affekte zu den Sprachstörungen. H. Gutzmann.
- 74 Influence of Carbonated Baths on the Pulse and Tonus of the Vessels.—Zum Einfluss der Sauerstoffbäder auf Pulsfrequenz und Gefäßtonus. E. Ekgren. (Santor's clinic, Berlin.)
- 75 Influence of Diet and Yeast Treatment on the Putrefaction Products in Urine.—Ueber den Einfluss von Diät und Hefekuren auf im Urin erscheinende enterogene Faulnisprodukte. E. v. Koziczewsky. (Jidd.)
- 76 Elweisserfall and Antipræss (destruction of albumin). P. Deucher (Sahl's clinic, Berne).
- 77 Ueber atypische Leukämien. P. Preis (Lichtheim's clinic, Königsberg).
- 78 Ueber Magen-Atonie und Magen-Chemismus (of stomach). R. Kaufmann (Mannaberg's clinic, Vienna).
- 79 Zur Kenntnis der Adams-Stokes'schen Krankheit. A. Belski (Pskow).

77. Atypical Leukemia.—Preis expatiates on the importance of an early diagnosis of leukemia and allied states in view of Roentgen treatment, which is capable of inducing such pronounced and prolonged improvement that it can almost be regarded as a complete cure. He describes 2 cases of atypical leukemia. The blood picture suggested myeloma, but the affection had nothing in common with that disease. In the

majority of such cases there is lymphatic metaplasia of the marrow of the bones, which is the cause not only of the existing lymphocytosis, but also of the appearance of increased numbers of normal and pathologic cell forms of the myeloid tissue. His first patient was a young man who was suddenly taken sick with pallor, pains in the bones and weakness, with great enlargement of the spleen and lesser of the liver, slight swelling of the glands and retinal hemorrhages, with a high degree of anemia, anemic changes in the reds and preponderance of young forms. The patient died in less than six months. Roentgen exposures of the spleen alone almost entirely banished the leukemia quantitatively about three months before death, while the blood findings became those of pernicious anemia. Before this the blood findings were a mixture of those characteristic of both lymphemia and myeloma. The blood findings in the second patient, a man of 59, also showed the same blending of anemic and leukemic characteristics, but there were no signs of pernicious anemia. The enlarged spleen became reduced in size under Roentgen exposures. The disturbances in this case had been noted for three years, and the patient had both syphilis and malaria in a mild form in his previous history. Preiss regards this case as one of lymphadenoid splenic pseudo-leukemia at first, with gradual formation of lymphonata in the liver and bone marrow and possibly transformation of the disease into lymphatic leukemia. The patient is still under observation.

78. *Atony and Chemistry of the Stomach.*—Kaufmann relates his experiences with 21 patients and with a number of normal subjects in researches on the chemistry of the stomach. His conclusions are to the effect that the figures for the total acidity and for the free HCl, which are given in the text-books as the normal values, are merely the averages. In reality, these values may range under normal conditions from 5 to at least 90 and sometimes over 100 for the total acidity without any indications of disturbance in the stomach functions. The figure representing the free HCl may likewise range normally from zero to at least 2 or even 3 per thousand. He then reports examinations of over 100 patients with various stomach affections which have demonstrated that cramps, acid eructations, acid vomiting and "heart burn" are more frequent when the stomach acidity is above the average, but still within normal range. Some other factor must be involved to produce the troubles of so-called hyperacidity besides merely the increased amount of the secretion. Whenever a patient is encountered presenting the symptoms of hyperacidity or other chemical gastric trouble the physician must seek for the second pathologic factor which forms the connecting causal link between the chemical findings and the subjective disturbances. In many cases this second factor is obvious in some ulceration, erosion or similar lesion. In these cases the time-course of the secretion may be regarded as the second concurring factor. In other cases, by far the most frequent, atony of the stomach will be found to be this mysterious second factor. Among 53 cases Kaufmann found pathologic dilatation of the inflated stomach in all but 18. When the acidity is a little above the mean average, then the patient presents the symptoms of hyperacidity; when it is a little below the average, the symptoms are those of subacidity or atony. In every instance the disturbances were cured when the musculature of the stomach had regained its normal muscular strength, no matter whether the acid secretion had been reduced to the mean average or not, or still persisted in the extremes first noted. In none of his other patients could any anatomic lesion or atony of the muscles be discovered. Such cases always proved to have been cases of neurasthenia alone, as all disturbances ceased when the neurasthenia had been cured by appropriate measures. The objective findings in these cases were normal. The secretions had not been abnormal, but the stomach mucosa was abnormally sensitive. This hyperesthesia forms the connecting link between the secretory anomalies and the stomach troubles. Better than by dieting or drugs to act on the secretions, such patients are cured by bromids, "water cures," hydrotherapy and forced feeding with coarse, mixed foods. The figures representing the acidity may persist unmodified, but the patients are cured as their stomach loses its excessive excitability.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PREVENTION AND CURE OF TUBERCULOSIS. A Collection of Articles of a Popular Character on the Subject of Tuberculosis. By S. A. Knopf, J. H. Hollister, D. A. Wilson and Others. Compiled by J. R. Long. Cloth. Pp. 246. Price, \$1.25. Denver: H. M. Brinker. 1905.

DIAGNOSIS OF TUBERCULOSIS OF THE LUNG. With Special Reference to the Early Stages. By K. Turban. With an Introduction by Sir D. D. D. M.D., J. L. F.R.C.P. Translated by E. C. Morland, M.D., B.Sc. Cloth. Pp. 135. Price, \$2.00. New York: William Wood & Co.

LECTURES ON CLINICAL PSYCHIATRY. By E. Kraepelin. Authorized Translation from the Second German Edition. Revised and Edited by T. Johnstone, M.D. Second Edition. Cloth. Pp. 352. Price, \$3.50. New York: William Wood & Co.

THIRD ANNUAL REPORT OF THE COMMITTEE ON THE PREVENTION OF TUBERCULOSIS OF THE CHARITY ORGANIZATION SOCIETY OF THE CITY OF NEW YORK FOR THE YEAR 1904-05. Paper. Pp. 55. New York: Charity Organization Society. 1905.

A SYSTEM OF MEDICINE. By Many Writers. Edited by T. C. Albright and H. D. Rolleston. New Edition. Revised Throughout with Additions. Vol. I. Cloth. Pp. 1209. Price, \$5.00. New York: The Macmillan Co. 1905.

A TEXT-BOOK OF THE DISEASES OF THE EAR, NOSE AND THROAT. By D. P. St. John Rooss, M.D., LL.D., and B. Douglas, M.D. Cloth. Pp. 621. Price, \$3.00 net. New York: The Macmillan Co. 1905.

HANDBOOK OF THE MEDICAL SOCIETY OF THE BOROUGH OF THE BRONX. With Constitution. By-laws and Members of the Society. October, 1905. Cloth. Pp. 44. New York: W. H. Kahrs, M.D.

THE DISOCIATION OF A PERSONALITY. A Biopsychical Study in Abnormal Psychology. By M. J. Prince, M.D. Cloth. Pp. 569. Price, \$2.80 net. New York: Longmans, Green & Co. 1905.

PRACTICAL SANITARY SCIENCE. A Handbook for the Public Health Laboratory. By D. Sommerville, B.A., M.D. Cloth. Pp. 310. Price, \$3.00. New York: William Wood & Co.

CLINICAL OBSTETRICS. By R. Jardine. Ninety-nine Illustrations and a Colored Plate. Second Edition. Cloth. Pp. 609. Price, \$4.75. New York: Reban Co. 1905.

NEW PATENTS.

Recent Patents of Interest to Physicians:

- 805339 Syringe, Joseph J. Brin, Chicago.
- 805009 Making hydrochloric acid. Willis E. Everett, Tacoma, Wash.
- 805074 Invalid's table. Charles E. Kemp, Williamsport, Pa.
- 804874 Hydropneumatic syringe. Joseph W. Nassauer, Richmond Hill, N. Y.
- 805025 Pasteurizing apparatus. Niels F. Nissen, Copenhagen, Denmark.
- 805443 Water-soluble vaselin. Friederich Boas, Cannstatt, Germany.
- 805948 Container for ligatures, etc. Fred Evans, Summit, N. J.
- 805851 Medicinal injector. Natusius J. Goldfarb, Dusseldorf.
- 805795 X-ray tube. John O. Heinze, Jr., Lowell, Mass.
- 805959 Astigmatic cabinet. George E. Holmes, Lockhaven, Pa.
- 805560 Germicidal cake. Simon N. Kohn, Cleveland, Ohio.
- 805805 Comb and couch and invalid chair. Ezra Loose, Jonestown, Pa.
- 805826 Vaginal irrigator. Maxwell Vidaver, New York.
- 806447 Intra-urethral applicator. Benjamin C. Abernethy, Orlando, Fla.
- 806090 Hot-water bag. Leo Allenberg, San Francisco, Cal.
- 806615 Pencil preparation. Julius Altschul, Berlin, Germany.
- 806403 Abdomen-depressing means. Abbie G. Du Pail, Allegheny, Pa.
- 806126 Artificial hand. Harry L. Fello, Zion City, Ill.
- 806660 Making concentrated formic acid. Max Hamel, Grunau, near Berlin, Germany.
- 806482 Obesity belt. Silas H. Moore, New York.
- 806188 Medical powder applicator. David W. Rees, Needles, Cal.
- 806296 Invalid chair and tractor therefor. Ida W. Schmidt, New York.
- 806580 Pressure. Warren C. Smart, Sterrett, Ind. T.
- 806205 Inhaler. W. D. Stearns, Detroit, Mich.
- 806306 Fountain syringe. Charles A. Tatum, New York.
- 807365 Water bag. Anton C. Eggers, New York.
- 807406 Surgical appliance. John C. Eggers, New York.
- 807160 Surgical appliance. Robert T. Foote, New Rochelle, N. Y.
- 807169 Rectum supporter. Edward H. Ulzbee, Roadhouse, Ill.
- 806976 Fumigating composition. John R. Inskeep, Gallon, Ohio.
- 807292 Snuff cup. John E. A. Gushel, New York.
- 807299 Vibrator for medical use. David T. Marshall, New York.
- 807124 Vaginal glass applicator. Maurice B. Pearlstein, New York.
- 807203 Chemical chart. Charles D. Poore, Minneapolis, Minn.
- 807127 Hair cleaning, drying and medicating comb. Emory R. Powers, Los Angeles, Cal.
- 807098 Limb appliance. Arthur M. Valentine, Janesville, Wis.
- 807427 Artificial leg. John T. Ance, New York.
- 807595 Syringe. John C. Blair, Louisville, Ky.
- 807657 Abdominal appliance. Sidney H. Burns, New York.
- 807597 Respirator. George T. Carpenter, Chicago.
- 807667 Biological purification of liquids. Wm. F. Dunbar, Hamburg, Germany.
- 807723 Catamenial sack. Joseph Griffith, Springfield, Ohio.
- 807673 X-ray tube. Emil Gundelach, Gehlberg, Germany.
- 807469 Invalid's commode. Wm. A. Hardy, Louisville, Ky.
- 807468 Sanitary drinking apparatus. Freeman S. Hunter, Bedford, Ind.
- 807964 Apparatus for producing ozone. Wm. P. Rice, Chicago.
- 807640 Non-fumigating hydrochloric acid. Isaiah L. Roberts, Brooklyn, N. Y.

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Original Articles

THE PATHOLOGY OF THE KIDNEY.

SOME GENERAL CONSIDERATIONS.

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BOSTON.

There are few organs in the body in which both structure and circulation are so complex as in the kidney. There is some variation in the size of the kidneys, depending on the life of the individual. The increased exercise of function as in potatoes is accompanied by increased size. The congenital anomalies are chiefly those of position and do not especially influence either in structure or function. In the congenital absence of one kidney we find in the other practically the same tissue arrangement, but the amount is doubled. In no other secreting organ do we find such differentiation of structure as that represented by the glomeruli and tubules. It is possible to think of the tubules not only as glandular secreting organs with a remarkable differentiation of epithelium in different parts, but as serving simply as the excretory ducts of the glomeruli. No other organ in the body has precisely the same character of vessels or the same circulation as the kidney. The blood supply to the organ is enormous. Landergren has estimated that in a minute's time under the action of strong diuretics the amount of blood which passes through the kidney is equal to the weight of the organ. That is, an amount from four to nineteen times as great as the average supply of the other organs. Regarding the vessels of the glomeruli as capillaries from which they differ, however, in several respects, the blood pressure within them must be high, because they spring directly from arteries of relatively large caliber. The pressure outside them is low because the space about them is protected from tissue pressure by the capsule. In the interior of the tubules there prevails normally the same low pressure, the circular wall of the epithelium preventing the action of tissue pressure. While it is true that the secretory pressure is usually low, various pathologic conditions show that the secretion can take place against greatly increased pressure. After passing through the glomerular vessels the blood again enters a series of long capillaries. How numerous these capillaries are can only be appreciated by the study of the injected kidney. From the capillaries the blood enters into numerous thin walled veins in which the pressure is low, and current slow, the pressure having been almost obliterated by the two capillary systems which intervene between the arterial pressure and the veins. The tendency of foreign cells, and, in certain cases bacteria, to accumulate within the veins is due to the slowness of the current.

There is a marked capacity for repair of injury in the kidney and but little capacity for perfect regeneration of tissue. The general law of the inverse relation

between high differentiation of structure and capacity for regeneration holds good in the kidney, as does also the law that capacity for both regeneration and repair diminishes with age. After extirpation of one kidney the remaining organ fulfills the function of both and does this by increase of tissue by growth. Epithelial cells become larger and more numerous, tubules larger and longer, and glomeruli larger, but after the completion of development there is no new formation either of tubules or glomeruli. The embryonic development of the kidney is delayed until some time after birth. The completion of development is readily recognized by the absence of embryonic glomeruli. The study of the kidneys in a large series of children who died of diphtheria showed embryonic glomeruli constantly present at two years and rarely present up to the sixth year.

The physiologic function of both kidneys is the same. The activity of secretion depends on the rapidity of blood flow through the organ, and on the activity of the renal epithelium. There seems now little doubt that there is a differentiation in the secretory function of the kidney in that the water of the urine comes chiefly through the glomeruli and the solids chiefly through the epithelium of the tubules. It is also true that certain portions of the tubules differ in function. The rapidity of blood flow through the kidney is regulated both by the general arterial pressure and by the varying degrees of dilatation of the renal arteries. Under normal conditions the kidneys discharge from the body the products of tissue waste represented chiefly by urea. They regulate also the concentration of the blood; their activity is excited by an increase in blood volume due to an increase of water. Under conditions of disease they remove from the body certain abnormal soluble substances, whether these are introduced from without or formed in the body as the result of defective metabolism or by the action of bacteria.

The kidney, like the other tissues of the body, shows various impairments of structure in old age, consisting in destruction or degeneration of the secreting structure, accompanied by increase in connective tissue. In the interpretation of these senile changes we are confronted with the usual difficulty of determining how much they are due to interference with circulation from the constantly accompanying arterial disease, and how much to the gradual wearing out of tissue. To these causes must certainly be added the accumulated effect of slight lesions with the constantly increasing inability of repair. These slight lesions, though of themselves relatively unimportant, may gradually increase the initial damage by interfering with the circulation or in other ways. Under normal conditions, aside from the imperfectly understood cases of physiologic albuminuria, no albumin appears in the urine. Its presence is usually an indication of damage to the glomerular epithelium. Although such cases are rare, it would seem possible in a purely focal inflammatory lesion of the

pyramids for an albuminous exudation to enter the tubules. How dependent the presence of albumin is on damage of the glomerular epithelium is shown in cases of the common acute non-suppurative interstitial nephritis of the infectious diseases. A high degree of this leading to marked changes in the tissue may be present without any involvement of the glomeruli and without albuminuria. The published cases of acute nephritis without albuminuria are probably of this character. The epithelial covering of the glomerulus is probably easily damaged and easily repaired.

The most easily understood lesions of the kidney are focal in character and due to the presence of bacteria in the tissue. The infection may be either hematogenous, the bacteria entering from the blood stream, or urinogenous, the bacteria entering from the urinary passages. The latter affections may be either ascending, from the bladder and ureters, or descending from a focus in the cortex. Bacteria often pass through the two capillary systems and lodge in the veins of the pyramids. This is particularly the case in hematogenous infections by the staphylococcus aureus. In this connection comes the question of the passage of bacteria through the intact epithelium. Experimentally this has not been shown to take place. It is true that in certain of the infectious diseases, notably in typhoid fever, bacteria are found in the urine, but it has not been shown in these cases that the kidneys are intact or that the bacteria come from the kidneys. That the kidneys may be injured by interference with the circulation is also evident. The pressure in the veins of the kidney is low and the exit of blood must be interfered with by obstruction in front, as in chronic passive congestion. The kidney is also damaged by obstruction of the urinary outflow. The damage here results both from the effect of the increased pressure within the tubules and on the epithelium and from the interference with the circulation produced by the increased tissue pressure within the kidney and the increased pressure in the pelvis. It is not possible to consider arterial hyperemia of the kidney as a pathologic condition. The blood supply of the kidney is regulated by the activity of the organ. That the activity may be excited and the blood supply increased by the presence of substances in the blood which are excreted by the kidney is evident, and also that such substances may damage the organ by injuring the epithelium of glomeruli and tubules and the endothelium of the blood vessels. The hemorrhages which are frequently found in connection with acute toxic hyperemia are due, not to the increased pressure, but to endothelial injury.

How the varying degree of damage to the kidney which constantly accompanies diffuse arteriosclerosis is brought about we do not know. These changes consist in degeneration and destruction of parenchyma and increase in interstitial tissue.

It is generally accepted now that the interstitial change is secondary to the damage of the parenchyma. There is no evidence in favor of a general fibrosis or independent increase of connective tissue in arteriosclerosis. There is, of course, in arteriosclerosis interference with the circulation, loss of regulatory power of arteries, increased arterial pressure, the injurious effect of substances in the blood due to deranged metabolism elsewhere, and the constantly increasing effect on the kidneys themselves, of their impaired action. It is probable that the condition in the kidneys is due to the combined effect of a great many factors rather than to any single one.

The greatest difficulty in understanding the pathology of the kidney is found in the acute, subacute and chronic diffuse lesions of the kidney not due to alterations in the flow of either blood or urine, nor to the immediate action of bacteria.

The acute interstitial non-suppurative nephritis gives the least trouble. It is found in acute infectious diseases, notably in the acute exanthemata, and consists in the presence in the blood vessels and interstitial tissue of the kidney of cells belonging to the lymphoid series which are formed in the bone marrow, spleen and lymph nodes, and which are brought to the kidneys by the blood. They accumulate in the renal veins, pass from these into the interstitial tissue and proliferate actively in both places. To what their accumulation in the renal veins is due, whether to an attraction exerted by the kidney or to the mechanical conditions of the circulation, I do not know. Unless the cell accumulation is so great as to interfere with the circulation or nutrition they need not give rise to any interference with function, though usually degenerative changes in the kidney due to the toxins of the disease accompany the interstitial changes. These cells never accumulate in the capillaries of the glomeruli, but are found to a slight extent in the capillaries of the cortex and chiefly in the veins of the pyramids.

Degeneration of the epithelium of the kidney varying in character and in degree is the most common condition found in all cases of diffuse nephritis. It is often exquisitely focal, affecting groups of tubules. It often shows a remarkable selection. Thus the degeneration which is constantly found in diabetes only affects the cells of Henle's loops. In cases of diphtheria I have found hyaline degeneration with extensive cell destruction confined to the proximal ends of the convoluted tubules. The degeneration may vary from such slight alterations of protoplasm or nucleus up to complete necrosis. The injured cells, entire or in fragments, may be desquamated and make their appearance in the urine. The degeneration may be the only change or be accompanied by extensive alterations of structure. If the degeneration does not affect the glomerular epithelium it may not be accompanied by albuminuria. Extensive degeneration may produce but little change in the microscopic appearance of the kidney.

Of the more severe lesions of the kidney due to the diffuse action of soluble substances, one group may be separated in which the lesions in the glomeruli are the most obvious condition. Severe lesions of the glomeruli do not occur alone, for they are all of such a nature as to interfere with the circulation in the glomerulus, and as the circulation of the kidney demands that the chief mass of its blood must first pass through the glomeruli, any interference here is felt in the remainder of the organ. The glomerular changes are varied. One of the most interesting is the obstruction of the vessels by peculiar hyaline thrombi, which Flexner interprets as being formed by agglutinated red blood corpuscles. This condition is rare, and I have found it most often in cases of staphylococcus septicemia, but the most marked case was in a kidney from acute plague which was sent from Manila. The most common cause of the glomerular affections I believe to be acute infections. Some organisms seem to be more inclined to give rise to them than others. They are found in the acute exanthemata, and are due, not to the specific agent of the disease, but to the organisms of the secondary infections. We have had a number of cases of glomerular nephritis, in which

the accompanying infection was acute endocarditis, due to the pneumococcus. The condition is not due to the direct action of bacteria, but to the action of toxic substances produced either by the bacteria or by the tissues. The glomerular affections may be acute, subacute or chronic. Clinically, they are usually accompanied by edema, the relation of which to the nephritis is imperfectly understood. The chronic cases lead to a small, fatty rather pale kidney with an irregular surface, to which the capsule does not cling closely.

The other form of chronic nephritis (chronic diffuse, chronic interstitial nephritis), slow in process, marked by slow destruction, affecting all parts of the kidney, but the glomeruli least and usually secondarily, with a marked increase in connective tissue, which of itself increases the damage, is most usually accompanied by arteriosclerosis.

The disease is composite; not one organ, but many are affected. The determination of the inter-relation of renal disease with defective metabolism, bacterial poisons, vascular and cardiac disturbances, dropsy and edema, lowered resistance to infections, must continue to be one of the paths along which investigation and experiment leading to exact knowledge must follow. The possibility of the production in animals of renal diseases, offering much similarity to those of man, which has been shown, is sure, by giving a field in which investigation can be more exact, to lead to advance of knowledge.

A question of great interest from both the clinical and pathologic point of view is that of the origin of tube casts. I think it is certain that these may be formed directly from the cells of the convoluted tubules by hyaline degeneration. Balls of hyaline material appear in the swollen cells, which finally break down, and the separate masses fuse together and pass into the lumen. This hyaline degeneration, though common in all pathologic conditions, is most marked in amyloid disease, and in the acute infections in which the highly refractive waxy casts are found. Casts into whose formation fibrin enters may be formed by an inflammatory exudation coming from the glomeruli or tubules. It is also possible that casts may be formed from a change in albumin during its passage through the tubules. The first two methods of formation are certain, though they will not account for the casts in all cases. The granules in the granular casts I think always come from the partial or complete disintegration of epithelium.

I present here some of the results which have come from the anatomic study of the cases of nephritis taken from the autopsies of the last ten years at the Boston City Hospital. The autopsies are carefully carried out, all organs are described and weighed and cultures made. The description embraces both the macroscopic and microscopic conditions, and the sections are preserved for future reference and control. The routine microscopic examination embraces the kidneys, liver, spleen, heart, lungs, pancreas and lymph nodes, and is extended to all pathologic conditions found outside of these organs. In going over these autopsies I have in many cases rejected the autopsy diagnosis on referring to the preserved sections, particularly in cases in which chronic interstitial nephritis was diagnosed. If the diagnosis of chronic interstitial nephritis is made in all cases which show some degree of atrophy of parenchyma and increase in interstitial tissue, few individuals over 50 escape it.

The diagnosis must be made from a consideration of the extent, the degree and the diffuseness of the lesions. I have only considered those cases as chronic interstitial nephritis, in which there was diffuse atrophy of the cortex, generally associated with decrease in weight of kidney, adhesion of capsule and irregularity of the surface. Glomeruli, as well as tubules, are affected, the main lesion being degeneration with atrophy. It is seldom that all parts of the kidney are equally affected. Enormously hypertrophied glomeruli and tubules are found along with those which have undergone atrophy, and the anatomic examination will not enable us to say to what degree this compensating hypertrophy has restored function. That it may do so seems apparent from the frequency with which the condition is not diagnosed clinically.

In the ten years there were 80 cases of chronic interstitial nephritis; 33 in females, 47 in males. Four of the cases were under 20, the youngest being a child of 2 years, in which there was a combination between acute non-suppurative interstitial and chronic interstitial nephritis, the condition following scarlet fever. The heart in this case was hypertrophied, weighing 165 grams. But little importance can be attached to the age, owing to the rarity of autopsies on children. Taken as a group, the cases show a considerable degree of heart hypertrophy. The cases are included in which the hypertrophy was accentuated by causes outside of the kidneys. In the 33 females the average weight of the heart was 412 grams. There were four marked exceptions to the hypertrophy. In one, aged 48, the kidneys with advanced interstitial atrophy weighed 165 grams, and the heart 275 grams. In one the heart weighed 200 grams, the kidneys 180 grams; in one there was typical interstitial with marked atrophy and death from uremia, the kidneys weighing 110 grams and the heart 260 grams; and in a case, aged 65, the heart weighed 260 grams, with kidneys weighing 210 grams. The males showed about the same degree of heart hypertrophy, the average weight of the heart in the 47 cases being 494 grams. Here also there were exceptions. In one case in a large individual the heart weighed 390 grams, and the kidneys, in which the lesions were of high degree, weighed 165 grams. Two of the cases of males without heart hypertrophy were senile with atrophy of all organs, and in another case the renal lesions were not of great degree. There were four hearts of over 700 grams, and in six others the weight was over 600 grams. Without exception in both males and females, the largest hearts were given by the combination between arteriosclerosis and chronic interstitial nephritis in large and well-nourished individuals. There is a close association between arterial disease and chronic interstitial nephritis. Which of the two conditions should be regarded as the primary and which the secondary, or whether they should both be regarded as parts of a whole can not be determined by anatomic investigation. It is certain, however, that the conditions can exist separately. Among the cases many can be selected which show both a high degree of arteriosclerosis involving even the renal arteries with but little change in the kidney and *vice versa*. The extreme degrees of atrophy in renal tuberculosis show no relation to arterial disease.

Closely associated with chronic interstitial nephritis are the cases of amyloid infiltration. The amyloid may be limited to the glomeruli and the different vessels or it may be more generally deposited. It may occur in

kidneys as simply superadded to chronic interstitial changes or it may be the predominant lesion. With it there is always associated degeneration of epithelium, marked by presence of fat and hyaline, and a varying degree of atrophy. In the extreme degree of amyloid infiltration characterized by a small pale kidney with irregular surface, no tissue approaching normal character may be found. The most of the glomeruli are converted into completely amyloid masses, and all the tubules belonging to them are atrophied and replaced by connective tissue. The amyloid kidney is in one way separated from chronic interstitial nephritis, and that is by the absence of heart hypertrophy. Thirty-six cases of amyloid infiltration of the kidney were found, seventeen in females and nineteen in males. The average weight of the heart in females was 269 grams and in males 320 grams. In the females there were two cases in which some degree of heart hypertrophy was found. In one case there was extensive arteriosclerosis, chronic interstitial nephritis with amyloid and in the other case arteriosclerosis with slight amyloid confined to the glomeruli. In the males there was one case of hypertrophy, the heart weighing 525 grams. In this there was arteriosclerosis with aneurism and an osteomyelitis, to which the amyloid infiltration was probably due.

There were twenty-two cases of subacute and chronic glomerulonephritis. In this form of nephritis the lesions are certainly primary in the glomeruli and consist in changes which must interfere with their function by means of the cell degeneration and the occlusion of vessels. The term chronic parenchymatous nephritis, which is that generally used to designate the condition, is less descriptive of the lesions than is the term chronic interstitial nephritis, descriptive of atrophy with increase of connective tissue. It is difficult to estimate the relation of this lesion to heart hypertrophy, owing to the frequency of the association of heart lesions which in themselves should be regarded as causes of hypertrophy. Excluding such cases, the weight of the heart in males was 433 grams, denoting a considerable degree of hypertrophy, though much less than in chronic interstitial nephritis. There is one form of glomerulonephritis to which I wish to call attention. It consists in homogeneous thickening of the walls of the vascular tufts of the glomerulus, thereby narrowing the lumen. It may affect all the vessels or occur in patches, and may lead to complete obliteration of the entire glomerulus or of single groups of vessels. The thickened walls do not give the reaction of connective tissue in staining. The thickening is not due to the presence of demonstrable fibers. There was nothing in the histories of the individuals nor in the associated lesions to throw any light on the condition.

Acute glomerular nephritis (acute parenchymatous nephritis) was found in thirty-two cases, twenty-two male and ten female. The acuteness of the process was judged by the prevailing cellular character of the lesions and the absence or slight development of connective tissue. I have elsewhere called attention to the frequent association of this lesion of the kidneys with pneumococcus infections, particularly with acute pneumococcus endocarditis. In the numerous autopsies on acute croupous pneumonia only in two cases was there the complication of acute glomerular nephritis. Why this, the most frequent form of pneumococcus infection, should so rarely be accompanied by nephritis I do not know. Next to the pneumococcus the frequent associated infection is with the streptococcus pyogenes.

Cultures of the kidneys in these cases show the presence of the infecting organisms, but they can not be regarded as directly causing the lesions. The lesions are too diffuse to be regarded as produced by direct bacterial action, and when organisms are found on microscopic examination they are not associated with the lesions. None of the cases of typhoid were complicated by nephritis. Of all of the acute infectious diseases, acute endocarditis is most frequently accompanied by this most serious form of nephritis.

One of the most interesting forms of nephritis is the acute interstitial non-suppurative form. It has nothing to do with chronic interstitial nephritis, for this has no acute form, but is the result of a slow, progressive disease. Acute glomerular nephritis passes into the sub-acute and chronic form, and probably mild degrees are recovered from. Acute interstitial non-suppurative nephritis consists in the accumulation in the interstitial tissue of the kidney of large cells belonging to the lymphoid series which are brought to the kidney by the blood. The cells are generally in foci situated beneath the capsule, around the glomeruli, and just above the pyramids. Only in the most extreme cases is there a diffuse infiltration of all parts of the kidney. There may be very considerable lesions without producing any easily recognized changes in the microscopic appearance of the kidneys. When the lesion is very pronounced and diffuse, the kidney is greatly enlarged, the capsule is tense, the markings are obscure, the tissue pale, succulent and resembles the section of a lymph node in lymphatic leukemia. The largest kidneys I have found were 480 grams in a child of 3 years; 300 grams in a child of 5 years, and 250 grams in a child of 4. The chief interest in the condition of the kidneys is that the cell infiltration is not secondary to injury or degeneration. It may exist with normal epithelium. The glomeruli are never affected. The large cells, prelymphocytes, are formed in the bone marrow, spleen and lymph nodes. They enter into the blood and seem to be mechanically held in the slow capillary and venous circulation. It is evident that they migrate through the wall and proliferate both within the vessels and in the interstitial tissue, as is shown by the numerous nuclear figures in these places. Polynuclear leucocytes are only found among them when there is associated necrosis. There were found twenty-eight cases with this condition. All were in cases of diphtheria or scarlet fever, with the exception of one case, that of croupous pneumonia. I have elsewhere called attention to the frequency of acute interstitial nephritis in diphtheria and smallpox and discussed the origin of the cells.

The study of the pathologic anatomy of the kidneys has thrown but little light on the essential nature of those acute and chronic diseases in which lesions of the kidneys form a part of the pathologic process. It early led to a classification of the lesions and to a nomenclature which was intended to be expressive of their nature and histogenesis, but which is not. Even the term nephritis has come to mean merely a diseased condition of the kidneys. The anatomic study has led to a better appreciation of the extraordinary complexity of chronic disease and to a recognition of the interrelations of affected organs.

There are certain conclusions forced on one by the careful routine examination of the kidneys in a large number of autopsies. Probably the most important is that the lesions of the kidneys are only part of a whole. Almost invariably there are lesions in other organs

sometimes of the same general character as the lesions in the kidney, sometimes of a different character. We can not consider kidney disease as an entity. The injuries which are produced in the kidneys are either due to agents which are formed in the body as a result of disease in other organs or they enter the body from without, affecting the kidneys secondarily. Even the simplest lesions due to the direct action of bacteria are secondary to infections elsewhere. The frequency of lesions, especially when the examination is by the microscope as well as by the naked eye, is striking. Apart from the acute degenerations of epithelium which are almost constant in the acute infectious diseases, chronic lesions of greater or less degree are common, and with increasing age increase greatly in frequency and in degree. It is probable that we rarely pass through an acute infection without some injury being produced in the kidneys. When the injury produced is of such a character that perfect repair can not take place the evidences of it will remain. Slight injuries may produce no impairment of the renal function and there may be no means of clinical recognition by the usual tests of albumin and casts. Provided the injury leads to complete destruction of glomeruli and tubules with consequent absence of function in the part affected, as in the case of an infarction, neither casts nor albumin may appear in the urine, though the remaining tissue be insufficient for the work of the organ to be accomplished. On the other hand injuries which have not led to complete destruction and where the injured tissue functions, though imperfectly, will be accompanied by the clinical evidence of albumin and casts. The presence of albumin and casts may simply mean that a part, and often a very small part, of the tissue is functioning imperfectly, though the whole amount of renal tissue and function may be ample. Anatomically it is not uncommon to find casts in a few tubules connected with foci of injury, the remainder of the tissue being perfectly normal. Comparing clinical reports of routine urine examinations with the results of routine necropsies, it often appears that too much importance may be attached to the presence of albumin and casts, though they always mean injury of the organ. Too much importance can not be attached to the results of urinary examination directed to the ascertaining of kidney sufficiency. In cases of acute interstitial nephritis of high degree with compression of tubules and destruction of epithelium, the routine clinical examination has often given only the common "slight trace of albumin" and the anatomic examination showed no casts in the tubules. In such cases it has seemed sure that the function of the kidney must have been impaired, though the clinical examination gave no evidence of it.

It is difficult to understand the association of lesions, which is shown at autopsies. Thus we know that in the great majority of cases atrophy of the kidneys will give rise to heart hypertrophy. The average weight of the heart in chronic interstitial nephritis is far above the weight of the heart at corresponding ages. But there are many exceptions even to the association between renal atrophy and heart hypertrophy. We may find a great degree of heart hypertrophy associated with slight atrophy, and a great deal of atrophy with but slight change in the heart. It is not uncommon to find in hydronephrosis or in chronic pyelonephritis or in chronic renal tuberculosis extreme renal atrophy with a heart of normal size. The absence of heart hypertrophy in renal atrophy is particularly striking in the case of

amyloid disease. Even the association of such conditions as renal atrophy and arteriosclerosis, which, in the absence of amyloid, seem sure to lead to heart hypertrophy, fail to produce this if any degree of amyloid infiltration be present. At present we are without any acceptable hypothesis in explanation of this association, and the number of hypotheses which have been advanced serve to show our ignorance. The same thing is true in regard to edema. We are accustomed to think of the association of certain forms of nephritis, particularly those involving the glomeruli, with edema, but the exceptions are almost as frequent as the rule.

It is not probable that much light will be thrown on the numerous obscure questions relating to nephritis by anatomic investigations. The work which has been done in pathologic anatomy in chronic disease is imperfect and has consisted chiefly in making artificial classifications and giving these names. The study of the histogenesis of lesions has been fruitful in enabling us to ascertain the general sequence of lesions, but has thrown little light on their causes and interrelations. At an autopsy even under the best conditions it is impossible, in the absence of definite questions, for the routine examinations in every territory to be so fully carried out that they will shed much light on the disease. The questions which are present to the pathologist and which he endeavors to answer in his work are not the same as are presented to the clinician by his study of vital phenomena, and the clinician can not take the observations of the pathologist and seek by them to answer his questions. The observations of the pathologist are directed by a different set of questions. What is needed in the study of chronic disease is not the attempted analysis of numbers of cases and dividing them into groups, but the careful placing of questions by the clinician and pathologist and the thorough study of individual cases by clinical, pathologic, chemical and anatomic methods. The questions should be divided into their simplest components, and the hypotheses derived from study should be tried by animal experiments. The acute infectious diseases seemed more obscure than did chronic diseases before their etiology was ascertained, and even with this and the possibility of simple direct animal experimentation the knowledge which has enabled us to form acceptable hypotheses in explanation of certain acute infectious diseases has come but slowly. Knowledge of chronic diseases which will enable us to form acceptable hypotheses in explanation can come in no other way.

THE RELATION OF THE KIDNEYS TO ECLAMPSIA.*

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The sources of my information for this paper are:

1. Statistics from hospitals and private sources on eclampsia and kidney conditions.
2. The literature on eclampsia and metabolism.
3. Personal observations on urea elimination in pathologic conditions of pregnancy.
4. Experiments on the muscular irritability of pregnant and non-pregnant animals.

From the 54,010 records of births in which I could get at least a few important data concerning the frequency of eclampsia in cases of nephritis, renal irritation and

*Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

toxemia, and the frequency of these conditions without eclampsia, the following facts are shown:

The proportion of eclamptics to births is 1 in 105 cases.

Eighteen and two-tenths per cent. of the eclamptics whose urine was examined just before or after convulsions showed only evidences of "renal irritation" in the urine.

Eighty-one and eight-tenths per cent. showed "nephritis" under the same conditions. "Nephritis" was defined on the circular sent to physicians and hospitals seeking information, so as to include cases showing 0.1 per cent. of albumin and casts, or less marked urinary findings with marked edema of the body. "Renal irritation" included cases with no edema and less marked urinary findings, while "toxemia" included the cases of headache, vomiting, dim sight or abdominal pain (other than labor pain) near the time of delivery.

TABLE 1.

| Figures furnished by hospital or physician. | Total Births. | Eclampsia Cases. | | Eclam. Cases no. Previous Ur in Ex | | Eclam. Cases Sh'w'ng no. Ur in Ex | | Non-Eclam. Cases Showing. | | Three tenses in edema or both | |
|---|---------------|------------------|-------------|------------------------------------|------------------|-----------------------------------|---------------|---------------------------|-------------------|-------------------------------|-----------------|
| | | Primiparae. | Multiparae. | Unclassified. | Later Nephritis. | Renal Irritation. | Unclassified. | Nephritis. | Renal Irritation. | Unclassified. | With nephritis. |
| | | | | | | | | | | | |
| New England hos. 10 yrs. | 2307 | 19 | 10 | | 5 | 0 | | 13 | 36 | 4 | 14 |
| Lynn hospital, 10 yrs. | 413 | 10 | 6 | | | 12 | 12 | 3 | 0 | 1 | |
| St. Eliz. hos. Boston, 10 yrs. | 686 | 5 | 3 | | 5 | | 1 | 0 | 10 | 3 | 21 |
| Mas.-homeopathic, 10 yrs. | 1497 | 12 | 5 | | 8 | 2 | 4 | 1 | 8 | 3 | 11 |
| Bost. Lying In, 10 yrs. | 23521 | 102 | 64 | | 82 | 8 | 25 | 15 | 4 | 18 | 26 |
| Worcester city hospital, 10 yrs. | 1900 | 37 | 12 | | 20 | 8 | 17 | 3 | 2 | 7 | 4 |
| Washington hos. D.C., 10 yrs. | 3014 | 34 | 11 | | | 26 | 9 | 10 | | | |
| B. C. Christ. Philad'lphia, 10 yrs. | 7500* | | | 64 | | | | | 10 | 10 | |
| A. L. Smith, Montreal, 10 yrs. | 1400* | 7 | 1 | | | | 8 | | | | |
| Johns Hopkins, Balt., 10 yrs. | 1818 | | | 44 | | 38 | 6 | 1 | 10 | | 655 |
| J. B. DeLee, Chicago, 10 yrs. | 7000* | | | 44 | | 9 | 35 | | | | 18 |
| C. A. Kirkley, Toledo, Ohio, 10 yrs. | 1100* | 3 | 2 | | 4 | | 1 | | | | 6 |
| Alex. Maternity, Drs. A. Brown & Von Hoffman, 10 yrs. | 1000 | 7 | 3 | | 5 | | 5 | | 4 | 30 | 2 |
| F. Crittenton, same, San F., 10 yrs. | 453 | 5 | 0 | | | 2 | 3 | | 10 | 4 | 1 |
| S. F. Lying In, 10 yrs. | 109 | 0 | 0 | | | | | | 1 | 6 | 2 |
| E. Harrison, 10 yrs. | 267 | 2 | 2 | | | | | 1 | 9 | | |
| A. L. Smith, 10 yrs. | | | | | | | | | | | |
| Brown, S. F., 10 yrs. | | | | | | | | | | | |
| Totals | 54010 | 243 | 119 | 152 | 121 | 192 | 104 | 32 | 35 | 6 | 14899 |
| Totals | | 514 | | 235 | | 171 | | | 920 | | 81 |

*More or less. †San Francisco.

TABLE 2.
SUMMARY SHOWING RELATION OF KIDNEY CONDITIONS TO ECLAMPSIA IN CASES WHERE FULL DATA WAS OBTAINED.

| | |
|---|------------|
| Eclamptic cases with nephritis before or after convulsions. | 228 |
| Eclamptic cases with renal irritation only before or after convulsions. | 51 (18.2%) |
| Eclamptic cases with nephritis or renal irritation before or after convulsions (data not enough to classify). | 127 |
| Eclamptic cases with no record of urinary findings. | 108 |
| | 514 |
| Non-eclamptic cases with normal urine. | 10,360 |
| Non-eclamptic cases with "nephritis". | 196 |
| Non-eclamptic cases with "renal irritation" only. | 767 (7%) |

Of the non-eclamptic cases in a series in which 10,360 had normal urine, there were 196 cases of nephritis and 767 of renal irritation.

The full table shows the marked variations in the frequency with which these symptoms occur in different hospitals—depending probably on the care with which the urines are examined in each place. The column marked "eclamptics-urine recorded negative before convulsion"—is significant. The 4 cases recorded in the Boston Lying-in figures may possibly be accounted for by the careless work of students who do the out-patient work. The Johns Hopkins case is specially referred to by Dr. Little as a case where the only record of urine examination before the attack was the statement "urine negative." Dr. A. Brown's case was one in which the patient's urine was free from albumin a week before the attack. Immediately following the examination, the patient caught a severe cold and had temperature for several days prior to the eclampsia. The urine was not examined again until after the attack. That albuminuria is a more frequent accompaniment of pregnancy than these figures indicate is well shown by the examinations of Little of Johns Hopkins and of Trautenroth. Their results are shown in Table 3.

This makes it clear that the kidneys show the strain of the pregnancy and labor by an elimination of albumin in practically every case. In a vast majority of the cases there is nothing to show that this strain is significant of more than the similar appearance of traces of albumin and occasionally casts in the normal individual after exercise. Darling has shown that albumin enough to coagulate solid on boiling may result in the urine of a previously normal person from the prolonged strain of a boat race, and that practically all athletes show traces of albumin and casts after prolonged effort, even when accustomed to it.

TABLE 3.

TABLE OF STATISTICS SHOWING FREQUENCY OF ALBUMINURIA IN PREGNANCY WHERE THE SUBJECT WAS RECEIVING SPECIAL INVESTIGATION.

| Urine in | Pregnancy. | | Labor. | |
|-----------------------------|-----------------------------|------------------|-----------------------------|-----------------|
| | Little (Johns Hopkins.) 715 | Trautenroth, 100 | Little (Johns Hopkins.) 590 | Trautenroth. 59 |
| Cases | | | | |
| Negative | 48.2% | 50.5% | 37.4% | 14% |
| Albumin | 48.8% | 45.5% | 42.9% | 89% |
| Albumin and casts | 10.1% | 4.0% | 18.3% | 28% |
| Casts, no albumin | 1.9% | | | |

LITTLE (JOHNS HOPKINS) IN SPECIAL SERIES OF 100 CASES.

| | Pregnancy. | Labor. |
|-----------------------------|------------|--------|
| Negative. | 54% | 10% |
| Albumin. | 46% | 89% |
| Albumin and casts. | 14% | 41% |
| Casts, no albumin . . . . . | .... | 1% |

The albumin may mark a pathologic condition of the kidney arising during pregnancy or the exacerbation of an old kidney lesion. The occurrence of albumin in large amount so constantly with eclampsia suggests a dependence of both on some common cause. Trautenroth has shown that the death of the fetus in utero has stopped a marked albuminuria, and Strumer reports a remarkable case of a seventh pregnancy in a woman who had eclampsia in her second and fourth confinements. Her other pregnancies had been normal. At time of admission the urine was scanty and loaded with albumin, both feet edematous, and she had headaches. A milk diet and 15 grains of thyroid extract a day resulted in the disappearance of all symptoms in 9 days, including the albumin. She left the hospital under protest, but was brought back 11 days later, having just had 3 convulsions.

The occurrence of casts far more frequently in the urine of multiparæ than in primiparæ is a strong argument against the renal origin of the eclampsia poison for 80 per cent. of the cases of eclampsia occur in primiparæ, according to German statistics, where the prior kidney condition is more favorable. Lange finds also a common extra-renal cause for a number of the phenomena of the toxemia of pregnancy, particularly the albumin. He shows that the ordinary thyroid enlargement during pregnancy disappears under administration of thyroid, increasing again at the cessation of the treatment. In the 133 cases examined for thyroid changes, 3 were doubtful, 108 showed this enlargement, of whom 2 only had albuminuria. One of these was nephritic, and 1 one developed eclampsia. In the remaining 22 where there was no enlargement, 20 had albuminuria, 16 with casts, and 6 of these developed eclampsia. Lange removed one-fifth of the thyroid in 10 pregnant cats; 2 died in coma 23 and 38 days after operation, 3 had convulsions 23 and 25 days after operation. Of these 5, 3 had albuminuria and fatty changes were found at autopsy in the liver and kidneys. No changes were noted in the other 5 cats during the pregnancy, but, on examination after they were killed, similar changes were found in the organs of 3.

The theory on which eclampsia was first held to be dependent on kidney disease was, of course, this association of albumin with the attacks and the similarity of the convulsive seizures in eclampsia to uremic convulsions. I have tried to make it plain that albuminuria is almost the rule in pregnancy, particularly at the time when eclampsia occurs, and that even severe nephritis and extreme albuminurias occur commonly without signs of eclampsia. Renal insufficiency with retention of toxic waste products, increased by the incident of pregnancy, was the explanation which arose from this conception of eclampsia. Urea naturally held the first place as the toxic agent, as it makes up so large a part of tissue waste and was so long associated with uremia as its cause. Because this view still lingers with some few, I have shown on diagrams the extreme variations in the excretion of urea in 3 cases of pregnancy—the first a case of post-scarlatinal nephritis, with marked edema and an amount of albumin varying from 0.1 per cent. to 1.6 per cent. in the last month of pregnancy and the month after it; the second, a case which had had eclampsia in two previous pregnancies and had a trace of albumin with casts in this pregnancy; the third, a normal case on full diet for comparison. These first two cases were put to bed on a milk diet while these observations were made. The case which had previously had eclampsia also underwent this régime for three periods of 10 days each during the earlier part of her confinement.

CASE 1.—Mrs. W. B. First pregnancy. Scarlatinal nephritis since childhood. Urine found, early in pregnancy, to contain nearly 0.1 per cent. of albumin, with hyaline, granular and epithelial casts. The patient was brought to San Francisco and kept in bed and a diet given her, consisting solely of milk, for 4½ weeks before her confinement and for nearly a month after it. Chart 1 illustrates the gradual increase in the amount of albumin and the decrease in the urine and the urea, and their extreme variation. It shows further the striking increase in the urine and urea after confinement. That pregnancy is a very severe tax on such a case there is no doubt, although this particular patient bore a second pregnancy two years later without having at any time over 0.1 per cent. of albumin. It is a significant point that on the days of free movements of the bowels, when the urine and urea elimination was low, the percentage of albumin increased strikingly, more than doubling on several occasions.

CASE 2.—Mrs. L. (Chart 2). Has twice had eclampsia at 7 months. Her urine at the beginning of the third pregnancy was found to contain but a minute trace of albumin and a few hyaline and granular casts. For periods of 10 days each, during the middle of the pregnancy, the patient was put to bed on a milk diet amounting to nearly 4 quarts a day, and estimations were made of the functional activity of the kidney in quantity of urine and urea eliminated. For a month before the confinement the patient was kept constantly in bed on the same diet. Here again it is shown that the urea relatively and absolutely diminished steadily up to the day of confinement, after which there was again a striking increase in both the total urea-nitrogen and percentage of urea. The patient was delivered without convulsions.

CASE 3.—Normal case. A normal case is charted for comparison. The patient was on full diet (Chart 3).

Two facts are shown plainly:

1. The urea diminished markedly before confinement, even in the normal case. In the other two cases it was reduced steadily for a month before pregnancy to at least one-third the normal amount and on certain days got as low as three grams. Both of these cases belong to the class of renal insufficiency with retention of urea, but both were confined without convulsive manifestations.

2. They illustrate also the fact that after periods of retention the urea is usually correspondingly increased for a time. This has been shown also in hysterical anurias, where again no convulsions follow the long-continued retention of normal end products.

These three cases will serve to show the extreme fallacy of the urea estimations as evidence of the nitrogenous elimination of the patient, for I have no doubt that the feces during these periods contained a relatively increased amount of nitrogen and the urines themselves contained nitrogenous products in increased quantity in the form of ammonia, kreatinin and uric acid, as has been shown by Folin to be the case in normal persons whenever the urea is diminished. Folin shows, further, in a patient of his that had taken extremely little food for several weeks and no food for five days before the examination he made, that in 24 hours only 125 c.c. of urine was passed, and this contained .85 grams of nitrogen, and that only 14.7 per cent. of this total nitrogen was in the form of urea and 40 per cent. of it was in the form of ammonia. Normally 80 to 85 per cent. of the total nitrogen is in the form of urea and 3 to 5 per cent. of ammonia. Folin quotes a still more interesting case from an analysis by Mörrer. This urine contained only 4.4 per cent. of the total nitrogen as urea, with 26.7 per cent. as ammonia. While no particular deductions can be drawn from these cases, they serve to show that the failure of the kidney to eliminate nitrogen in the form of urea has no special significance, that it depends entirely on diet and the amount of nitrogen eliminated in other ways. In my own experiences I have the records of a case of pernicious anemia with chronic diarrhea where for months not more than 5 ounces of urine were eliminated a day, but where intestinal sand consisting of uric acid was eliminated daily in enormous quantities. This diarrhea had gone on for 20 years, and the woman died of pernicious anemia at the age of 72. So much for the influence of deficient elimination of normal end products. I have not gone into the variations in the quantity of kreatinin, ammonia and uric acid, but the conditions under which they increase and decrease in urine in other pathologic states than eclampsia, without causing convulsions, render it most probable that they have nothing to do with this state.

It has never been found that any one of them was consistently increased in the blood of eclamptic cases.

Developments in the study of metabolism brought two new theories of eclampsia in which the kidney played some part. The first was that conditions hold in eclampsia whereby normal end products of metabolism were not formed. The liver notably has attracted attention in this particular. Animals in which the Eck fistula had been produced, thus cutting off the function of the liver of destroying or converting certain toxins, died of severe intoxications. None of the known intermediary

source of this increased toxicity of the blood is the present point in dispute among the legion of investigators of this subject.

I will not review the subject here, but will state simply that the recent work of Schmorl, Dienst and Liepman calls attention to the fact that the placenta of eclamptic cases are commonly pathologic; that there are large communicating spaces found in these placenta; that thrombi of placental cells are frequently found in the maternal veins (although they are found in non-eclamptics also); that the blood of the fetus in eclampsia has a hemolytic

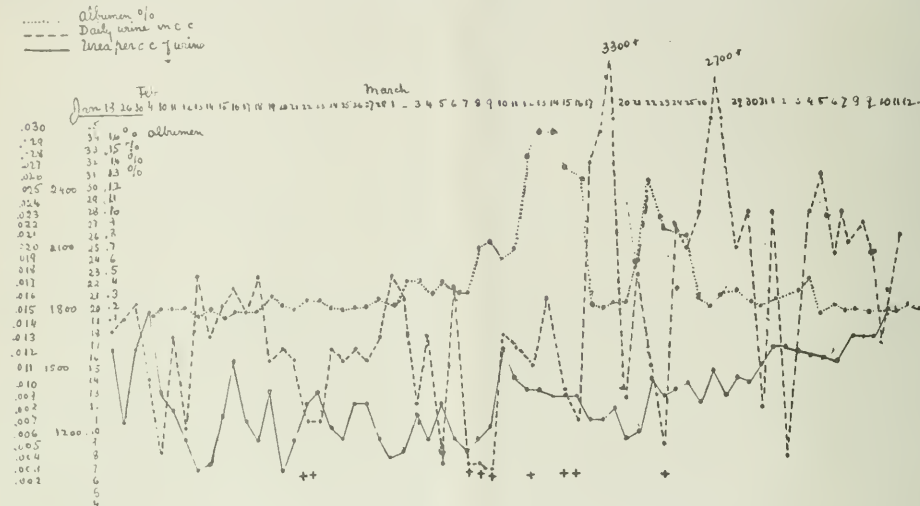


CHART 1.—PREGNANCY IN CHRONIC PARENCHYMATOUS NEPHRITIS.

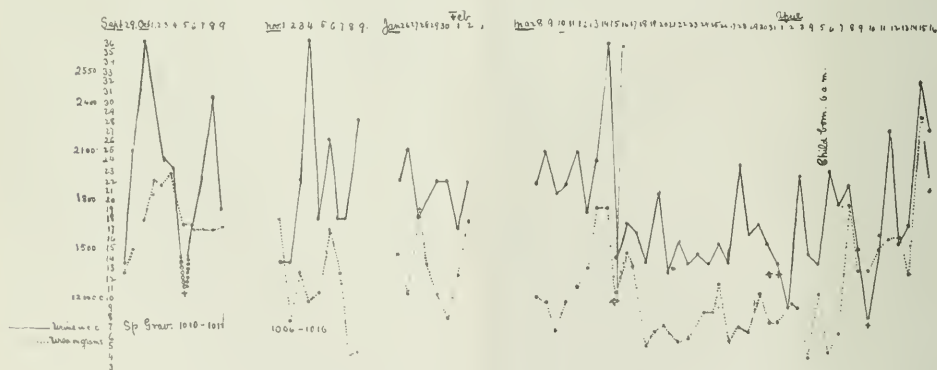


CHART 2.—COURSE OF URINE AND OF UREA IN THIRD PREGNANCY (NORMAL). ECLAMPSIA IN FIRST AND IN SECOND.

products, however, have been found to be increased in the circulation or urine, so the theory has little to support it. The second theory supposes from the analogy of B oxybutyric and diacetic acid intoxication in diabetes, which is itself due to a number of causes, that a similar production of abnormal and toxic end products occurs in eclampsia. Bearing out this theory it has been shown definitely that the blood in pregnancy is more toxic than normal, and that this toxicity is further increased in eclampsia. All attempts to show an increased toxicity to the urine have thus far been unconvincing. The

action on the maternal blood, and, finally, that serum emulsions from dried placenta of eclamptics produce death in animals into whom it has been injected, whereas serum from normal placenta made in the same way is harmless.

Brettaner reports an interesting case bearing on the placental origin of the toxin. A woman of 40 who had had 3 difficult labors, was seized with convulsions without premonitory symptoms at full term. Two children were born, much asphyxiated, but they were resuscitated. The placenta was single; 6 hours later the first

child had a convulsion, followed in the next four hours by four more. Eight hours after birth the second child had its first convulsion, and nine others followed rapidly before death ended the attacks. The mother's attacks ceased with the birth of the children.

This case led me to investigate, as far as I could, the question of the size and number of the placenta in twin pregnancies. It may be a coincidence, but in 3 cases of twin pregnancies, where the mother and at least one child had convulsions, the placenta was single. And in 9 cases obtained from the records of Dr. Adelaide Brown, the only two cases that had no noticeable albumin in the urine during the pregnancy, were cases of double placenta. In the other seven cases, four had a large amount of albumin, three being regarded as critical cases of the nephritis of pregnancy.

In carrying out the investigations as to whether the nervous system of pregnant women was more responsive to stimuli than non-pregnant women, it occurred to me that the experiments of Loeb on muscular irritability might be applied with some interest of pregnant animals in the hope that further light would be thrown on the question of convulsions. Loeb found that if the fresh gastrocnemius of a frog were immersed in a solution of a

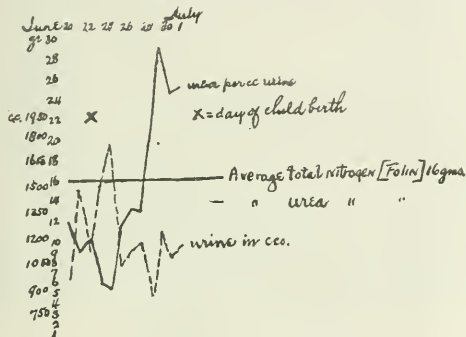


Chart 3.—Normal case for comparison.

sodium salt, the muscle will show immediate rhythmic contractions which cease when the muscle is immersed in a solution of calcium chlorid. He showed further that if the nerve alone be put into one of these salt solutions, the muscle begins to twitch in about five minutes and finally gets into tetanus. If the nerve be taken out of the solution, contractions cease. "Although this seems to indicate that the salts or other ions stimulate the nerve directly, it can be shown that they have only increased the irritability of the nerve, for when the nerve is brought in contact with any solid or liquid body the contractions of the muscles will be resumed." In furtherance of this suggestion I undertook the following experiment: An isotonic solution of sodium citrate was injected into the peritoneal cavity of pregnant and non-pregnant guinea-pigs. No convulsions were produced in either set of animals by small doses, but increasing the dose or the addition of a small quantity of barium chlorid to the sodium citrate caused immediate general convulsions in the pregnant animals and frequently death in doses that did not affect non-pregnant pigs, even of smaller size. The details of these experiments will be published later.

SUMMARY.

1. Albumin is present in fully 80 per cent. of normal pregnancies.

2. Albumin and casts are found in at least 30 per cent. of all pregnancies.

3. There is no reason to suppose that the renal condition thus revealed is the cause of eclampsia.

4. That there is some connection, however, between the albuminuria and the extra-renal cause of the eclampsia is likely, in view of the nearly constant association of the two.

5. It has been shown that neither any normal end product nor any known intermediary product of metabolism is the cause of eclampsia.

6. It is reasonable to suppose that deficient thyroid or parathyroid activity plays a part, at least, in some of the cases of eclampsia.

7. There are probably several causal factors to the separate or concomitant action of which eclampsia seems to be due.

8. The most significant experimental work done up to this time points to the fact that in the placenta are formed the toxic substances which probably are responsible for eclampsia.

9. There is good evidence that these same substances are, in all probability, the causes of the headache, edema, abdominal pain, and particularly the albuminuria present in non-eclamptic and non-nephritic cases.

10. The nervous systems of pregnant women are in an abnormally sensitive condition. Their blood has been shown to be abnormally toxic. There is no conclusive proof of an increased or diminished toxicity of the urine.

11. My own experiments have shown that the muscles of pregnant guinea-pigs can be thrown into convulsion more easily than those of non-pregnant animals.

CYLINDRURIA.*

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BALTIMORE.

(Concluded from page 13.)

CHRONIC INDURATIVE NEPHRITIS. RED KIDNEY. ARTERIOSCLEROTIC KIDNEY.

Of the 104 cases studied, the combined kidneys weighed above 500 grams in 12 per cent.; from 400 to 500 in 18; from 300 to 400 in 31; from 200 to 300 in 33, and below 200 in 6 per cent. It is thus seen that these kidneys averaged much larger than the white kidney just described.

Kidneys Weighing Over 300 Grams.—In 46 of these cases the nephritis formed no part of the clinical picture and was not even mentioned in the diagnosis. The average weight of these kidneys was 412 grams, the cortex measuring from 4 to 7 mm. The urine was normal in amount and specific gravity. Albumin was present but in traces, if at all; the casts were few, absent in 18 cases at times, at least, yet in 10 cases hyaline and granular and epithelial casts were abundant at times. On some days many were present. In 8 per cent. albumin was absent for a time at least. While there is a rough parallelism between casts and albumin, the former are more variable.

In 19 cases the diagnosis was nephritis. The kidneys averaged 390 grams in weight; the cortex measured

*Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

from about 4 to 8 mm.; amount and specific gravity were normal. The albumin was often of fairly large amount, even 0.4 per cent. In 9 cases there was only a trace. The casts were almost constant (yet absent at times in 4 cases), or hyaline and granular.

Kidneys Weighing from 250 to 300 Grams.—In 23 cases the symptoms of nephritis were the subordinate element, in 16 cases the predominating element. The urine was practically the same in both groups. It is interesting to note, however, that the specific gravity ran a little lower than in the preceding group. The albumin varied in amount, and casts of all varieties were present, sometimes in enormous numbers. In the first mentioned group, however, they were often few and only granular and hyaline, while in the latter group waxy and epithelial casts occurred.

Kidneys Under 250 Grams in Weight.—Of the 22 cases in this group in 14 the nephritis was unimportant, while the other 8 were acute exacerbations. The kidneys averaged about 210 grams in combined weight and the cortex measured from 3 to 5 mm. The amount of urine was in all practically normal, also its specific gravity. Albumin was present in practically all cases, usually as a trace, but sometimes a fair amount. The casts were few as a rule, but often many granular and hyaline, and sometimes waxy (in 4), epithelial (in 4), and fatty (in 1) were found. Even in the smallest kidneys the urinary condition was not very similar to that of the small white kidney.

In all these cases an interesting feature is the fact that at the beginning of their admissions or in their previous admission, even back for several years, albumin and casts were practically always present. It will be remembered that in the white variety both albumin and casts were almost a terminal event.

CASES OF CHRONIC NEPHRITIS. NO AUTOPSY.

As is easily seen from the study of cases with autopsy, the condition of the kidney can hardly be suspected from the urine alone. We shall group the following cases by their clinical features.

(1) *Chronic Nephritis.*—In some cases there were no acute symptoms, except perhaps a slight edema. Such are cases especially associated with advanced arteriosclerosis or cardiac disease, which dominates the clinical picture. Of 126 such cases 36 patients died. Of the 90 who left the hospital, in 70 the urine was of normal amount, specific gravity almost normal perhaps slightly lowered, varying inversely as the amount, albumin a trace, often disappearing while in the hospital. The casts were almost all hyaline and granular, and in case the albumin or the casts disappeared while under observation it was in 75 per cent. of the cases the latter. We wish to emphasize this point. In 20 per cent. of these cases more than a trace of albumin was present, and even 1 gram per mille. Very rarely epithelial blood and waxy casts were seen. There was an occasional renal epithelial cell or blood corpuscles and leucocytes found.

Of these 36 fatal cases, on admission the patients presented the following features: In 9 there was a trace of albumin and in 3 none. The casts were hyaline and granular, and in 1 case a few epithelial were found. In 3 cases without albumin or casts at first, the casts appeared later. In 10 cases there was a measurable amount of albumin, as high as 0.2 per cent. In 3 of these no casts were found; in the others granular, hyaline and sometimes epithelial were present. In 9 cases there was over 0.2 per cent. albumin, and, in addition to hyaline

and granular, also waxy casts. On these cases at death the albumin was present in 12 cases in traces. In 4 of these it had diminished toward the end. Casts were hyaline, granular or none, and in any case only a few in number. In 14 cases the albumin at death was measurable but under 0.2 per cent. It had diminished in 3 of these cases and had increased in 2. The casts were few in number, hyaline, granular and in 1 waxy: in 1 case none. In 5 cases there was a final shower of casts. At this time the casts were almost all hyaline and granular, and a rare epithelial and fatty cast. In 8 cases the albumin was over 0.2 per cent., in 1 case 0.7 per cent. The casts were present in vast numbers in 3, yet here they were almost all hyaline and granular, with a few epithelial. This lack of variety of the casts, despite their immense number, would seem to indicate that this shower was due chiefly to vasomotor changes in the kidney preceding death and not to an intensification of the nephritic process.

(2) *Chronic nephritis in arteriosclerotic or cardiac cases* in which the patients had acute symptoms on admission, especially edema. Of these there were 57, 13 of whom died. Of the other 44 cases, in 26 the urine was practically the same as described above, except for a polyuria of even 6 or 8 liters which often occurred during the absorption of the edema or effusion. This was well marked in 35 per cent. of these cases. In 32 per cent. there was more than a trace of albumin. This often diminished or even disappeared while the patient was in the hospital. Of the 13 fatal cases, at the onset there were traces of albumin in 2, a small but measurable amount in 1, and over 0.2 per cent. in 3. There were large numbers of hyaline and granular casts. Toward death a trace of albumin was found in 4 cases; in 2 of these it had been more. These patients had often very many casts of practically all varieties. In 5 cases with more than a trace there was less than 0.2 per cent. albumin, in some many hyaline and granular casts and in 1 case none. In these cases the casts are a subordinate feature and if numerous there are only hyaline and granular found.

AMYLOID DEGENERATION.

Amyloid degeneration may be superimposed on any form of nephritis of which it really forms no part.

In the majority of cases the condition can not be suspected from the urine alone, although given a case with history and physical signs indicating it and the urinary changes may be well explained. Disregarding the clinical features the urine would suggest on the one hand, when concentrated, chronic passive congestion; on the other, small contracted kidney.

The following is the classical description of the urine: It is increased in amount, is pale, clear, faintly acid, of low specific gravity, from 1005 to 1012, and abundant albumin as a rule, with relatively much globulin, and very few casts. This picture of Traube, however, is rare. The albumin may be little or none and the casts may be numerous. They are often fatty. Waxy casts may occur here, but are not at all distinctive. Renal epithelium is rare; red corpuscles extremely so.

Of the 18 cases of which we have notes, in 9 the nephritic symptoms were the unimportant, and in 9 they were the important features. Nine of the pairs of kidneys weighed more than 400 grams; the smallest weighed 210. The cortex varied in thickness from 6 to 9 mm. The amount of the urine presented nothing peculiar; its specific gravity in the majority of cases (9 cases) was lower than normal and in only 3 did it reach 1020.

The amount of albumin varied, in 5 cases being present but in traces, while in 7 cases there was as much as 0.8 per cent.

The casts varied almost as much; sometimes there were many, sometimes few, in 2 none. In only 2 cases were waxy casts abundant, and there were epithelial casts in but 2. In 1 case with 0.2 per cent. albumin the examinations on six days showed but one cast. In the other cases, as a rule, they were few in number. In one case with 0.1 per cent. of albumin a few hyaline and granular casts were present on some days, on other days none.

RENAL ATROPHY.

This condition may be due to insufficient blood supply, to cachexia, to the anemias, and especially to advancing age, the senile atrophy. It is never great in amount. Microscopically sclerosed glomeruli are seen, but there is no great increase in connective tissue. The urine is practically normal and without albumin.

UREMIA.

We have abstracted the histories of 96 cases of nephritis with uremia. Of the 54 cases in which the first symptom of the nephritis dated back less than six months 42 patients died. Of the 35 cases with an old history of nephritis 29 patients died. Senator states that the amount of urine is diminished or there is even anuria; rarely does this fail, and more rarely is there polyuria at the onset.

Of 8 cases of terminal uremia the albumin was increased in all. In 1 case of uremia with a trace of albumin on the day before and the day following, on the day of the convulsions there was a large amount with a great many casts.

Of our 21 non-fatal cases thus diagnosed, the urine was at the upper limit of normal in 18 and was much increased in 3 cases. The increase was at certain periods and alternated with smaller amounts. The specific gravity was not over 1010 in 10 cases. There were traces of albumin at times and periods in which none was found; hyaline and granular casts were also present.

SUPPURATIVE NEPHRITIS.

In these cases we found the ordinary symptoms of acute nephritis with albumin of varying amounts, but only a few casts. In the sediment, however, in one case there were a great many red blood cells and leucocytes. In the other cases these seem to have been very few.

ABSCESS OF THE KIDNEY.

In practically all cases there were microscopically pus cells present, although few in number. The albumin was present in but traces, and was often absent. Either no casts were found, or only a few hyaline and granular present occasionally. The reason may be the same as for the absence of albumin, viz., that for days this kidney may excrete nothing.

TUBERCULOSIS.

In all our cases of tuberculosis of the kidney of which we have notes there was a trace of albumin and a few hyaline and granular casts. On one day in one case there were enormous numbers of casts with a trace of albumin, but later the casts were fewer in number.

CONGENITAL CYSTIC KIDNEY.

The urine in this very rare condition may be normal, or may show the picture of the chronic interstitial nephritis with small, contracted kidney. The amount of urine increases and the specific gravity is low, with

or without a trace of albumin; often blood cells are found. In our two cases the specific gravity was from 1007 to 1013. Albumin was present only as a trace, but terminally even as high as 1 per cent. was found. In one case, in a great many examinations, but one hyaline cast was ever found; in the other case, with 1 per cent. of albumin, no casts were found. Red blood cells and various epithelial cells were quite constant.

CANCER OF THE KIDNEY.

In 4 patients with cancer metastases in the kidney, in 1 without nephritis there was a trace of albumin, and many hyaline and granular and a few waxy casts with renal epithelium. In another case in which the right kidney was practically destroyed the specific gravity of the urine was from 1017 to 1030, a trace of albumin was present on certain days and no casts at any time. In another case, in which the left kidney was practically gone, there were neither casts nor albumin.

"SHOWERS OF CASTS."

Very interesting events are "showers of casts"; by this we mean the sudden and temporary appearance of large numbers of casts in a urine in which before and after few or none had occurred. The albumin may increase or decrease or remain practically the same.

Wagner gave as reason for pure cylindruria that the casts were formed during a transient albuminuria, remained in the tubules, and were later washed out as urinary excretion improved. This would hardly apply to cases in which a long-continued cylindruria is the important feature, and the albuminuria very transitory, but may explain some of these showers of casts which contain none but the varieties formerly present.

They occurred in 34 of our cases with autopsies, and it is interesting that 28 or 85 per cent of these were cases not diagnosed clinically as nephritis since the renal features seemed subordinate.

These cases were nearly all of slight chronic diffuse nephritis, often with scarcely any symptoms, and the sudden increase in casts meant some sudden disturbing element; perhaps a circulatory change, or the elimination of some irritating body.

The best illustration is Külz' sign of oncoming diabetic coma. Suddenly, within twenty-four hours before coma, there appears a quantity of casts in the urine, chiefly finely granular, perhaps unparalleled in clinical experience, which form a huge gross sediment filling the urine glass even one-sixth, and sometimes without albuminuria.

These casts are of characteristic appearance, with a short, broad, delicate outline, pale, and mostly granular and hyaline, with few other formed elements.¹

There are two general varieties of this output of casts: those with the sudden appearance of large numbers of the same kind of cast as was previously present, and due perhaps to the washing out of the tubules. This follows a diuresis, due, for instance, to a salt infusion. Since the casts long in the tubules are often waxy, these may appear for the first time.

The other variety has casts of all sorts present, especially those indicating an acute exacerbation of the existing disease.

These showers of casts are usually terminal events. They may be manifestations of an acute terminal process, with increase in albumin and the other elements of an acute nephritis. This was true in 12 cases, 6 of them

1. Domansky and Reimann: *Ztschr. f. Heilk.*, 1901: Herrick: *Amer. Jour. Med. Sci.*, vol. cxx, 1900.

cardiac and arteriosclerotic patients, one a case of liver cirrhosis, and three febrile cases, typhoid, pneumonia and pleurisy, and two of nephritis and uremia.

Or there may be a final increase of the casts only; this was true of 5 cases, 3 of chronic nephritis and arteriosclerosis, 1 a heart case, 1 a case of cancer.

In 6 cases in the terminal shower casts appeared then for the first time, or at least followed a cast-free period; this was true of a case of gout, in which there were small contracted kidneys, two cases of cancer of the stomach, two of tuberculosis and one of arteriosclerosis with cerebral hemorrhage.

The shower may occur during the course of the disease. Then also it may be an acute exacerbation of nephritis, as in three cases, two of arteriosclerosis, one of typhoid fever with suppurative nephritis. In a case of thoracic aneurism and one of tertiary lues, there was only a trace of albumin present.

The cylindruria may introduce an acute process and then diminish as the albumin appears; as in a case of chronic parenchymatous nephritis. Or the albumin may appear even a month later, as in a case of cancer of the stomach.

If the shower follows a diuresis to any cause, as a salt infusion, the casts probably represent the washing out of casts resting in the tubules, and in nature are similar to those previously present. In one of our cases it followed the man's rising from bed.

In three cases no casts were present immediately before nor after. One was a case of multiple renal abscess and two were cardiovascular cases.

In 25 other cases the casts were out of all proportion to the albumin, which was in some cases absent for a time or during the entire stay in the hospital; in others at most there was but a trace. The general conditions were: Typhoid, 1; pneumonia, 3; pyemia, 1; malaria, 1; sarcoma, 2; tuberculosis, 4; endocarditis, 3; dysentery, 1; cardiac disease, 4; cirrhosis of liver, 3; septicemia, 1; cerebral tumor, 1.

The renal condition was: Acute nephritis, 1; acute hemorrhagic nephritis, 2; glomerular nephritis, 1; subacute nephritis with infarcts, 1; fatty kidneys, 5; congestion, 2; cloudy swelling, 3; metastatic abscess of kidney 1; tuberculosis of kidney, 1. The others were cases of chronic diffuse nephritis; only three of these cases were clinical nephritis.

In 39 of other cases a small amount of albumin was present, but no casts or only an occasional one.

The clinical diagnosis was: Cardiac and arterial sclerosis, 6; cancer of the stomach, 4; thoracic aneurism, 1; tuberculosis, 7; cirrhosis of liver, 2; chronic diffuse nephritis, 3; leprosy, 1; acute peritonitis, 1; acute lobar pneumonia, 6; pernicious anemia, 2; septicemia, 1; congenital cystic kidney, 1; pyelonephritis, 1; typhoid, 2; diabetes mellitus, 1.

The renal diagnosis was: Chronic diffuse nephritis, 24; fatty degeneration, 7; fatty and cloudy degeneration, 1; extreme cloudy swelling, 2; subacute nephritis, 1; acute nephritis, 2; chronic passive congestion, 1; amyloid disease, 1; congenital cystic kidney, 1.

In 19 cases no casts were present and no albumin.

The clinical diagnosis was: Exophthalmic goiter, 1; Hodgkin's disease, 1; tuberculosis, 5; acute lobar pneumonia, 1; lues, 1; colitis, 1; cardiac disease, 2; acromegaly, 1; cancer of stomach, 1; chronic bronchitis, 1; diabetes mellitus, 1; hemiplegia, 1.

The renal diagnosis was: Fatty kidney, 3; cloudy swelling, 3; chronic diffuse nephritis, 9; waxy kidney, 1; chronic passive congestion, 1; arteriosclerosis, 2.

OCCURRENCE OF CASTS.

In nephritis the epithelial casts occur wherever the process is at all acute, yet they occur in other conditions not nephritis. Their occurrence suggests the statement formerly made, yet often denied, that the renal epithelium is easily desquamated, as is any mucous surface from a slight "catarrhal irritation."

The coarsely granular casts occur especially in a subacute process; never in transitory processes.

Fatty casts occur especially in conditions with fatty degeneration of the epithelium, hence especially in the large white kidney of subacute or chronic nephritis, and in our experience in malarial nephritis. They occur also in phosphorus and arsenic poisoning. These two forms of casts are of greater significance than the epithelial, yet even they may occur in simple chronic passive congestion.

Blood casts occur in large numbers in acute nephritis or acute exacerbation of a chronic nephritis; in considerable numbers in subacute nephritis, perhaps always, while even in the most chronic cases one is apt to find a hyaline cast with a blood cell attached.

Blood casts occur also in conditions not nephritis, as in circulatory changes in the kidney, after the exertion of athletes, and in cloudy swelling. They occur much oftener than they are reported. Fibrin casts are very rare, and if they occur at all it is in intense hemorrhagic processes. Pus casts (cells attached to hyaline casts) practically always may be found in any acute nephritic process. Casts composed entirely of pus cells occur chiefly in suppurative lesions; but leucocyte casts, both pure and combined, are much more numerous than suspected; some of them are called epithelial, and most are not recorded. Slight irritations of the kidney cause the output of leucocytes even more frequently than of hyaline casts, as if the first indication of irritation was pus in the urine, then hyaline casts and with them often casts with cells attached (see Gläser, also Lütke).

Waxy casts may occur in amyloid degeneration of the kidney, but not always, and are not best seen there. They are the rarest form, and occur chiefly in subacute nephritis, anywhere where coarsely granular casts occur, never in transitory conditions. In our 36 cases in which they occurred, all but three were cases of pronounced nephritis, chiefly chronic. The suggestion that these casts occur best after a considerable stasis in the tubules is relieved, that is, that they are only very condensed hyaline casts or granular casts which have undergone this metamorphosis, is borne out by the facts that we have seen the most brilliant pictures in cases after decapsulation of the kidney, also in the urine found in the bladder just at death; also that in sections the casts in closed tubules are waxy.

Finely granular casts occur in all cases of chronic nephritis, and are of much greater importance than hyaline.

The truly hyaline casts occur in any condition in which albumin might be expected, always in nephritis, and in the simplest, most transitory circulatory disturbances. They may be the only cast present in the severest form of nephritis, the chronic interstitial with uremia. No better illustration than this is necessary to show how little can be concluded from the presence of hyaline casts alone.

That great group of casts called hyaline, which resemble slightly the waxy, occurs in all forms of nephritis.

The hyaline casts occur oftenest; they may mean lit-

tle or nothing, but they are the first to appear in a pathologic process, and the only ones in some most serious conditions; therefore they must not be overlooked. If but one form of cast is present, it is always the hyaline; when two, hyaline and finely granular. Hyaline casts are always present when any are. Epithelial, coarsely granular, and fatty may occur one or all, but always with hyalines, although the latter may be rather in the background; the same is to be said for leucocyte and blood casts.

CASTS IN NEPHRITIS.

In nephritis the casts run roughly parallel to the albumin; in acute nephritis there are many, in the severe subacute form most, in the small contracted kidney fewest. In all these conditions it is not the lesion as a whole which controls the cylindruria, but rather more the acute element, hence the urinary picture is often the same in the acute exacerbations of chronic interstitial nephritis as in acute inflammation of an otherwise normal kidney; that is, the process, not the disease. The urinary picture we see in the ward is not as a rule the typical one, especially for the cylindruria of almost normal men. For these, the reports of insurance companies are much more valuable, or those of the examination boards for the Army or Navy.

When the individual is admitted to the hospital it is usually with an exaggeration of the renal condition, hence the condition is more that of an acute process which levels all cases to an almost uniform standard.

In the very acute nephritis one sees many hyaline, granular, epithelial, blood and leucocyte casts. In a case in which improvement is rapid, hyaline and granular casts are found; these diminish rapidly in number, then disappear.

If the case becomes subacute, with a large white kidney and with much degenerated epithelial cells, the hyaline, epithelial and bloody casts continue, but in less numbers, and coarsely granular, fatty and waxy casts appear. Then casts are present in greatest numbers.

If the case goes on to chronic nephritis soon hyaline and finely granular casts will be found in varying numbers, which will diminish as the case becomes still more chronic, till in the urine of a small contracted kidney will be found after long search only a few hyaline casts, and perhaps not these; yet even while few, some blood casts are seen. When the casts are absent, Bard says that the inflammatory process has ceased.

At any time an acute exacerbation may cause the appearance of all the features so far as casts go of an acute nephritis. In amyloid disease few casts are the classic feature.

From one urinary examination alone practically nothing can be learned. All the casts of acute nephritis could be found in the acute exacerbation of a chronic case; and also in conditions which are transitory and leave no scar, as some cases of cloudy swelling, fatty infiltration, and chronic passive congestion showing all the features of acute nephritis. The same is true after severe physical fatigue, as observations on athletes, bicycle riders and foot racers show; also for a few hours after an operation on the kidney.

In the diagnosis of chronic nephritis, "it is not so much the casts, their number or variety which are of as much importance as other urinary features, the specific gravity; e. g., and of greater value than this is the history of the case, and of greatest value the physical examination of the patient, the cardiovascular features, etc." (Osler).

NEPHRITIS WITHOUT CASTS.

In cases of very chronic interstitial nephritis there may be periods in which the urine is cast-free. The acute inflammatory element in the process has now ceased, but with a slight disturbance they will reappear.

In other cases of nephritis it is more probable that the casts have disappeared because of alkalinity of the urine, etc., than that they were not present.

Treutlein² found them constantly absent even in typical nephritis in a case of bacilluria. The *Bacterium coli* in the bladder or pelvis of the kidney can cause their disappearance in these cases.

CYLINDRURIA AND NUCLEOALBUMINURIA.

Kossler tried to establish this combination as distinct from albuminuria and cylindruria. These complexes may alternate or the former may precede or succeed the latter. It was present in his cases of "pure cylindruria," in six of which at autopsy only degenerative changes of the epithelium were found, cloudy swelling, fatty degeneration, even necrosis, but no signs of active inflammation. The nucleoalbuminuria and cylindruria of especially epithelial casts occur so parallel that they may be connected; and this might be expected, since nucleoalbumin many think is derived from degenerating cells, and the list of occurrences of nucleoalbumin are those of pure cylindruria as well.

PURE CYLINDRURIA.

To say that there are cases which, from the first, are pure cylindruria, is absurd, since clinical experience shows how temporary is the albuminuria which sometimes is followed by cylindruria; also the wide difference of opinion as to what constitutes a trace of albumin explains many cases.

Among the more acute cases may be mentioned that one reported by Müller in his study of bicycle racers, in which there were many casts, hyaline, granular and epithelial. Cases of pure cylindruria occur in cases of evidently slight irritation of the kidneys, due to foods as asparagus, radishes; to coffee, mustard; to certain drugs, as alcohol, salicylic acid; in certain diseases, especially valvular heart disease, arterio-sclerosis, cancer, certain diseases of the nervous system, inflammatory diseases, acute infections. In these cases the casts are hyaline and granular, but also epithelial.

The observations made by Gläser³ under v. Jaksch's directions are especially interesting. Normal persons from 20 to 30 years of age and not accustomed to much alcohol, and whose urine had been proved normal were given varying but considerable amounts of beer and the centrifugized urine examined when very fresh. Of 106 persons, the leucocytes were increased in 33, and casts were present in 25. Uric acid and calcium oxalate crystals were other manifestations of the irritation of the kidney by the alcohol. No albumin (careful tests made) was present in any case. In only 6 cases was no effect at all evident.

Of the 25 persons with casts, hyaline and leucocyte casts especially were found in 9. In 7 the casts were hyaline, with a few leucocytes attached; in 2 the casts were agglomerations of leucocytes. Epithelial casts were present in 9, in 8 mixed epithelial and hyaline were present, and in 1 pure epithelial casts. A few fatty casts were found. The effect lasted about thirty-six hours. In severer cases albumin was also present.

2. *Milch. Med. Wochtt.*, 1903.

3. *Deutsch. med. Wochtt.*, 1891, p. 1193.

Lüthje⁴ found that medical doses of sodium salicylate always affected the kidneys. Thirty-three individuals were examined. The administration of this drug was followed always by the presence of casts and cylindrurids, leucocytes, often albumin and often epithelial and red blood cells. The effect lasted from fourteen to twenty-one days. Of 204 urine examinations made in 33 cases, in all casts were found and 96 in albumin also. Sometimes with no albumin were many casts. The casts were more especially hyaline and granular, a few leucocytes and epithelial casts were found, never any waxy casts. He thinks the condition a genuine nephritis.

Türk found pure cylindruria after administration of camphor, arsenic, mercury and tuberculin.

Casts alone are more suspicious of nephritis than is albumin alone, but in both cases it is the chronicity of their presence which is of greatest importance.

The presence of casts without albumin in nephritis is not rare if one centrifugalize the urine well.

For the past two years we have paid this point particular attention and examined all in the hospital in which this condition was present, and we find that in many cases of transient albuminuria the cylindruria will outlast the albuminuria. This is particularly true in those cases of chronic nephritis to be attributed to a parenchymatous lesion, that is, a case previously acute. In those cases of arteriosclerosis, that is, the degenerative type, we find that the reverse is more common. In cylindruria not due to nephritis the casts are rare and those found are hyaline as a rule.

In chronic interstitial nephritis there are often long periods of pure cylindruria, but the casts very scarce indeed, and chiefly hyaline, perhaps with a few finely granular. Such are the cases originally reported by Mahomet, Millard, Purdy and Gull, cases of arteriosclerotic kidneys "arteriocapillary fibroid nephritis."

A pure cylindruria sometimes occurs instead of an albuminuria under the conditions usually termed physiologic.

Stewart⁵ reports a group of six or more cases of a type of nephritis which he thinks wholly distinct from the chronic interstitial form. These cases have the symptoms of marked renal insufficiency. He thinks albumin never is present, but casts always, hyaline casts especially, rarely granular, epithelial in two cases, and waxy casts in one case. The cases have not been examined as yet anatomically.

In 3 of 19 cases of erysipelas casts without albumin were found. In 38 per cent. of these cases casts or albumin, or both, were present (Pollatschek⁶). There were in one case albuminuria and casts during the six days of fever, and then pure cylindruria during the succeeding six. The other two cases presented few casts, no albumin.

In cases of eclampsia, casts alone may be present after a very slight transitory albuminuria has disappeared. Tonelli⁷ reports such a case in which a woman twelve days after delivery went into sudden coma; a trace of albumin was present, then none; but very many casts, especially hyaline and granular, persisted until recovery. It is claimed that as a rule the reverse is true. Friedenberg⁸ in 51 cases of postpartum albuminuria found casts in but 3. In tuberculosis pure cylindruria is not rare. Craandijk found it in 10 of 109 cases. The casts were

especially hyaline, about a quarter of them granular, a few showed leucocytes and degenerated epithelial cells attached, and in about one-half the cases a few red blood cells were present as well. Kossler⁹ found pure cylindruria in 18 cases of chronic tuberculosis, especially those late in the disease with evident cavity formation and a long period of hectic fever. Some at the end had cachectic edema, none symptoms of amyloid disease. The casts were few or very many and of all forms; especially hyaline and granular, almost always a few epithelial; most hyalines had these cells attached, but there were also pure epithelial casts; there were some coarsely granular casts, also some pus casts, on one or two occasions waxy casts, and in some blood casts were present during a long time even in large numbers, some of them pure; in other cases red cells were attached to hyaline casts. Cylindrurids were also present. In some cases the cylindruria was very transitory.

In cases of endocarditis sometimes pure cylindruria is found.

Cylindruria accompanies constipation and diseases causing this (confirmed in animal experiments by Wallerstein). Kobler reported two such cases of chronic constipation, two of acute constipation and one of appendicitis. He considers the cause a reflex one causing vasomotor disturbance, hence nutritional disturbance of the epithelium. In other such cases the cylindruria outlasts the albumin. The same is true of various inflammatory troubles of the intestine.

One of the first illustrations given was jaundice due to any cause, which was accompanied in every intense case by albuminuria and cylindruria, or the latter alone. Nothnagel found casts always and albumin in but one-third of the cases. In diabetic coma pure cylindruria may occur.

Pure cylindruria occurs in a group of cases in which circulatory changes seem the only common element, as in valvular heart disease and arteriosclerosis, but more often with such cases is pure albuminuria.

CASTS IN NON-NEPHRITIC PROCESSES.

By non-nephritic is here meant a very temporary condition lasting but a few days or hours and with no sequelæ. The condition, of course, often may be a true nephritis.

In our cases of chronic passive congestion with autopsy, hyaline, granular, epithelial, waxy, fatty and pus casts: all gradations from a few hyalines to the picture of acute nephritis, were found; in acute congestion granular casts were found. In cloudy swelling, hyaline, granular, blood, epithelial and waxy casts were seen. In fatty kidneys, hyaline and granular casts were found. Febrile albuminuria is practically always also cylindruria. These accompany jaundice as long as it lasts: diabetes, anemia, and after the ingestion of many irritating foods. Very temporary disturbances of the kidney may present the picture of acute nephritis. These symptoms are present, with a trace of albumin, in about 50 per cent. of cases of general anesthesia for from twenty-four to forty-eight hours. Brown¹⁰ has described some interesting cases of operations on the kidney, the urine previously normal; the operations were nephropexy or exploratory nephrotomy. On the first day following the operation, casts were present in enormous numbers. There were hyaline or granular, blood or epithelial. The field was simply crowded with them. Considerable albu-

4. Deutsch. Arch. f. klin. Med., vol. lxxvi.

5. Amer. Jour. of Med. Sc., Dec. 1893; Med. News, April 14, 1894; Lancet, Sept. 4, 1897.

6. Centraltbl. f. inn. Med., No. 20, 1903.

7. Centraltbl. f. inn. Med., 1898, p. 531.

8. Berl. klin. Wochtt., 1894, No. 4.

9. Berl. klin. Wochtt., 1895, Nos. 14 and 15.

10. Johns Hopkins Hosp. Bull., May, 1900.

min was occasionally present. They diminished rapidly in number and in a few days (from two to six) had entirely disappeared. During this time there had been no symptoms of nephritis, no edema and the amount of urine was normal. The most striking feature was the disproportion between the amount of albumin and the number of casts, this being greatly in favor of the latter. There were no later symptoms.

Another very good example is eclampsia, in which the cylindruria and albuminuria are extreme, yet at autopsy (after death due to hemorrhage) the kidneys may be found apparently normal.

The postural orthostatic physiologic albuminuria is practically always accompanied by casts, if one take the trouble to search. Casts occur with albumin after the massage given the kidneys by bimanual palpation. Derrington, in the urine of the oarsmen of the Harvard crew, found casts common. After a bicycle race, Müller, in the urine of 8 trained men, found in 7 albumin and casts and in 6 very many casts (these 6 including the albumin-free case). The casts were hyaline, granular and epithelial. They were gone the next day. In another group of twelve, casts were found in seven.

CASTS IN THE URINE OF NORMAL MEN.

That casts could be found in the urine of normal men has been believed by the earlier observers from the time of Henle. The finer changes in the kidney in nephritis were not then well understood, and examinations, such as made by insurance companies, were not practiced, hence these men may not have been strictly normal. Again, at that time, cylindroids were counted as casts, perhaps rightly.

As Osler has emphasized, it is rare to find a normal kidney in a man of over 50 years of age. The high strung, rapid life often shows its effect first on the kidneys and a slight increase of connective tissue, and some atrophied and sclerotic glomeruli are found. The process of senile atrophy alone, however, causes no albumin or casts, although half the renal tissue may have disappeared. It is the inflamed degenerated condition of the still-functioning epithelium.

The statement has not recently been made that casts occur in the case of normal men, and all such are considered as poor risks by insurance companies.

MEANING OF CASTS.

Casts occur wherever albumin might or does occur, but although usually associated, either one may be present without the other. It is safe to say that it is the renal cells which are at fault.

The lesion causing cylindruria may be very slight, very trivial, very temporary—some slight temporary disturbance in renal circulation; malnutrition of the cells, anemia due to any cause; the excretion of any irritating substance. Renal cells are some of the most sensitive in the body. Many think that a few hyaline casts means nothing but the most observers agree that any number, even of hyaline casts, means an irritated condition of the renal cells.

The cast may be a good index of the present state of the cell, whether merely irritated or totally destroyed, but gives absolutely no clue to the process behind that condition of the cell, whether a temporary malnutrition or an acute nephritis or a chronic nephritis with almost entire destruction of the kidney and with impending uremia. In fact, it seems as if the cells of a normal kidney could give a more vigorous demonstration of their disturbed condition by a more brilliant output of casts

than could those of a diseased kidney. The latter seem to become accustomed to their condition and form even no casts.

To say that casts and albumin run roughly parallel is hardly correct, since one must distinguish between formation and elimination of casts, perhaps between elimination of the materials for casts and their formation.

Casts, however, are of much importance in following a case of nephritis or other renal disturbance.

For them to be present temporarily and then to disappear entirely means, no matter how alarming their number and variety may have been, a temporary and probably harmless disturbance; for them to continue for days, weeks, or months, no matter how few and how insignificant the onset of the trouble, means chronic nephritis; and for them to remain two years means, it is said, an incurable case.

In a case of nephritis, for the number to diminish and to include hyaline and finely granular casts means a subsidence of the acute process, while the reappearance of the epithelial, coarsely granular and bloody casts means a flare up.

That they precede albumin in certain early cases of nephritis remains to be proved. In scarlet fever, the casts may outlast the albumin, which ceases with the temperature, but in some cases from the first there seems to be only cylindruria, and this ceases with the temperature. In typhoid fever pure cylindruria is not at all rare and especially that following an albuminuria. The casts may even become more numerous after the albumin stops.

Phosphorus poisoning may produce only casts, and these in abundance, epithelial with the cells at all stages of fatty degeneration, and fatty casts. Casts also occur in acute infections of various sorts, in the cachexia due to cancer, etc., in diseases of the central nervous system, in various lung diseases, as pneumonia and severe bronchitis, in which blood casts may be the prevalent form, and in empyema.

CONCLUSION.

In the preceding pages we have given the experience of this clinic in the field of urinary diagnosis. The microscopic examination of the urine is indispensable, yet only as an aid to physical examination of the patient, for the examination of one specimen of urine will seldom be enough for a diagnosis.

In conclusion, we wish to emphasize the fact that casts alone are no index of the anatomic renal condition. Their most brilliant display is in non-nephritic condition; the most serious conditions in nephritis may be accompanied by few or none.

The more normal the cells the better do they seem to form casts when disturbed; in chronic conditions the cells seem to become accustomed to their condition and to form few casts or none.

The duration of the occurrence of casts is of great importance, and a given case may be well followed by the casts. Epithelial, blood and pus casts are more common and of less significance than is usually supposed.

DISCUSSION

ON THE SYMPOSIUM ON NEPHRITIS.*

DR. JOHN A. WITHERSPOON, Nashville, said that for a number of years he has been very much impressed with the reparative and recuperative powers of the kidneys. It has been taught, he said, that the kidneys have but little reparative or recuperative powers and yet many physicians have witnessed the disappearance or subsidence of conditions at the

* Part of this symposium appeared in THE JOURNAL last week.

bedside, and of the pathologic findings. Everything must be taken into consideration before the physician makes a positive statement, or gives a positive diagnosis. No man can depend on the clinical findings alone at the bedside. The successful man will have to rely in all his cases largely on what he finds by a comprehensive view of the entire situation. In no character of cases is this more necessary than in the consideration of kidney lesions. Dr. Witherspoon has been impressed with the fact that many men are in too big a hurry and rush through their diagnosis too rapidly. In kidney cases above all the quantity of the urine in the twenty-four hours, with repeated test microscopically and chemically of the urine in many cases will make a diagnosis. One can not jump at conclusions as is often done by the simple finding of albumin and casts. The rapidity with which some men make their diagnoses is to be censured, he said. More time should be taken in the examination of these patients. Many cases diagnosed as Bright's disease are not really that disease at all. Many prognoses would be changed if the cases were watched a sufficient length of time. In the management of the cases one should be able to recognize the danger signals even when the patient is apparently getting along comfortably. The process may be an insidious one or a stormy one, but there are certain things that should serve as danger signals, such as the uremia and evidences of cardiac changes. The heart is responsible for many of the troubles that arise with broken compensation, or when the hypertrophied left ventricle gives away. If the physician early recognized these danger signals, such as twitching of the muscles, or irregular or dilated pupils, or changes in the quality or quantity of the urine and other signs he would be able to prevent many of the subsequent dangers. Dr. Witherspoon said that medicine plays but a small part in the treatment of disease, and less in the treatment of kidney disease than in any other. In these cases success will depend chiefly on regulation of diet and on the general management.

He believes that many men have been much weakened in their vital resistance and in their muscular powers by improper dieting, resulting in malnutrition, especially such dieting as was prevalent years ago. It is horrible to contemplate. Many of these patients with chronic nephritis may live for years if they are not scared to death. He cautioned against allowing the patient to pay more attention to the taking of medicines than to the sanitary surroundings. He has had patients say to him: "I have missed taking a dose of your medicine," and he really wished that they had.

Dr. W. OPHÜLS, San Francisco, stated that at the pathological laboratory of Cooper Medical College, he and his assistant have been interested in studying the relation between albuminuria and nephritis and his assistant, Dr. Wm. Osmer, has carried on a long series of investigations of the urines as a routine measure in autopsies. With the findings in the urine and the actual microscopic condition of the kidneys noted, they were compared. The investigation brought out very much the same facts as mentioned by Dr. Emerson. Their experience, Dr. Ophüls said, certainly shows that even a large amount of albumin and casts of any kind may be present in the urine and still, besides chronic passive congestion, no lesions can be recognized at autopsy, either with the naked eye or with the microscope. That is to say, in a large number of the cases the urine showed a considerable amount of albumin and casts in large numbers and all varieties, without inflammatory lesions in the kidney to account for them. This plainly shows what a difficult matter it is to distinguish between the last stages of heart disease and the last stages of kidney disease from an examination of the urine alone. They also found how difficult it sometimes is to recognize even acute kidney lesions by an examination of the urine. In chronic cases urinary analysis often revealed very little, especially in instances where but one examination was made; so that from the pathologic side it must be emphasized that an examination of the urine alone either once or when done repeatedly is not sufficient to make a proper or conclusive diagnosis of the existing conditions. So far as classifying the various types of the disease is concerned Dr. Ophüls agreed with Dr. Shattuck that physicians

must adhere after all to an anatomic classification. As to just what this classification should be he is as yet in doubt. He is sure, however, that it should be based not so much on the minute histologic details but on the grosser features of the disease. A very good sign of what we may be coming to is shown by the report from the Johns Hopkins Hospital, showing that they are attempting to classify their cases of nephritis according to anatomic lesions; they have returned to the oldest anatomic classification, that we possess distinguishing between the large white kidney and the small red one.

Dr. L. DUNCAN BULKLEY, New York, related his own case. In 1869 he had a very severe attack of acute nephritis. He was attacked suddenly and the urine became as black as coffee, thick and solid. He was sick a number of months and was compelled to give up his hospital work. He went to the country. Since then he has had three or four acute attacks, the most severe being eight or ten years ago, when going through the Yellowstone Park. Then the urine was black as coffee, thick and solid. For a few days he took absolutely nothing but milk and then he went to Vancouver and dieted more or less. The plan of treatment he advocates is the taking of pure warmed milk, perhaps a little diluted, one or two hours before eating. He never takes milk with his meals. From that time to this, i. e., for twenty-five years or more, during six days in the week, he consumes a quart of milk a day and takes a moderately fair diet. One goblet of milk is taken at 12:30 and three goblets after 11:30 at night. The milk should be taken between meals and at the temperature of the body so that it can be absorbed immediately and pass into the lacteals, etc. When Dr. Lambert examined Dr. Bulkley for insurance, he said that he would live fifteen years; that time has expired some time ago. Dr. Bulkley has been refused several times by life insurance companies because of the presence of so much albumin in the urine. He has had several policies granted him, however, because before going for examination he has been careful for a few days or weeks. He believes that it is of immense importance to know just what the kidneys are doing day by day, and week by week. He has a number of patients whose urines are tested day by day. He has the entire quantity of urine passed in the day examined in order that he may know the absolute quantity in ounces that is passed and which enables him to mark out the coefficient of the solid ingredients, a thing which he considers to be of more importance than knowing exactly the exact quantity of albumin. One should know exactly whether or not the patient is passing from the body in twenty-four hours his equivalent of solids.

Dr. G. V. McCASKEY, Fort Wayne, Ind., said that he thinks that those who have given the dietetic treatment of chronic nephritis careful attention are almost a unit in regard to the necessity of properly feeding these patients. Several years ago he became especially impressed with the fact that they were underfed. Patients went to him emaciated and weak from the long continued use of toast and slop diets. He then began cautiously to experiment with more substantial diets, gradually introducing liberal quantities of meat. The effects on albumin excretion, casts and the general symptomatology of the case was carefully observed, and these patients were found not only not to do worse, but to do better in every respect. It is not the color of the meat which is the proper criterion, but its digestibility. No general rules can be laid down with regard to the absolute quantity of meat to be given, but he has been in the habit of making a sort of test by giving such a patient a full meal of meat; and if the urea output goes up sharply, it proves to his satisfaction the existence of such a degree of renal capacity as will justify such a diet. He referred to the importance of paying especial attention to the gastrointestinal tract. He thinks it is not saying too much to affirm that in a large proportion of the cases of chronic nephritis, the disease is caused by toxins absorbed from the gastrointestinal tract. The therapeutic importance of this fact is obvious. In many cases the stomach and intestines should be carefully investigated by chemical and microscopic methods, and in many

the patient will be greatly benefited by suitable local treatment of the morbid conditions thus revealed. With regard to Dr. Brown's paper Dr. McCaskey does not feel convinced from the data he presents that the kidneys are not at fault in the causation of eclamptic seizures. Of course, there are many other factors, but the increased toxicity of the blood is best explained by inadequate renal function, assuming, of course, the increased formation of toxins. This does not necessarily mean organic renal disease, for the real trouble may be cardiac or vasomotor. Dr. Emerson said that in the degenerative lesions of chronic renal disease the albumin persists longer than the casts. His conclusions are based on an extensive series of cases in hospital practice. Now, if they are to be accepted, it seems to Dr. McCaskey that a logical inference is that albuminuria is a more important indication of degenerative renal disease than the presence of casts.

Of the tests for albumin, he prefers the use of the Janet reagent as the initial routine test in all cases. The formula for this is: Hydrarg. bichlor., 1.35 gms.; potassium iodid., 3.32 gms.; acid acetic, 20.00 c.c.; aque, 64.00 c.c. All forms of proteids respond to this test, and can be excluded at once if a negative result is obtained. If the result is positive, then other tests such as those described by Dr. Stengel can be used to determine its clinical significance. Dr. McCaskey referred to the statement in the abstract of Dr. Councilman's paper, printed in the program: "Interstitial changes in the kidney are secondary to injury of the parenchyma." He said that this statement should not pass without comment, because it tends to convey an impression which the author certainly does not intend, that interstitial nephritis is usually the result of the parenchymatous form which is not in accordance with the facts.

Dr. WOODS HUTCHINSON, Portland, Ore., said that the thing we most need to-day is to get a clear conception of the fact that Bright's disease is not primarily a disease of the kidney; its causes exist outside of that organ. In many cases the kidney trouble is the localized result of a general arteriosclerosis or fibrosis, and this is usually due to the presence of toxins in the blood. We can more and more trace this as a cause of nephritis and we are less and less overlooking influenzas, summer diarrheas, ptomain-poisonings, etc., as causes. Whenever there is this toxic condition the kidneys suffer chiefly from their attempt to eliminate. He believes that the importance of albumin and casts has been greatly exaggerated. Really the amount of albumin found in the urine is an unimportant consideration. It is never a symptom of inflammation and the important question is, what is the cause of this intoxication? He believes that food has very little to do with its production and yet we have taken milk as the food in Bright's disease. Milk is an admirable food, blameless and innocent, both in the color and in its association with childhood days, yet he believes it is dangerous in nephritis because of the heavy percentage of work that is thrown on the kidneys, as von Noorden has shown, in proportion to its nutritive content, more so than by any other food. It also swarms with bacteria. In milk shakes, and milk punches the real danger is often from the milk rather than from the alcohol. Although red meat has both the color and attractiveness of sin, yet its actual nutritive value is probably more than that of any other food in proportion to the work it throws on the kidneys. With regard to any diet this must be remembered. The kidneys are there for their own benefit, as well as for ours. What we call excretion or elimination they call feeding. A nitrogenous diet is necessary for the proper nutrition of the kidney cells, and we lower their vitality, as well as that of the body generally, when we cut it off or reduce too low. Any diet that diminishes the amount of fermentation in the intestines of the patient and builds up his strength is the diet that is best fitted in cases of nephritis, regardless of whether it be proteids or carbohydrates, alcohol or milk.

Dr. A. P. FRANCINE, Philadelphia, referred briefly to work being done by Dr. Joseph Walsh of the Phipps Institute of Philadelphia, in reference to nephritis occurring in those dying of pulmonary tuberculosis. In all 53 cases have been ex-

amined, both macroscopically and microscopically. The kidneys were sectioned as usual, described and then further cut up. Anything abnormal found was blocked and studied microscopically. From twelve to one hundred microscopic specimens were studied in every case. Frequent and accurate examinations of the urine were also carried on from the time the patients entered the wards. Often the urine analysis was negative, while the kidneys showed a pathologic nephritis. The findings are mainly pathologic. He referred to the more important facts. The following is a tabulated list of results: Normal, 1; congestion, no tubercles, 3; cloudy swelling, scattered tubercles, 1; toxic nephritis, no tubercles, 4; toxic nephritis, scattered tubercles, 10; parenchymatous nephritis, no tubercles, 7; parenchymatous nephritis, scattered tubercles, 8; interstitial nephritis, no tubercles, 1; interstitial nephritis, scattered tubercles, 4; diffuse nephritis, no tubercles, 2; diffuse nephritis, scattered tubercles, 6; cloudy swelling, scattered tubercles, amyloid degeneration, 1; parenchymatous nephritis, scattered tubercles, amyloid degeneration, 1; ulcerative tuberculosis of kidneys (surgical kidneys), 2; scattered tubercles, 1. Thus 34 of the cases show typical tubercles. From the above results of careful examination it may be seen that nephritis in tuberculosis is common. This occurs usually in the form of parenchymatous or toxic nephritis, though other forms are not infrequent. Normal kidneys in connection with tuberculosis are rare. Glomerulo-nephritis or hemorrhagic nephritis was never found. Tubercles were diagnosed as such, only when they showed caseation and giant cells. Thus of the above series 64 per cent., or nearly two-thirds of the cases, showed miliary tubercles. This is a new and important discovery.

Dr. JAMES J. WALSH, New York, said that physicians succeed in doing something for their patients just in proportion to their early recognition of disease and the use of curative and prophylactic measures, to prevent its further progress. The reason why in recent years the death rate from tuberculosis has been so greatly reduced, is that physicians have learned to recognize the very earliest stages of the disease. Many of the patients who are now sent to sanatoria, a few years ago would have been pronounced by most physicians to have nothing serious the matter with them, so slight are the signs of tuberculosis. Indeed, at the present time, the cry of the specialist in tuberculosis is that more patients are not saved, because the family practitioner has not learned to value at their full significance the earliest signs of the affection. The same thing is true with regard to most of the diseases which the medical man has learned to turn over in recent years to the surgeon. It is because appendicitis can be recognized before it produces general peritonitis, and because gallstones and ulcers of the stomach are considered as worthy of early surgery, that the death rate from these diseases is reduced. If nephritis which has come in recent times to occupy something of the place that tuberculosis held a generation ago, could be recognized during its early stages, then undoubtedly the cure, or at least the prolongation of life with this disease, could be secured as it is in tuberculosis. The kidney symptoms of nephritis are by no means the first to manifest themselves. The urinary symptoms are only manifestations of a local change in the kidney, which has been evident, however, by symptoms from other parts of the body for some time before. It is these early symptoms of constitutional affection, that will eventually lead to the severer forms of nephritis that physicians must try to recognize. There are undoubtedly some clinical symptoms of these earlier manifestations. When the toxins that are eventually to work serious damage on the kidneys are originally absorbed from the digestive tract, they produce only a high tension pulse and a tendency to the disturbance of the heart action. This high tension pulse can be observed in the arteries, and the subjective symptoms of it a fluttering heart with a tendency to the heart beats making themselves felt during a good portion of the day, and especially during severe exertion, not infrequently bring patients to physicians before there are any urinary manifestations or at a time when the symptoms in the urine are so slight as scarcely to attract attention. There seems to

be no doubt that much of the nephritis that is seen is due to the fermentative disturbances in the intestinal tract, which disturb digestive processes. Constipation has become such a common ailment in modern times that a medical wag said not long ago that perhaps it is leading and light that our people need, but it seems more probable that laxative and licorice powder are about what they want. As the result of these intestinal disturbances, a certain amount of toxemia is not at all unusual and whenever there are symptoms that seem to point to disturbance of arterial tension and of heart action, in connection with it, the question of prophylactic treatment so as to prevent the development of nephritis should always be considered. Here is where the only hope in the medical treatment of Bright's disease seems to lie.

DR. FRANK BILLINGS, Chicago, said that our conception of nephritis may be compared with affections of other end organs of the body, especially the eye and brain. We know that the eye may be affected by local conditions or because of some general bodily defect; thus vision may be disturbed through local disease of the eye, which does not depend on any systemic condition. Vision may be disturbed through local conditions of the eye which are due to some systemic condition, and again vision may be disturbed without a disease of the eye, but because of some systemic diseases, a brain condition. If one should attempt to treat the loss of vision without a diagnosis of the causes of the disturbance, it would be irrational. So of the kidney, another end organ may be diseased locally by inflammation or degenerative changes which are manifested by albumin and casts in the urine, without any systemic disturbances. The seriousness of the condition would then depend on the degree of kidney disease. The kidney may be involved in a systemic disease as a secondary process or as a part of the general disease. The kidney may be much or little affected, the seriousness of the condition often depends on the cardiovascular status. A general disease may exist with cardiovascular changes in which the kidney may be little or not at all involved, as is evidenced by a urine that is practically free from albumin and casts and yet the individual may be as thoroughly a subject of Bright's disease as if the urine contained albumin and casts. It is the failure to recognize the diseased conditions of other organs of the body when there may be evidences of disease of the kidney, as evinced by the presence of albumin and casts, that has resulted in an uncertainty as to the management of kidney disease. Drugs may be indicated in certain of these conditions and the food indicated may be entirely different in each of the conditions named above. He said that physicians generally must agree with Dr. Shattuck in his ideas of diet in Bright's disease.

DR. JOHN H. MUSSER, Philadelphia, emphasized especially what had been said regarding the classification of nephritis, and the forms of Bright's disease. He also called attention to the importance of making a complete chemical analysis of the urine, a physiologic study, in order to lay down proper lines of dietetic management, as a study of the nitrogen output, and a study of the elements found that are secondary to putrefactive changes in the intestinal tract. The important statements made by Dr. Emerson, he said, should give rise to much reflection, and especially the statement regarding "showers." In one or two instances after the use of salt solution, in cases of interstitial nephritis, Dr. Musser had an opportunity of seeing these extraordinary showers occur. Physicians should not make a final diagnosis in obscure cases of alleged Bright's disease unless the patients are in bed a certain length of time, and the urine examined under such conditions, as well as after exercise and perhaps after various modifications of diet. Finally, he questioned the conclusions that have been drawn from an examination of the urine taken after death. At this agonal period changes occur in all secretions, even though there is no pathologic basis for them.

DR. M. H. FUSSELL, Philadelphia, sounded a note of warning. He said that it is unquestionably true that the presence of albumin and casts in cases of arteriosclerosis is

simply a part of the general arteriosclerosis, and it is perfectly right that it should be so recognized. It is equally true that albumin and casts in large quantities may occur in many conditions without there being a true nephritis. If it is shown that albumin and casts occurring in the urine does not mean a nephritis, he is afraid that many general practitioners of medicine will say, "Why examine the urine at all?" It is of the greatest importance that albumin be looked for in a routine manner in much the same way as the heart, lungs and arteries are examined in every case. The presence of albumin and casts does not mean necessarily the presence of a nephritis, but they are danger signals, and if we do not examine the urine carefully, we will not be aware of their presence.

DR. L. LEROY, Nashville, said that while there is a possibility of giving too much attention, or of placing too much confidence in, urinary examinations, still the present tendency to disparage their value is not in keeping with the highest and best work, and the general practitioner is liable to go to extremes and to disregard these findings. Dr. Leroy believes that it is rather a step backward and not a step forward. The finding of albumin and casts does not necessarily mean that the kidneys are not diseased, nor does it mean that they are. He thinks that the future classification of nephritis will be, as Dr. Billings has suggested, not on the microscopic findings, nor so much on the gross anatomic appearances, as on the etiology. Arriving at a prognosis in the presence of relatively small amounts of albumin and casts is one of the most difficult things and this may be a possible explanation of the work Dr. Leroy has been doing during the past two years in examining portions of the kidneys. Frequently he has found a large percentage of the kidney in good condition, whereas certain of the pyramids were in an advanced stage of degeneration. Yet there was sufficient kidney not involved to carry on the work fairly well. With regard to the treatment by diet he has found that the use of boiled meats gives the best results. Boiled meat approximately has as much nutritive value as the unboiled and the process of boiling gets rid of the extractives which are more irritating than useful.

DR. J. A. LICHTY, Pittsburg, Pa., said that it seems to him that we are coming to the turning of the way. We must look in a different direction for the basis of a diagnosis. Physicians should hold to what they have already gained during the past years and add to that some information which might come by a study of blood pressure. He is surprised that the study of blood pressure has not been taken up in this discussion. The sphygmomanometer will yield information in many cases in which the examination of the urine appears to be misleading. He mentioned two cases which he saw recently. One patient was a man 60 years old, who was thrown from a street car and sustained considerable shock, and did not recover as rapidly as Dr. Lichty thought he should. The urine appeared normal. On taking the blood pressure it was 210 and that aroused suspicions that there was more than the results of the accident to contend with. About the same time a pregnant woman consulted Dr. Lichty. Her urine contained casts and an abundance of albumin. The man had a high blood pressure, but no albumin or casts, and he grew gradually worse, and thirty or thirty-five days later he had convulsions and died. Here was an instance of a man having a nephritis and yet no albumin or casts. The woman had a blood pressure of only 110, with an abundance of albumin and casts, and went through her confinement without any suspicious symptoms; after her labor the urine was perfectly clear and she was perfectly well. These two cases show very definitely the value of the sphygmomanometer in the diagnosis of nephritis or Bright's disease. The direction of study now, Dr. Lichty believes, should be more toward blood pressure and probably the infections.

DR. ALFRED STENEL, Philadelphia, declared that the matter of classification of nephritis has been discussed time and again, and it is apparent that no classification can be offered which will prove satisfactory from all points of view. Such working classifications as may satisfy the clinician are inadequate in a pathologic sense. He has considered only acute and

chronic nephritis (parenchymatous) and amyloid disease of the kidney, and has set apart chronic interstitial nephritis as a different sort of process. It is very important that physicians should distinguish parenchymatous disease of the kidney or ordinary Bright's disease, whether acute or chronic, from chronic interstitial nephritis. In parenchymatous Bright's disease there is a disorder of renal function which shows itself in disturbed general metabolism and disordered nutrition of varied type. For a long time at least the condition is essentially a renal affair. On the other hand, chronic interstitial nephritis usually is only secondarily and even in a terminal sense a renal condition; primarily, it is a more or less subsidiary part of the general condition, arteriosclerosis. Dr. Councilman and others have established the frequency of acute interstitial nephritis in certain infections, and reasoning from analogy one may assume that chronic interstitial nephritis might result from such a condition without the necessary existence of general arteriosclerosis. As a matter of record, however, Dr. Stengel has seen very few instances of chronic interstitial nephritis without antecedent arteriosclerosis. According to his view, chronic interstitial nephritis is for practical purposes simply a renal phase of generalized arteriosclerosis, just as in other cases one may meet with a cerebral type. It is important to recognize this because the untoward results of renal inadequacy are far distant and unlikely events in chronic interstitial nephritis as compared with the parenchymatous forms, and for this reason a differentiation must be made. He said that he thinks that Dr. McCaskey misunderstood Dr. Councilman's meaning in the abstract where he states that "interstitial change in the kidney is secondary to injury of the parenchyma." It is a dogma in pathology that all fibroid or interstitial processes have antecedent changes or degenerations in the parenchyma of the organ. There must be cellular destruction before the interstitial processes arise. Dr. Councilman's thought was this, Dr. Stengel takes it, and not what he presumes Dr. McCaskey believes, that all cases of chronic interstitial nephritis are secondary to what we recognize as chronic parenchymatous nephritis. The statement was to be interpreted in an anatomic and histologic sense rather than in this clinical way. Referring to the danger of entire frankness in the matter of pointing out the significance of albumin or of casts in the urine, he agreed that it would be deplorable if practitioners ceased to make routine examinations of the urine, because we here freely acknowledge the deceptiveness of such examinations in certain cases. So far as his own contribution to the subject is concerned he said that there is no difficulty in recognizing established nephritis when one makes repeated examinations of the urine. It is difficult, however, in cases of trivial albuminuria to assert positively whether there is a beginning Bright's disease or some transient condition. Also, it is difficult to assert with positiveness the pathologic significance of albumin and casts in the last days of life, especially when death is brought on by cardiac disease. Repeated examinations are necessary and a study of the case for a considerable period of time enables the physician to reach definite conclusions in all renal cases. Only the routine examination of the urine will lead to a proper understanding of such cases; without it the physician falls into superficial methods of diagnosis.

DR. PHILIP KING BROWN, San Francisco, said that there is no evidence at all to show that there is any intoxication due to the retention of normal end products except in cases of jaundice. He thinks that all investigators have shown that no end products, or intermediary products, have anything to do with the intoxication of eclampsia. None of these products has been found to be uniformly increased in the blood of eclamptic patients, nor has experimental injection of an excess of these products reproduced clinically or pathologically the condition of eclampsia. He said that he wished to correct the impression which Dr. McCaskey has, that the cases cited in which the urea was so strikingly diminished, were cases of eclampsia. They were cases of pathologic conditions of the kidneys or cases in which eclampsia had been present before, but the pregnancies during which observations were made were normal.

CANALIZATION OF THE SIGMOID, THE LATERAL AND A PORTION OF THE SUPERIOR LONGITUDINAL SINUSES FOR MASTOIDITIS

OF TWENTY-ONE YEARS' STANDING, WITH SUBSEQUENT RE-ESTABLISHMENT OF A TEMPORO-MANDIBULAR JOINT.*

BAYARD HOLMES, M.D.
CHICAGO.

INTRODUCTION.

The following case of long-standing middle ear disease, with mastoiditis, sinus thrombosis and metastatic infection in distant parts of the body, is presented as a horrible example. It occurs to me that poulticing a felon, starving a patient with appendicitis, and neglecting a mastoidectomy in antral disease represent the same stage of irrational, cowardly or villainous treatment. When we consider the number who lose their lives, the number who are crippled in hearing, and thus deprived of the advantages of social happiness and education, and, last of all, those who are partially invalidated by the frequent exacerbations of the disease and its general toxemia, the indications for a prompt, adequate and effective mastoid operation become imperative. This patient has met with more of the mechanical and less of the intellectual and social ravages of this disease than many others in my experience. No criticism of the early treatment of this case is contemplated, but I would insist that a similar treatment to-day could hardly receive professional support.

NARRATION OF CASE.

History.—Miss D., the daughter of perfectly healthy parents, was born July 7, 1882. After the first few weeks she was bottle fed, but was well and perfectly nourished until the beginning of this disease. She had none of the infectious diseases and no interruption in her perfect condition until July 4, 1883, when she was a year old. While at some open-air celebration not far from home, she was taken violently ill with chills and fever, and in a few hours a swelling appeared on the right side of the face and about the ear, which some days later broke and discharged through the meatus. With some relief and frequent exacerbations and numerous perforations of the skin in front of and behind the ear, this suppuration continued for five years. The glenoid fossa was completely obliterated and the temporo-mandibular joint ankylosed. Metastatic abscesses appeared at the same time in various parts of the body, notably in the right humerus, the right leg and foot, and the left thigh. The right hip took on the symptoms of hip-joint disease, but after the discharge of pus a complete recovery followed. From some of these openings bones were discharged. There was never any pneumonia.

When she was 6 years old she was operated on in Chicago by Dr. Edmund Andrews. The mastoid was scraped away superficially, and the suppurating middle ear cleared out. Evidently the ossicles were removed. The wound healed, the external auditory meatus became completely obliterated. From time to time during the subsequent nine years abscesses appeared about the mastoid, which were usually lanced and closed up after the discharge of small pieces of bone. These attacks usually appeared in the fall.

She was greatly troubled by the immobility of the lower jaw, and when 14 years old she was anesthetized by Dr. D. W. Graham, who evidently succeeded in producing a fracture of the ramus. This healed, however, in good apposition in a few weeks.

When she was 15 years old she had a severe inflammation over the mastoid, which was followed by an inflammation an inch and a half above the junction of the sagittal and lambdoid sutures. After a time this was opened and discharged several

* Read before the Chicago Neurological Society, 1905.

ounces of pus and some pieces of bone. From this year on she had no more infections anywhere, either over the mastoid or in the extremities, until she was 19 years old. An abscess then appeared near the vertex, discharged large quantities of pus for twenty weeks, and closed spontaneously. A year later another abscess appeared at the same place, which reached enormous size. She came to Chicago and consulted Dr. N. S. Davis, Jr., who put her in Wesley Hospital and opened the abscess.

Examination.—Three weeks later, Nov. 16, 1903, she first consulted me. She gave a clear and unclouded history. During all her life she had had no mental disturbances, was always even tempered, and never suffered from headache, though she frequently had pain in the affected portions of the skull. I found a suppurating sinus near the vertex, and elicited tenderness over the upper portion of the mastoid and the squamous portion of the temporal bone. The jaw was completely fixed by the obliteration of the right glenoid cavity, and the teeth were so close together that they would not admit a knife. The only entrance to the mouth was between the right molars. The right buccinator had been greatly hypertrophied in forcing the food from this buccal cavity between the teeth into the mouth. The external auditory meatus was closed with skin almost on a level with the internal surface of the auricle. There was a considerable scar on the right temple, where an abscess had

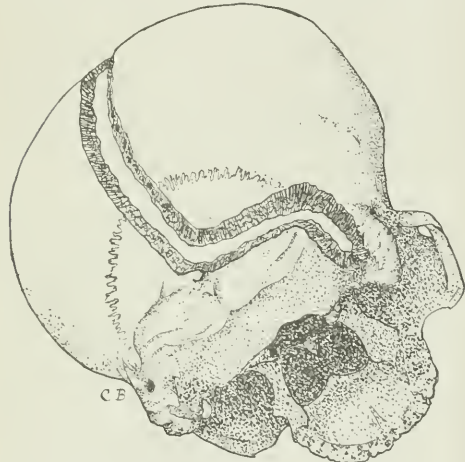


Fig. 1.—Diagram of the canalization of the sinuses showing direction and extent of the operation.

been opened and bone discharged. The neck was not stiff, and few enlarged lymph glands were found under the affected ear. Examination of the chest, the abdomen and the blood and urine gave no evidence of disease. There was no history of a typical sinus thrombosis or of any attack of pneumonia, bronchitis or nephritis.

The patient was perfectly active mentally and physically. She had a good appetite and was in excellent spirit. There was no dilatation of either pupil and no evidence of paralysis of the face, the arms or any group of muscles. The pulse was not slowed, and the respirations were full and active, and headache was entirely denied.

First Operation.—From the clinical history and the physical examination, I concluded that the mastoiditis of five or six years ago had produced a sinus thrombosis, with obliteration of the sigmoid, the lateral and a part of the superior longitudinal sinuses, and the discharge of the infection above the lambda. I believed that the proper treatment would consist in an obliteration of the sigmoid, the lateral and the superior longitudinal sinuses by canalization (Figs. 1 and 2) and by the complete eradication of all suppuration in the antrum, if left behind, and in the attic and the air cells in the root of the zygoma. Accordingly, with chloroform anesthesia, an opera-

tion was undertaken as if to approach the antrum. This was found undisturbed and full of pus and connected by a defect in the tegmen with an abscess of great size in the middle fossa. This abscess was opened an inch behind and an inch above the middle of the external auditory meatus, and discharged such an enormous quantity of pus that further operating was discontinued in alarm. The abscess was extradural; the pus was of a dark-gray color, and not less than four ounces drained out during the operation and before the dressings were applied. It seemed impossible that such an enormous quantity of pus could be harbored in a skull with a perfectly functioning brain. The patient came out of the anesthesia without any trouble and did perfectly well.

Second Operation.—After two weeks a second attempt was made to eradicate the suppuration. The mastoidectomy was completed and the external auditory meatus opened to the bottom of the antrum. No evidence of the facial nerve was discovered at this time. There was scanty and much cicatrized skin in the neighborhood of the mastoid with which to close in the defect. The scalp was opened from the mastoid to the suppurating focus on the top of the head, and a channel of bone about 1 cm. wide at the bottom and something more than this at the top was chiseled out through both tables of the skull, laying bare the bottom of the sigmoid sinus, the lateral sinus and a portion of the superior longitudinal sinus. These channels were found covered with exuberant granulations. Nearly all of the pus had drained away during the two weeks' intermission. The patient endured the anesthetic splendidly. This operation was performed on December 4, and during the following three weeks she did well, the suppuration diminished, and the bone became rapidly covered with skin or granulations, but soon after Christmas the temperature suddenly rose, and an erysipelas spread from the neighborhood of the mastoid



Fig. 2.—Diagram showing the method of canalizing the superior longitudinal sinus. One flap of scalp is turned in over the skull. The other will be held down in the same manner by the gauze.

over the face and scalp. This lasted several days and disappeared.

Third Operation.—On Jan. 22, 1904, a third operation was performed to remove the granulations from the bottom of the wound, which extended from the lambda to the mastoid, and to close a large defect over the mastoid which had resulted from the inadequate supply of scalp. The defect was divided with a peniculus of skin. No osteal evidences were necessary. Following this operation the epidermization of the wound was rapid, and the patient left the hospital on March 1 without any large dressing. The only ulcer was over the mastoid. During the succeeding year and a half there were a number of slight attacks of pain with inflammation in the external auditory meatus, which subsided after a few days by the discharge of a little pus.

Fourth Operation.—She consulted me on Oct. 28, 1905, on account of such a suppuration, which appeared to be in the root of the zygoma, but very superficial and trifling. She also spoke of the possibility of restoring the function of the articulation between the mandible and the temporal bone. I found the jaw fixed, as it had been since she was a year old, but believed that the articulation on the opposite side of the jaw was perfect, and that the internal ligaments of the jaw between the lingula and the spinosa were intact. It seemed possible to separate the ear from above downward from the bony meatus without danger of anemic necrosis (Fig. 3) and thus approach the obliterated glenoid fossa by retracting the parotid forward and baring the lateral surface of the obliterated articulation. Thus it would be possible to eradicate the infection at the root of the zygoma and remove enough bone about the condyle of

the mandible to restore the joint. I had the assistance and advice of Dr. Charles P. Pruyn in this matter, who was extremely guarded in his prognosis, fearing the incompetency of the joint ligaments. This operation was undertaken Nov. 3, 1905, with gas and ether anesthesia. Without ligating any large blood vessel, the lateral aspect of the temporo-mandibular articulation was laid bare, the parotid and its contained branches of the facial nerve were retracted ventralward and downward, and the auricle, which was separated from the bony meatus, was retracted downward and backward. The outline of the joint was made out and found to be rather broader than normal on account of the adventitious growth of bone. An artificially curved condyle was then marked out with the chisel and the necessary bone in the zygoma and the glenoid fossa chiseled away. It required nearly 2 mm. of channel for the use of the chisels, and no cartilage was discovered in the course of the excavation. No accident occurred. The bone was somewhat eburnated, and showed no trace of infection except in the root of the zygoma, where it was expected. The mouth was not opened into from the operation wound. When the ankylosis had been entirely chiseled away, the jaw was movable, showing no ankylosis on the opposite side. The anesthetist was able to introduce the width of two fingers between the incisors. This was considered adequate. In order to

duce her thumb without force to the metacarpal joint. Forceful extension of the jaw produces as much pain on the left as on the right side.

SUMMARY.

To summarize the accomplishments of the treatment I have instituted, I would call attention to the presumptive diagnosis of a sigmoid sinus, a lateral sinus and a superior longitudinal sinus thrombosis. So unusual a condition could not be premised as an accompanying extracranial abscess of enormous size, probably containing not less than six or eight ounces of pus. The lack of pain and symptoms of sepsis would ordinarily deny the diagnosis.

The complete evidences of the antrum and its connecting air cells was the prerequisite to any effective treatment, and the alarming discharge of pus through the antrum and afterward through the opening in the squamosa constrained me to await the shrinking of the abscess cavity and the diminution of the field of operation to the sinuses alone.

At the second operation the external auditory meatus was restored in the hope of bringing the middle ear to some use. A communication was made between the bottom of the antrum and the internal wall of the tympanum. The sigmoid was opened immediately behind the mastoid, and the channel which the probe discovered leading toward the occiput was completely canalized. A few bits of infected bone were removed mechanically, which would have required months or years to be carried away in the discharges.

The temporo-mandibular joint has, I believe, been permanently restored and the function of the jaws for the first time made possible. The teeth can be treated now and kept for some time for mastication and for cosmetic purposes.

The patient has been relieved of the dangers of a chronic pyogenic function.

HYPEREMESIS GRAVIDARUM.*

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Fig. 3.—Diagram showing the blood supply (a, b) of the auricle after a complete mastoidectomy. The artificial articulation between the zygoma (z) and the mandible (G) under the retracted parotid is shown. A strip of fascia (F) and muscle taken down was turned into the new-made joint.

establish a permanent separation between the mandible and the temporal bone, the incision was extended upward somewhat, and a piece of fascia belonging to the temporal muscle was cut away, making a flap about 1 cm. wide and 4 cm. long. It contained an abundant blood supply in the bits of muscle attached to it. This flap was carefully drawn into the artificial articulation and held in place by the natural apposition of the bones. The wound was now closed, with a liberal drain in the immediate neighborhood of the artificial joint and dorsalward of the parotid.

Postoperative History.—Since the operation the patient has done well; there has been a discharge of parotid secretion and some pus from the wound, but there has been no disturbance of temperature. On first waking from the anesthesia, the patient discovered that she could, for the first time, protrude her tongue far enough to see it, and she exercised this newly acquired maneuver until the tongue was sore. The articulation has not been painful at any time, and voluntary movements are satisfactory. The teeth are so defective and sore that chewing is somewhat painful, but she greatly enjoys it. The jaw can now be voluntarily opened so that she can intro-

duce her thumb without force to the metacarpal joint. Forceful extension of the jaw produces as much pain on the left as on the right side. By this term is usually meant that aggravated uncontrollable form of vomiting of pregnancy which resists local as well as constitutional treatment, and which so reduces the patient's vitality that it very seriously endangers her life. Occasionally, deaths directly due to this cause have been reported, so that a very serious and difficult problem confronts the physician who has charge of such a case. A large number of these patients abort as the result of the irritation of the uterus caused by the violent fits of retching and vomiting; this relieves by removing the source of the irritation.

The lives of a number of these patients may be maintained for a time by rectal alimentation, but, unfortunately, by many this mode of feeding is not borne very well, especially if it must be kept up for a long time. Realizing, however, that the vomiting of pregnancy usually abates toward the end of the third or the beginning of the fourth month, the physician's aim should be to sustain the patient until this time shall have been reached. This can be done in some cases, but will fail in others. The patient may waste away and lose strength, retaining no food at any time of the day or night, either by mouth or rectum, despite the faithful

* Read before the Omaha-Douglas County Medical Association, 1905.

use of such remedies as cocaine, oxalate of cerium, carbolic acid, essence of pepsin, lime-juice and pepsin and a host of others, which occasionally give relief in the milder form of vomiting.

In some cases in which malpositions of the uterus have been found and rectified, the condition has been ameliorated so that the patient's life could be sustained until the time when things naturally mend, or until such a period as would render possible the induction of premature birth with some chance of survival of the child.

In some instances local application to the cervix of carbolic acid or nitrate of silver or local electrolysis to the cervical canal with a mild current have succeeded in ameliorating the condition and rendering it tolerable.

Where these have failed, some have advised and even carried out instrumental dilation of the os. This is a *remedium anceps*, in that it is liable to be attended by partial separation of the ovum and to be followed by abortion. Particularly is this the case when the dilator is inserted too high and the membranes are ruptured. The emptying of the uterus usually relieves the vomiting, but by so doing in the first six months the life of the fetus is sacrificed, a procedure not justifiable except when, as a last resort, it is carried out to save the mother's life after all other methods of treatment have failed.

The vomiting of pregnancy being a reflex symptom of the uterine disturbances incident to pregnancy, its degree of intensity depends on the severity of the local pathologic conditions, together with the sensitiveness of the nervous system.

It is more severe, therefore, in patients with extremely nervous temperament, and particularly so in those with pronounced pathologic conditions about the uterus. Endometritis, malpositions and lacerations are the local conditions most frequently aggravating the ordinary mild vomiting of pregnancy, and their appropriate treatment will usually relieve the vomiting, if not entirely, at least sufficiently to make the condition tolerable. It is not my intention to dwell minutely on the various therapeutic measures applicable in these cases. I simply desire to call attention to these conditions that in any given case they may be looked for, and, if found, corrected.

It is to be presumed that the physician in examining such a patient will eliminate all other possible sources of uncontrollable vomiting, such as incarcerated hernia, intussusception, pyloric stenosis, cancer or ulcer of the stomach, kidney disease, brain disease or appendicitis, arriving by exclusion at the proper diagnosis corroborated by the results of local examination.

Many physicians treat this vomiting in a routine manner without paying due regard to the conditions underlying or aggravating it.

When no local disease or malposition is found, in other words, in a simple case of vomiting of pregnancy, I usually advise my patient to stay in bed at least an hour after breakfast, and prescribe ingluvin, 10 grains before and after each meal. The recumbent posture, with restriction of the morning meal, and some pepsin compound is all that is necessary to control the milder forms of vomiting of pregnancy. In the more severe forms usually, but not always, some pathologic condition, such as already indicated, will be found, which, if rectified, will lead to satisfactory results. At the Nashville session of the American Medical Association a physician from Ohio related the details of a case in which, after everything he and others could think of had been tried

without success, it was decided to empty the uterus in order to save the patient's life. Electricity was used, and the applications were made at regular intervals, either daily or on alternate days. The author reported the effects of each application in about the following language: "After the first two applications there was no perceptible effect. After the third application there was some amelioration of the symptoms. After the fourth application the vomiting ceased. After the fifth application pains began and after the sixth application the fetus was expelled."

I criticised him for having made the fifth and sixth applications of electricity, thereby causing the expulsion of the fetus, when the fourth application, by relieving the vomiting removed the excuse for the abortion.

In this connection I wish to report a case which occurred in my practice three years ago, and which aptly illustrates the point I made in the above criticism.

Patient.—Mrs. —, aged 39, mother of three children, called me in February, 1902, on account of persistent and violent vomiting. She had missed her last menstrual period and thought herself about six weeks pregnant.

Examination.—This proved her suspicions to be correct, and showed a lacerated, displaced cervix, with normal position of uterus. The bowels and kidneys were normal, as was also every other possible source of trouble.

Treatment.—Ingluvin was given before and after meals, absolute rest in bed was insisted on, and a diet of milk and broths was ordered. This being of no avail, phenolated essence of pepsin with bismuth and hydrocyanic acid were given, with like result. The cervical canal was treated with carbolic acid and iodine, and a glycerin tampon applied. Feeding by the mouth was stopped and rectal alimentation resorted to. The vomiting still continued without abatement and with evidences of increasing debility. At this stage I was unavoidably detained at home by sickness for a week, during which time she was in the care of two other reputable physicians, one of whom tried to relieve her by dilating the os. Her condition did not improve, the vomiting continued and when I returned I found her extremely emaciated, losing flesh and strength rapidly, vomiting blood and mucus and with her teeth loose, gums raw, sore and bleeding, her mouth emitting a fetid odor. Inquiry elicited the fact that neither of the physicians had given any mercurial preparation, so that this condition of the mouth must be interpreted as an aggravated form of the salivation so often attending the earlier months of pregnancy, just as the vomiting was an aggravated form of the emesis ordinarily occurring in this condition.

Things had come to a pass where something radical had to be done to save the patient's life, so with her and her husband's consent, reluctantly given, I proceeded under anesthesia and with strict asepsis to dilate the os thoroughly; I introduced a bougie into the uterus up to the fundus and left it there. The vagina was packed with iodoform gauze and the patient left quietly in bed. Within two hours pains began and continued for about thirty-six hours; as no hemorrhage occurred and the temperature remained normal, I left the bougie in the uterus for forty-eight hours. During this time the vomiting had ceased and when I removed the vaginal tampon I found nothing had been expelled from the uterus. I now carefully removed the bougie and again reassured myself by careful examination of the presence of pregnancy. The vomiting having ceased, I told my patient that I would desist from all further attempts to empty the uterus and would now try to save the child as well as the mother. I gave a uterine sedative, kept the woman in bed for ten days, and began a process of feeding. She retained the food, the vomiting did not recur, and as soon as the gums were restored to a good condition by appropriate local treatment she began taking solid food. The further course of the case was uneventful and on Oct. 4, 1902, I had the pleasure and satisfaction of delivering the patient in an easy labor of a healthy, living child, which to-day, three years later, is hale and hearty.

What I want to emphasize is the fact illustrated by the

two cases cited above, that when in pregnancy, for just and lawful reasons, the emptying of the uterus is resorted to, and during the operation improvement in the fundamental conditions supplying the excuse for the abortion occurs, it is the duty of the physician, if not too late, to cease in his attempt to cause abortion, and to make all efforts to save the child as well as the mother.

This could probably have been done in the first case cited, but evidently it was not thought of.

THE OPERATIVE TREATMENT OF FRACTURES.

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In no class of surgical cases is there demanded the mechanical skill, the anatomic knowledge and the perseverance that is required in the treatment of fractures. It has, at all times, received close attention and careful study; yet it is perfectly evident, from the great number of cases which so frequently tax our ability to the utmost, and are followed not only by unsightly deformities, but by poor functional results, that a decided change from the heretofore conservative methods of treatment is necessary in many cases if perfect approximation of the fractured ends of the bone and good functional results are desired.

Since the introduction of the x-ray as a means of diagnosis, the difficulty of complete reduction and perfect approximation of the fragments is shown, and masses of bone, which were formerly termed "exuberant callus," prove to be due to the displacement of the fractured ends and comminution of the fragments at the seat of fracture.

In a great number of cases the desired result—complete reduction and perfect approximation—can be obtained by only one means, the direct replacement and fixation by operative methods. The treatment of fractures by open operation is one of the many advances that has been made in recent years. It is only within the past decade that surgeons have realized that dissolution in continuity of bone can be treated in the same manner as dissolution in continuity of other structures; that is, by direct restoration and perfect coaptation of the parts; and that operations on the osseous system can be performed with as great a degree of safety as in operations involving the soft parts. Many authorities are inclined to object to the advisability of operating on closed fractures. They consider that in all cases good functional results can be obtained by position and fixation in splints after proper reduction, and that the converting of a closed fracture into an open one is not only unnecessary, but in most cases dangerous, on account of the risk of sepsis taking place. There is a growing tendency, however, among surgeons of the present day to operate on many cases of closed fractures which can not be perfectly reduced, or which, when reduced, fail to remain so, as shown by the x-ray photograph, and these men have from time to time reported their results.

It is with the laudable object of adding to the literature of the subject that the present paper is presented to the medical profession. While the operative treatment of closed fractures was the primary incentive for writing this paper, the operative treatment of open fractures, ununited fractures, etc., will be considered.

Through the courtesy of Drs. Bolles, Cushing, Monks,

and Lund of the Boston City Hospital, and Dr. H. C. Deaver of St. Mary's Hospital, Philadelphia, I have been afforded the permission to report the series of cases on which this article is based. I observed the cases while house surgeon at the two above-mentioned institutions. The series consists of 23 cases, the nature of the fractures being as follows: Closed fractures, 8 cases; open fractures, 12 cases; ununited fractures, 2 cases; and deformity following fractures, 2 cases.

In the operative treatment of fractures the subject may be classified as follows:

- I. The Operative Treatment of Closed Fractures.
- II. The Operative Treatment of Open Fractures.
- III. The Operative Treatment of Ununited Fractures.
- IV. The Operative Treatment of Separated Epiphysis and Fractures Associated with Dislocations.
- V. The Operative Treatment of Deformities Following Fractures.

I. THE OPERATIVE TREATMENT OF CLOSED FRACTURES.

Until recent years the only method of treatment of closed fractures was the employment of external dressings, as splints, plaster-of-paris casts and bandages, etc., with and without traction, with the object in view of approximating the fractured ends of the bone, correcting displacements and holding in place fragments which tend to unite with deformity. While in general, many cases recovered with good anatomic and perfect functional results, in other cases the subsequent deformity, the failure to obtain union and the frequent loss of function show only too well that perfect results can not be obtained at all times by conservative measures. The constant use of the x-ray and examination under anesthesia show that in many cases proper reduction can not be obtained and the fractured ends held in perfect approximation by the ordinary methods of external fixation.

The perfection of surgical technic and wound asepsis has produced extremely rapid progress in all branches of surgery since the introduction of Lister's method of antiseptics. Their results are strikingly seen in the great reduction of mortality following the antiseptic methods in the treatment of compound fractures and the comparatively little risk in all operations on bones, as osteotomy, resection, etc. Since it is now possible to operate almost always without wound infection, closed fractures may be operated on with as little risk as operations on other parts of the body.

Scudder's statistics on the results obtained in the non-operative treatment of fractures are interesting. They are based on the observation of cases, three to five years after injury, treated at the Massachusetts General Hospital. In fractures of the hip, the results were poor in 81 per cent. In fractures of the thigh, perfect functional results were obtained in children; in adults, 31 per cent. were perfect, and 69 per cent. imperfect, and in old age none was perfect. In fractures of the leg, poor results were obtained in 60 per cent. of closed fractures, and poor results in 79 per cent. of compound fractures. Since the introduction of aseptic methods of treatment of compound fractures, the mortality has fallen from 68 per cent. to 2 or 3 per cent. at the present time.

Senn states that "the adoption of rigid antiseptic precautions in the treatment of compound fractures has reduced the mortality from 50 to 70 per cent. almost to nil, and the same has rendered operations for ununited fractures nearly devoid of danger."

The financial depreciation of the patient is to be considered in the treatment of fractures, especially those of the lower extremity. Mr. Lane considers that the financial depreciation of the laborer as a mechanic amounted in fractures of the tibia and fibula to nearly as much as 70 per cent. of his original value, when treated by non-operative methods. This he ascribed as being due to alterations in the line of pressure through the several joints of the lower extremity, resulting from the somewhat complicated deflection of the lower fragments from their original relationship to the upper. Mr. Lane argues that to pursue the present mode of treatment was highly improper, since by operative measures, entailing a minimum of risk to the patient, the fragments could be brought into apposition and so retained with perfect accuracy, with the result that the skeletal mechanics of the individual remain as perfect after the injury as before.

While it is true that there are many surgeons who entirely condemn the operative treatment of closed fractures, it is an undeniable fact that there are many surgeons, and their numbers are increasing, who consider this method justifiable in all complicated fractures, and in many fractures in which perfect reduction and approximation can not be obtained. Golding-Bird states that "the merit of the operative interference in closed fractures does not stand on any different footing from that of other surgical procedures; its value should be assessed, not by one fact only, but by all those results of its employment taken together, which tend for the good of the patient and the complete reduction of the fracture, which must and can alone determine the right course to adopt."

The results desired in the treatment of all fractures are: (1) The perfect reduction, approximation and retention of the fractured ends of the bone; (2) the prevention of subsequent deformity; (3) the retention of perfect alignment of the fragments; (4) the prevention of "exuberant callus"; and (5) the prevention of non-union and pseudarthrosis.

Many conditions prevent the accurate adjustment of the fragments in fractures of the long bones. These not only prevent reduction, but are often the cause of deformity, delayed union, non-union, neuritis, paralysis, muscular atrophy, loss of function and impairment of the general health. The most frequent obstacles to the complete reduction of the fractured ends and their permanent retention are: (1) The interposition of soft parts, as muscles, nerves, blood vessels and fascia; (2) the retraction of normally stretched tissues which after fracture have no resistance offered to them; (3) the piercing of adjacent muscles and fascia by the sharp ends of the broken bones; (4) the displacement and interposition of comminuted fragments; and (5) hemorrhage into and inflammation of the soft parts. This last condition has always been greatly underestimated. Mr. Lane states that "the bruised and lacerated soft parts are infiltrated, often very extensively, with blood, and are in a condition of very considerable inflammation and tension. The fragments of bone can not be placed or retained in accurate apposition by any process of manipulation or of extension, or of fixation in splints, castings, etc. We have had enough experience now to know that, providing the fragments have become displaced from one another, whether the fracture be spiral, transverse or oblique in direction, the amount of displacement, overlapping or alteration of the axes of fragments on one another varies with the hemorrhage

into and swelling of the lacerated soft parts which surround the bone or bones. We also know that if these soft parts are allowed to remain in their shortened condition for any length of time, the amount of force required to restore them to their original length is necessarily very great, and varies directly with the length of the interval following the fracture.

CLOSED FRACTURES MOST SUITABLE FOR OPERATIVE INTERFERENCE.

While it is not advisable or necessary to operate on all closed fractures, yet there are certain bones which, when fractured, generally demand operative interference if we would obtain the best anatomic and functional results. Many authorities still maintain that no closed fracture should be converted into an open one, but there are some fractures in which even the most conservative surgeons will admit that were it not for the danger of sepsis intervening, better functional results could be obtained by operation. Among such may be mentioned the following: (1) Fractures of the neck of the femur in patients under 50 years; (2) supracondyloid fractures of the femur; (3) fractures of the patella; (4) spiral and oblique fractures of the tibia, either alone or in combination with fractures of the fibula; (5) fractures of the clavicle, with marked displacement; (6) fractures of the upper end and of the condyles of the humerus; (7) fractures of the olecranon, with marked separation of the fragments; (8) fractures of the middle of the radius; (9) fractures of the spine and skull. In all cases in which marked comminution of the fragments is present and when reduction is impossible, in oblique and spiral fractures of the bones of the extremities, operative intervention is justified. Many of the deformities, pseudarthrosis and loss of function seen to follow fractures, will thus, in most cases, be obviated. The unsightly deformities which so seriously destroy the usefulness of the part and predispose to refracture will be prevented. Fractures complicated by severe injury to adjacent structures urgently demand operation. Under this heading may be included fractures, in which pressure is brought to bear on neighboring viscera, nerves and blood vessels, fractures associated with dislocations, and fractures involving joints.

Not only does non-union often result from misplaced fragments, but excessive callus formation is bound to occur. Nerves and blood vessels are liable to be involved in this excessive attempt of nature to repair the loss of bony continuity, and involvement of such structures is seen in the frequent neuritis and edema of the parts following malunion. When this excessive callus is formed at the seat of fractures involving joints, impairment and at times total loss of function is the result. Excessive callus is formed only when perfect approximation of the fragments is not obtained.

ADVANTAGES AND DISADVANTAGES OF THE OPERATIVE TREATMENT OF CLOSED FRACTURES.

Compared with the dangers of sepsis, which is the chief argument against operation, the advantages to be obtained by the surgical intervention in closed fractures, are manifold. They may be enumerated as follows: (1) The patient is at once relieved from any pain which might be caused by the movement of one fragment on another; and of the discomfort due to tension, caused by the extravasated blood. (2) Accurate approximation and retention of the fractured ends is possible by means of instruments and appropriate methods of internal and external fixation. (3) Shortening and de-

formity are prevented. (4) Clots of blood and detached fragments of bone may be removed and neighboring structures repaired. (5) Excessive callus formation is prevented by accurate approximation, and in fractures involving joints subsequent limitation of motion and deformity are prevented. (6) Pressure on neighboring structures is removed. (7) Associated dislocations may be properly reduced. (8) The period of disability is considerably lessened, as union is practically by first intention, and consequently very rapid and perfect. (9) The skeletal mechanics of the patient are left in the condition in which they were before the injury.

The disadvantages of the operative treatment of closed fractures are: (1) The liability of infection; (2) the danger of necrosis of the fractured ends; (3) the presence of a skin scar.

These disadvantages, however, are outweighed by the advantages, and in all cases in which complete reduction, perfect approximation and retention can not be obtained by conservative means, when complications exist, and when the preservation of the skeletal mechanics, especially in laborers, is an important factor, there should be no hesitancy in converting a closed fracture into an open one, for the patient's good.

TIME OF THE OPERATION.

In certain varieties of fractures in which it is known from experience that perfect reduction and retention can not be obtained by conservative means, as in spiral and oblique fractures of the middle and lower third of the tibia, it is advisable, after the preliminary x-ray photograph has been taken, to operate immediately after the injury, providing the patient has suffered no shock at the time of the accident. By so doing, reduction will more easily be accomplished, the edema of the soft parts will be avoided, the formation of fibrous tissue between the fractured ends and contraction of the soft parts will be prevented, approximation of the fractured ends can be accomplished without the necessity of resection and consequent shortening, and healing by first intention will be the rule. Some authorities prefer to wait for a week or ten days before operating, until the effused blood has been absorbed. By so doing, they claim that the risk of infection is reduced to a minimum.

TECHNIC OF THE OPERATION.

There are many methods of internal fixation of the fractured ends of the bone in use by various surgeons. The technic of exposing the fragments is practically the same in all cases, minor changes being required to suit the individual case. In some cases internal suture of the fragments is unnecessary, while in other cases permanent complete reduction and perfect approximation can not be obtained without some method of internal fixation. Two classes of cases will therefore be described:

1. *Repair Without Internal Fixation.*—In this class are included: (a) Fractures in which reduction is prevented by the interposition of soft parts between the fractured ends of the bone. (b) Fractures in which there is irregularity of the fractured ends, so that, when the fragments are brought into apposition they become locked. (c) Fractures in which apposition can readily be maintained by external splinting after reduction has been accomplished. The best example of this class is a dentated supracondyloid fracture of the femur. (Case 1.)

The skin for a considerable distance above and below the seat of the fracture should be carefully cleaned

with soap and water and the hair removed. The part is again cleaned with tincture of green soap and sterile water, and then with 70 per cent. alcohol. Exsanguination by means of a tourniquet or an Esmarch bandage is not advisable. While its advantages are considerable during the operation by giving a bloodless field, subsequent bleeding from large and moderate-sized vessels is not recognized, and is liable to promote wound infection, not only on account of the blood clot which forms, but by the inevitable formation of a small sinus along which infection may travel from the surface. All bleeding should be controlled as it arises. The incision through the skin and superficial fascia should be sufficiently large to permit of thorough inspection and to allow of protrusion of the fractured ends through the wound, if necessary. The muscles should be separated in their intermuscular planes, when possible, and if not, in a direction parallel to the course of their fibers. Nerves and blood vessels should be carefully avoided. On reaching the periosteum, it will be found to be separated to a variable extent, and at times torn completely across. If the periosteum is not torn, it should be divided longitudinally, and the seat of the fracture exposed by retracting its edges. All bleeding should be controlled, and any blood clot present should be removed by means of dry sponges. Intervening structures should be carefully disengaged from the rough edges of the fragments and placed in their normal relations, suturing torn structures with fine catgut, if necessary. Detached fragments of bone should be removed. If the operation is performed shortly after the injury, it will be found possible by extension and manipulation to bring the fractured ends into approximation and lock them together without resecting the fractured ends. If this is possible, an assistant should hold the part in its normal position from this stage until the operation is completed and the external splints have been applied. Irrigation of any kind is not advisable, as all irrigating solutions tend to lower the vitality of the tissues. Blood clots can best be removed by dry gauze sponges. The edges of the periosteum, the muscular layers and subcutaneous tissues should be united by interrupted or continuous layers of fine catgut, and the skin by interrupted or subcuticular horsehair or silkworm gut. The wound should then be sealed with a collodion dressing and a dry protective dressing of gauze applied external to this. Immobilization should be made by appropriate splints, or by a plaster-of-paris dressing, care being taken as to the position of the parts, and also that the joints above and below the seat of fracture are put at rest.

2. *Repair with Internal Fixation.*—While in a small number of cases perfect approximation may be obtained without the use of internal methods of fixation, the majority of cases requires it. This is especially so in spiral fractures of the tibia, in fractures of the clavicle, humerus, radius, patella and olecranon. The technic of operations on the patella is so perfect and the procedure is so well established, that it will not be described. The part is prepared aseptically and the fractured ends of the bone exposed, as in the methods above described. If it is found necessary to resect the ends of the fragments, in order to bring them into apposition, this can best be performed by protruding the ends through the wound, and then resecting as desired. This is feasible, however, only when one bone occupies the part involved, as in a fracture of the humerus or femur. In other cases the resection must be performed *in situ*. If the operation is

performed shortly after the time of the injury, resection is rarely, if ever, necessary. It is only in those cases in which, for some reason or other, the operation is not performed for several weeks after the time of the injury, fibrous tissue has formed about the ends, retraction of the tissues and shortening of the limb has occurred, that resection is required.

While some surgeons prefer to make the resection *in situ* by means of a Jeffray's chain saw, a Gigli saw, a Wyeth's saw, or a Hey's saw, the author considers that less damage is done to the soft structures, and particularly to the periosteum, by a chisel. This is preferred, because there is no danger of wounding the periosteum, separation of the periosteum from the bone is not required to such an extent as when a saw is used, the line of resection can be made at any angle, and the ultimate shortening is much less. The line of fracture, in most cases requiring operation, is oblique or spiral in direction, and as resection can be performed with saws only in a more or less transverse direction, the loss of bone by this method is unnecessarily great. Resection should be so performed as to leave the limb in its normal position, as to its rotation and its axis. When fibrous tissue has formed between the fragments, it should be removed by means of a curette or a gouge and the ends of the bone freshened by removing a small portion with a chisel. While a transverse section is the best for suturing and permanent approximation, it is in most cases performed at a too great sacrifice of the length of the bone, and should be used only when necessary. Small defects lost by comminution of the fragments will be repaired by the periosteum. The chief aim in operating should be to bring together, by direct fixation and complete immobilization, the different anatomic structures, permanently into their normal relations, which is always the ideal process of repair.

METHODS OF INTERNAL FIXATION.

When perfect reduction and approximation have been accomplished, internal fixation may be performed by one of various methods, depending on the selection of the surgeon. It may be stated here that the following methods of internal fixation are applicable, not only in recent closed fractures, but also in open fractures, in cases of non-union, mal-union and pseudarthrosis.

The mechanical appliances for securing internal fixation may be divided into the following classes:

1. Fixation by means of absorbable sutures. In this class are included sutures of plain catgut, chromicized catgut, kumol catgut, iodinated catgut and kangaroo tendon. Of these the only ones which will hold the fragments in place until union takes place are heavy (No. 4) chromicized catgut and kangaroo tendon.

2. Fixation by means of non-absorbable sutures. These consist of silk, silkworm gut, Pagenstecher's thread and iron and silver wire. When any of these sutures are used, they are generally retained permanently and become ensheathed.

3. Fixation by means of bone and metallic ferrules, ivory, bone and metallic plugs to be placed in the medullary cavity; and ivory, bone and metallic nails.

4. Fixation by means of absorbable or non-absorbable sutures combined with ligating by means of silver or iron wire passed circumferentially around the fragments.

5. Fixation by means of instruments which consist of specially designed plates and screws, and are used in different methods of resection. In this class are included the instruments of Keetley, the metallic double

staple of Gussenbauer, the plates and screws of Agnew and those of Steinbach.

6. Fixation by means of Parkhill's clamps. This method consists in fixing the fragments by means of two screws driven into the ends of each fragment and held immovable by means of external plates.

Of the various methods given above, there is no one which can be used without some external retentive apparatus, as splints or plaster-of-paris dressings. While all the methods have their advantages, the writer considers that the use of an absorbable suture, preferably, heavy (No. 4) chromicized catgut, meets all the requirements of an ideal suture for retaining the approximated ends in position, and has a greater range of applicability than any of the other methods in use. Non-absorbable sutures very frequently prove an irritant to the tissues, lower their vitality, increase the chance of infection, and, very frequently, require subsequent removal. The same may be said of bone and metallic ferrules, intramedullary plugs and metallic nails and screws. A great danger in the use of silver wire is the tendency for the wire to break, either at the point of twisting, or more frequently, it is cut by the sharp edge of the bone hole by slight strains, which so often occur before the external splint or plaster-of-paris dressing has been applied. The objections to the buried plates of Steinbach and of Agnew, and the method of Keetley, are that the screws very frequently pull out; these methods require a second operation for the removal of the plates, and the methods of resection used necessitate too great sacrifice in the length of the bone. These methods and that of Parkhill do not prevent considerable lateral mobility, and the presence of external openings, along the site of the screws in the latter method, is a constant source of danger in the production of infection.

As all methods require some form of external retentive apparatus, it would seem that the ideal form of internal fixation is the heavy (No. 4) chromicized catgut. This is condemned by some authorities on account of the stretching of the sutures, which may occur while applying the external dressing. This danger, however, is very small, while, on the other hand, it is an absorbable suture where the risk of infection is small, the direct approximation is perfect by this means, a secondary operation is not required, and the parts are left in an anatomically perfect condition.

In Cases 1, 9, 18, 19, 20 and 23 no bone suture was used. In Cases 2, 3, 4, 5, 6, 7, 8, 10, 11, 21 and 22 chromicized catgut (No. 4) was used to hold the fragments in apposition. In Cases Nos. 15, 16 and 17 silver wire was the suture used.

TECHNIC OF SUTURING WITH CATGUT.

Having arrived at the stage where the fractured ends are in perfect apposition, the suture holes should be drilled with a Lentz, Brinard, Hamilton or Gaillard bone drill. The suture holes should be placed one-fourth to one-half inch from the fractured edge and at intervals of every half inch. When the resection is performed *in situ* the suture holes should be made only through the compact bone into the medullary cavity, and not through the entire diameter of the bone. If the ends have been brought through the wound for resection, the holes may be made through the entire diameter of the bone. The catgut sutures may be introduced through the suture holes by means of a silkworm gut carrier, which is first passed on a curved needle reversed. After all the sutures have been introduced and the fractured ends approximated, an assistant should be assigned the

task of holding the extremity carefully until the final external dressing has been applied. The sutures are now tied securely and the excess cut away. The periosteum is united by interrupted catgut sutures. The overlying soft parts are united as described above and the wound closed without drainage. A collodion dressing is then applied, and immobilization secured by a plaster-of-paris dressing, so applied as to prevent angularity or rotation at the seat of the fracture and fixing the joint above and below the seat of fracture.

Immediate suture of the fragments is not necessary in all varieties of fractures. In some fractures about joints the fragments are so small, as in a fracture of a condyle of the humerus or of a malleolus in a Pott's fracture, that they may be held in perfect apposition by suture of the periosteum. For this purpose medium-sized (No. 1 and No. 2) chromicized catgut may be used and the fragments permanently retained in place by a suitable external splint or plaster-of-paris dressing.

The external dressing should be applied in such a manner as not to require a change throughout the entire treatment. If plaster of paris is used a window may be cut over the seat of fracture, so that the wound may be inspected when necessary, and the skin sutures removed at the proper time.

II. THE OPERATIVE TREATMENT OF OPEN FRACTURES.

The results obtained by conservatism and aseptic surgery are strikingly shown to-day in the treatment of compound fractures. Prior to the introduction of antiseptics and ascepsis, amputation of the limb above the seat of a severe compound fracture was the rule. Later, when conservative methods were introduced, excision of joints near the seat of fracture was invariable, while amputation was the measure of last resort. Death from sepsis was very frequent. The results of conservative and aseptic surgery of to-day are shown by the statistics of Scudder, who states that "the mortality has fallen from 68 per cent. a few years ago, preceding the introduction of antiseptics, to 2 to 3 per cent. at the present time." To-day, compound fractures, if properly treated, are attended by a very low mortality, and in most cases a good functional result is obtained.

In the treatment of all compound fractures attempts should be made to disinfect the wound thoroughly, so far as possible, to restore the parts to their anatomic relations, to institute adequate drainage and to immobilize the part until union is effected.

TECHNIC OF THE OPERATION.

The limb above and below the wound should be shaved and thoroughly cleaned with tincture of green soap and sterile water and 70 per cent. alcohol. The wound should then be thoroughly irrigated with normal salt solution. It is advisable in all cases to enlarge the wound and explore the seat of fracture. Torn muscles and nerves should be repaired and all bleeding vessels ligated. If the external wound is small and was evidently made by the fracturing force, rather than by a sharp fragment of bone, the chances of infection are much less. If one of the fractured ends protrude through the wound, the chances of carrying infection are great, and its end should be trimmed off with rongeur forceps until healthy clean bone is reached. Internal fixation should be performed with heavy chromicized catgut, as in the method detailed in the treatment of closed fractures. The remaining technic differs from that in closed fractures only in the fact that drainage should be used in every case.

If the chances of infection are great, internal fixation is preferably made with silver or iron wire, which should subsequently be removed. Drainage is best obtained by means of rubber tissue or a cigarette drain. A sterile gauze dressing should be applied and immobilization secured by a plaster-of-paris splint. A window should be cut through the latter so that frequent observation and dressing of the wound may be made. Drainage may be dispensed with in a few days if infection has not occurred. For the purpose of protecting the plaster-of-paris dressing, in case irrigation of the wound is required, the "window" and the surrounding plaster should be covered with rubber tissue. When wire has been used to secure internal fixation, it may be removed by a subsequent operation after union has become firm.

III. THE OPERATIVE TREATMENT OF UNUNITED FRACTURES.

In the class of ununited fractures may be included all cases of delayed union and pseudarthrosis. The chief causes of non-union are: (1) Failure of approximation of the fractured ends, due to the intervention of muscles, nerves, blood vessels, etc.; (2) muscular action; and (3) faulty immobilization. Constitutional diseases play but a small part in the prevention of union. Examination in such a condition shows the fractured ends to be separated and the intervening space filled by muscles, etc., or fibrous tissue. The ends of the bone are smooth and a condition of pseudarthrosis is frequently present.

TECHNIC OF THE OPERATION.

The technic of the operation consists in rendering the skin aseptic and exposing the seat of the fracture by the method given in the treatment of closed fractures. The periosteum should be divided longitudinally and its edges retracted. All fragments of bone, fibrous tissue, etc., should be removed by means of a curette, gouge or chisel. Care should be taken not to injure the periosteum. Portions of the fractured ends should be removed *in situ* by means of a chisel until healthy bone is reached. Frequently, in order to obtain approximation of the fractured ends, it is necessary to remove considerable portions of the bone. In case the tibia or the radius is the seat of the fracture, it is frequently necessary to remove a section of its fellow-bone in order to obtain approximation and to prevent a change in axis at the seat of the fracture. Internal fixation should be made by means of heavy chromicized catgut according to the method given above. The wound should be closed without drainage, and a well-fitting plaster-of-paris dressing applied, which secures perfect immobilization at the seat of the fracture and of the joints above and below the fracture. In this class of cases union takes place more slowly than in recent fractures.

IV. THE OPERATIVE TREATMENT OF SEPARATED EPIPHYSIS AND FRACTURES ASSOCIATED WITH DISLOCATIONS.

The chief difficulty met with in the treatment of separation of the epiphysis is due to the fact that an accurate diagnosis is often impossible, and the condition can not be determined to any degree of certainty by the x-ray, on account of the transparency of the epiphysis to the x-ray. The most accurate results in diagnosis are obtained by examination under anesthesia.

When it is determined by proper manipulation under anesthesia that a displaced epiphysis can not be replaced, or fails to remain in its proper position when reduced, operative intervention is indicated if we wish to prevent bones and joints from subsequently becoming deformed.

Replacement of a displaced epiphysis after aseptic exposure is followed in most cases by union and normal growth of the epiphysis.

TECHNIC OF THE OPERATION.

The operative treatment differs from that used in the treatment of fractures in the adult. The introduction of sutures, and especially of metal and ivory screws, nails and pegs, is often followed by permanent atrophy of the epiphysis and subsequent failure of development of the involved limb. It is advisable in these cases, after exposure of the epiphysis under rigid aseptic precautions, to suture the torn periosteum, and if the capsule of the joint is ruptured, it should also be repaired. After approximation of the epiphysis and suture of the torn periosteum and capsule, the part should be held by an assistant until the operation is completed and the parts immobilized by a plaster-of-paris dressing.

Fractures associated with dislocations have always been followed by considerable deformity and impairment of the joint functions, when treated by non-operative methods. It seems rational that in cases in which the dislocation can not be reduced and the fracture treated at the same time, that recourse should be made to operative intervention. Under aseptic precautions the joint should be exposed, the capsule opened, the head of the bone replaced and the tear in the capsule repaired. If the associated fracture is one that is difficult to treat by non-operative methods, as a fracture of the surgical neck of the humerus combined with a dislocation of the head of the same bone, the fracture should also be exposed and the fractured ends sutured together with chromicized catgut. The part should then be immobilized in a plaster-of-paris dressing. Massage and passive motion may be instituted earlier under this method of treatment, and the chances of securing a movable joint, and absence of deformity will be greater when the condition is treated by operative measures.

V. THE OPERATIVE TREATMENT OF DEFORMITIES FOLLOWING FRACTURES.

The deformities following fractures may consist in (1) shortening; (2) shortening combined with alterations of rotation of the distal fragment; (3) angularity at the seat of fracture; and (4) limitation of motion, due to changes in the normal relations of the joint surfaces. Deformities most frequently occur in fractures of the clavicle; in fractures of the lower end of the humerus; in Colles' fractures; in fractures of the lower end of the femur; in spiral fractures of the tibia; and in Pott's fractures. In the correction of deformities following fractures, depend to a great extent the future usefulness of the patient, and in laborers it is of the greatest importance to leave his skeletal mechanics in as normal condition after the injury as they were before.

TECHNIC OF THE OPERATION.

While some deformities following fractures may be corrected to a certain extent by osteotomy (subcutaneous), or by the resection of a wedge-shaped piece of bone, the best results can only be obtained by exposing the seat of the former fracture and resecting the deformed area of bone. The operation should be performed under aseptic precautions. The site of the deformity should be exposed as detailed above. Care should be taken to separate the periosteum from the bone without tearing it. The section of bone may best be removed with a Gigli chain saw or with a chisel. The plane of section and the amount of bone to be removed will depend on the individual case. In a double bone limb it may

be necessary to remove a section from the fellow-bone, to allow of approximation of the resected surfaces, and to prevent angularity at the seat of the fracture. This, of course, produces some shortening of the limb, but it is preferable to angular deformity. An intact periosteum may, however, fill in the gap between the resected ends, thus not necessitating resection of the fellow-bone. As frequently happens, however, the periosteum is destroyed to a certain extent at the time of the injury, and has been replaced by fibrous tissue, so that in this event regeneration from the periosteum may not occur, or at best it will be greatly delayed. In patients in whom the element of time is a consideration, resection of the fellow-bone is advocated. After resection, the ends may be held approximated by means of heavy chromicized catgut. The further technic is the same as that of recent fractures.

(To be continued.)

FURTHER STUDIES ON STREPTOCOCCUS INFECTIONS.*

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About two years ago Dr. Weaver and I¹ showed that the blood serum from patients with scarlet fever has no streptococcal power during life in any stage of the disease. Through the researches of Lemoine, Slawyk, Hektoen and others we know that streptococci occasionally are found circulating in the blood of these patients and that the patients in whose blood cocci are found often make an uneventful recovery. Joehmann,² however, is of the opinion that the prognosis is very bad when streptococci are found in the blood.

What is true of scarlet fever may equally well be said of tonsillitis. Here, too, streptococci may invade the blood stream, but, in spite of this fact, the patient may make a rapid and satisfactory recovery.³

In erysipelas and in many wound and puerperal infections the tissues are invaded by virulent streptococci, but in a great majority of these cases the organisms disappear sooner or later and the patients make a complete recovery.

We know that normal human serum has no streptococcal powers. Hence, the disappearance of the cocci from the blood and tissue can not be explained by assuming that the serum loses something during the height of the disease, but regains this substance as convalescence sets in and thus destroys the cocci. It is evident, therefore, that we must look for some other agent than the serum alone to account for the disappearance of the cocci from the blood and tissues during convalescence. According to Metchnikoff, Denys and Leclef, Bordet, Marchand and others,⁴ this agent is found in the phagocytes. This view has not been universally accepted, although experiments show that it explains the facts better than any other theory that has been advanced. In a previous paper⁴ I was able to show that the

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¹ Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. Trans. Chicago Path. Soc., 1903, v. p. 285. *Medicine*, 1903, ix, p. 515.

2. *Arch. f. klin. Med.*, 1903, v. 78, p. 209.

3. Rosenow, *Am. Jour. of Obstetrics*, 1905, vol. I, p. 766.

4. For a more complete review of the literature on phagocytosis see *THE JOURNAL A. M. A.*, 1905, vol. xlv, p. 198.

leucocytes are the most important, if not the only, factor concerned in the destruction of streptococci in the body of infected rabbits and guinea-pigs. The view was expressed there that in man also the leucocytes play an important rôle in combating infection by these organisms, although not much work had been done on human infections.

In this paper are set forth the results of further studies of streptococcus infections in human subjects in the hope of determining just what factors are concerned in the destruction of the invading cocci, and an attempt is made to analyze more fully this phenomenon. In all instances where blood was used it was drawn from the vein at the elbow by means of a Luer syringe and defibrinated by gently whipping with a sterile wire. If the defibrinating is carefully performed not a very large proportion of the leucocytes are destroyed. In the experiments each tube contained from 0.8 to 1.0 c.c. of blood or serum which was inoculated with one loopful of streptococcus culture and two loopfuls from each tube were plated in glucose agar at intervals. The tubes were always kept in the incubator at 36 C. When highly virulent organisms were used 0.3 to 0.4 c.c. of defibrinated rabbit blood was added to each tube of melted agar to facilitate the counting of colonies, which often are very small if no blood has been added.

Table 1 shows that, although human serum *in vitro* is a good culture medium for streptococci, normal defibrinated blood has a slight streptococidal power. Occasionally we may find a sample of normal blood which destroys many non-virulent streptococci, but the virulent organisms usually multiply in this blood.

TABLE 1.—THE EFFECT OF DEFIBRINATED NORMAL HUMAN BLOOD AND HUMAN SERUM ON STREPTOCOCCI.

| Strepto- cocci. | Defibrinat- ed Blood. | Immed. | 2-3 hours. | Colonies in Agar Plates, 5 hours. |
|--------------------|--------------------------|--------|------------|---|
| 300 | I | 1100 | .... | 160 |
| 300 | II | 3000 | .... | 1060 |
| 300 | IIa | 680 | 675 | 1300 |
| 300 | III | 2600 | 2700 | 3500 |
| 300 | IV | 3000 | 10500 | 2600 |
| 300 | V | 540 | 360 | 240 |
| 300 | VI | 1100 | 500 | 390 |
| 298 | VII | 1600 | 600 | 315 |
| 298 | VIII | 1600 | 600 | 315 |
| 298 | VIII | 600 | 80 | 16 |
| B104 | IIa | 76 | 55 | 510 |
| B104 | III | 1800 | 2800 | Many |
| B104 | IV | 1600 | 3000 | Many |
| B104 | V | 500 | 600 | 900 |
| 381 | VI | 2000 | 2300 | Many |
| 300 | Serum IV | 1400 | 2000 | Many |
| 298 | Serum VII | 1700 | 2500 | 16000 |

Source of streptococci: Strains, 298, 300 and 381 from heart blood of scarlet fever bodies, postmortem. B104 from an abscess in guinea pig; 298 and 300 are not virulent; 381 and B104 have been passed through rabbits and are highly virulent.

Table 2 shows that defibrinated blood from patients suffering from an acute infection has a much greater destructive effect on these organisms than has normal blood.

In these infections the leucocyte count is usually somewhat increased, and it seems that the streptococidal power of the blood *in vitro* is roughly proportional to the leucocyte count. That is, the higher the leucocyte count the greater will be the streptococidal power of the blood. This is a general rule, to which there are, however, a few exceptions, as will be pointed out later. The virulent organisms frequently multiply in these bloods unless the leucocytosis is very high. In no instance could a streptococidal power of the serum alone be detected. It might be objected that we are not dealing here with an actual destruction of cocci, but that the decrease in the number of colonies on the plates is

due to adherence of the cocci to the leucocytes. This objection is ruled out by the fact that the twenty-four-hour plates from tubes containing blood with a high leucocytosis are very often sterile or nearly so.

TABLE 2.—THE EFFECT OF DEFIBRINATED BLOOD FROM CASES OF SCARLATINA, ERYSIPELAS, TONSILLITIS AND PNEUMONIA ON STREPTOCOCCI.

| Strepto- cocci. | Defibrinated Blood. | Colonies in Agar Plates. | | | |
|--------------------|------------------------|--------------------------|--------|------------------|----------|
| | | Leuco- cyte count. | Immed. | 2 to 3 hours. | 5 hours. |
| 300 | Scarlatina I | 10500 | 1100 | .... | 6 |
| 300 | " II | 10600 | 2000 | .... | 140 |
| 300 | " III | 15000 | 690 | 270 | 116 |
| 300 | " IV | .... | 550 | 18 | 3 |
| 300 | " V | .... | 1500 | 300 | 150 |
| 300 | " VI | .... | 1900 | 350 | 43 |
| 300 | " VII | .... | 500 | 32 | 12 |
| 300 | " VIII | 13000 | 1380 | 102 | 9 |
| 300 | " IX | .... | 1200 | 125 | 14 |
| 300 | " X | 13400 | 1250 | 245 | 120 |
| 300 | " XI | .... | 1950 | 150 | 119 |
| 300 | " XII | 10800 | 1800 | 700 | 130 |
| 300 | " XIII | .... | 1800 | 300 | 45 |
| 300 | " XIV | 12300 | 1500 | 31 | 2 |
| 381 | " XV | 15000 | 1200 | 1500 | 3500 |
| B104 | " IV | .... | 600 | 462 | 415 |
| B104 | " V | .... | 1800 | 1800 | 5000 |
| 381 | " VI | .... | 220 | 51 | 1100 |
| 381 | " VII | .... | 130 | 41 | Many |
| 381 | " VIII | 15000 | 360 | 1180 | Many |
| 381 | " IX | 13000 | 2260 | 1950 | Many |
| B104 | " IX | .... | 330 | 190 | 1500 |
| 381 | " X | 13400 | 640 | 290 | 2500 |
| B104 | " X | .... | 400 | 160 | 165 |
| 381 | " X | .... | 320 | 650 | Many |
| 381 | " XII | 10800 | 200 | 2000 | Many |
| 381 | " XIII | .... | 540 | 150 | Many |
| 300 | Erysipelas I | .... | 630 | 64 | 0 |
| 300 | " II | 15000 | 800 | 14 | 4 |
| 300 | " IIIa | .... | 1100 | 41 | 8 |
| 300 | " III | .... | 740 | 120 | 100 |
| 300 | " IV | .... | 1650 | 480 | 150 |
| 298 | " V | 10400 | 3100 | 420 | 92 |
| B104 | " I | .... | 1200 | 1080 | 960 |
| B104 | " II | .... | 96 | 10 | 13 |
| B104 | " IV | .... | 135 | 110 | 480 |
| 300 | Tonsillitis I | 16000 | 620 | 34 | 2 |
| B104 | " I | .... | 300 | 59 | 70 |
| 300 | " II | .... | 1400 | 74 | 6 |
| 300 | Pneumonia I | .... | 2600 | 0 | 0 |
| 300 | " II | .... | 600 | 5 | 3 |
| SERUM. | | | | | |
| 300 | Scarlatina VII | .... | 1500 | 3500 | 10000 |
| 300 | " XIV | .... | 1200 | 1400 | 1700 |
| 300 | Erysipelas II | .... | 670 | 760 | 750 |
| 300 | " III | .... | 700 | 1800 | 6000 |
| 300 | " V | .... | 3000 | 3500 | 5000 |
| B104 | " V | .... | 190 | 360 | 1140 |

It has been thought possible that the serum during the course of an infection which terminates favorably might acquire streptococidal properties for that particular race of streptococci which is responsible for the infection, while at the same time it had no such properties for other races of these organisms. Three strains of streptococcus were, therefore, isolated from erysipelas patients and the serum of each patient tested on the corresponding organism. All of the patients made a satisfactory recovery, but at no time could streptococidal properties be demonstrated in their serum. The defibrinated blood, on the other hand, killed many of the homologous and other organisms as long as there was a high leucocytosis.

We know that there is an intense local reaction in the localized streptococcus infections, and it has been thought by some that there may be lysis of cocci by the inflammatory serum in these areas. It is difficult to confirm or refute this theory on account of the difficulty of obtaining inflammatory serum in the same condition as it is found in the tissues. As it is not uncommon to find blebs of considerable size on the affected parts of erysipelas patients, the fluid from these blebs was taken as the nearest approximation to the inflammatory serum. This blister fluid from several cases of erysipelas was tested for streptococidal properties, but gave negative results.

The importance of a high leucocyte count in the destruction of streptococci by blood is clearly shown by the following experiment:

EXPERIMENT 1.—Ten cubic centimeters of blood were drawn from the vein at the elbow of an erysipelas patient and carefully defibrinated. One cubic centimeter of the defibrinated blood, which contained 9,800 white corpuscles per cubic millimeter, was put into a small test tube, inoculated with one loopful of virulent streptococcus culture and two loopfuls of the inoculated blood, plated at intervals. The remaining eight cubic centimeters were centrifuged and the serum drawn off. We know that the uppermost stratum of centrifugated corpuscles contains a high percentage of leucocytes, because they are thrown down less easily than the red corpuscles. This stratum was therefore drawn off with a sterile pipette and mixed with a small quantity of serum. The resultant mixture contained 17,200 leucocytes per cubic millimeter. One cubic centimeter of this "suspension of leucocytes" was introduced into a small test tube, inoculated, and plates made as before. To complete the experiment one cubic centimeter of the clear serum was put into a small tube, which was likewise inoculated, and plates made at intervals. This experiment was also performed with normal blood and a non-virulent streptococcus. The plates were incubated for twenty-four hours, and the colonies that developed on each were counted with the results shown in Table 3.

TABLE 3.

| Strepto- cocci. | | Leucocyte count. | Colonies on Agar plates. | | |
|--------------------|-----------------------------|---------------------|-----------------------------|------------------|-------------|
| | | | Im- med. | 2 to 3 hours. | 5 hours. |
| B104 | Erysipelas blood..... | 9800 | 390 | 168 | 350 |
| B104 | Suspension erysipelas leuc. | 17200 | 260 | 58 | 21 |
| B104 | Erysipelas serum..... | ..... | 200 | 360 | 1100 |
| 298 | Normal blood..... | 4400 | 1650 | 600 | 315 |
| 298 | Suspension normal leuc..... | 6600 | 1600 | 420 | 62 |
| 298 | Normal serum..... | ..... | 1700 | 2500 | 10000 |

The table shows that both strains of streptococcus used multiplied in the cell-free serum; that the defibrinated blood destroyed many of the non-virulent and some of the virulent cocci, and that the "suspension of leucocytes" destroyed more cocci of either strain than the defibrinated blood. The only difference between the defibrinated blood and the suspension of the leucocytes lay in the fact that the latter contained nearly twice as many leucocytes as the former.

The fact that the streptococcal power of the blood is dependent on the number of leucocytes it contains per cubic millimeter has also been demonstrated by a second experiment.

EXPERIMENT 2.—Shortly after a patient's admission into the hospital, 3 c.c. of blood was drawn from a vein at the elbow and defibrinated. The leucocyte count at this time was 11,000. The blood was divided equally among three tubes, and each tube was inoculated with streptococcus culture and two loopfuls from each were plated at intervals. Shortly after drawing the blood, the patient was injected under the skin of the back with 10 c.c. of an antistreptococcus serum. This brought about an increase in the leucocytosis* up to 15,000, five hours after the injection. Three c.c. of blood was again drawn from the vein at the elbow and its effect on streptococci tested as before. The results of the experiment are shown in Table 4.

The blood drawn after the injection of the serum, when the leucocytosis was high, has a greater streptococcal power than that drawn before the injection. It would not be safe to conclude that this difference in the streptococcal power is due entirely to the difference in the leucocyte count. Some of it may be due to an antitoxic or opsonic action of the serum or to a stimulation of the leucocytes. This supposition loses most of its

force when we consider the fact that the addition of from 1 to 5 per cent. of antistreptococcus serum to defibrinated blood *in vitro* does not increase its streptococcal power, as shown by Dr. Hektoen and myself.

TABLE 4.

| Strepto- cocci. | | Leucocyte count. | Colonies on Agar Plates. | | |
|--------------------|------------------------------------|---------------------|-----------------------------|----------------|-----------|
| | | | Im- med. | 2 to 3 hrs. | 5 hrs. |
| 300 | Blood before injection..... | 11000 | 1100 | 360 | 200 |
| B104 | Blood before injection..... | ..... | 390 | 380 | 4000 |
| 381 | Blood before injection..... | ..... | 100 | 500 | Many |
| 300 | Blood 5 hours after injection..... | 15000 | 1300 | 44 | ..... |
| B104 | Blood 5 hours after injection..... | ..... | 412 | 246 | 800 |
| 381 | Blood 5 hours after injection..... | ..... | 150 | 270 | 3000 |

Wright and Douglas have shown⁶ that phagocytosis takes place only after the bacteria have been sensitized, that is, have been acted on by the opsonin of the serum. There is no phagocytosis in a suspension of washed leucocytes in NaCl solution or in heated serum, regardless of the number of untreated bacteria that are added. This work has been confirmed and extended by Hektoen and Ruediger⁷ and by Bulloch and Atkin.⁸ In view of these facts there should be no reduction in the number of streptococci in a test tube containing a suspension of washed corpuscles in salt solution or in heated serum, and the following experiment shows that such is the case:

EXPERIMENT 3.—Ten c.c. of blood was drawn from a vein at the elbow of a scarlet-fever patient, defibrinated, centrifugated and the serum drawn off. The corpuscles were washed twice in a large amount of NaCl solution, and 0.5 c.c. of the centrifugated corpuscles placed into each of three small tubes containing 0.5 c.c. of normal serum, 0.5 c.c. of heated serum (58 degrees for one-half hour) and 0.5 c.c. of salt solution, respectively. The tubes were inoculated with one loopful of streptococcus culture, and two loopfuls from each were plated at intervals with the results shown in Table 5.

TABLE 5.

| Strepto- cocci. | | Colonies on Glucose Agar Plates. | | |
|--------------------|--|-------------------------------------|-------------|--------------|
| | | Im- med. | 5 hours. | 24 hours. |
| 300 | Washed corpuscles + serum..... | 1500 | 500 | 21 |
| 300 | Washed corpuscles + heated serum..... | 1400 | 500 | Many |
| 300 | Washed corpuscles + NaCl solution..... | 1700 | 3500 | Many |
| 300 | Serum..... | 1200 | 1400 | Many |

The importance of opsonin in the destruction of streptococci is further shown by the fact that the defibrinated blood from two obstinate cases of post-scarlatinal nephritis had no streptococcal powers, although in one of these cases the leucocyte count was 14,000. When the blood from these patients was centrifugated and the corpuscles suspended in serum from a patient who was convalescent and had no nephritis, the resultant suspension had a small degree of streptococcal power, as shown by Table 6.

TABLE 6.

| Strepto- cocci. | | Colonies on Agar Plates. | | |
|--------------------|---------------------------------------|-----------------------------|----------|-------------|
| | | Im- med. | 2 hours. | 5 hours. |
| 298 | Convalescent blood..... | 800 | 450 | 14 |
| 298 | Nephritis blood..... | 720 | 1900 | 6000 |
| 298 | Nephritis corpuscles + conv. ser..... | 850 | 500 | 540 |
| 298 | Conv. washed corp. + neph. ser..... | 725 | 600 | 61 |

The interesting fact came to light in these experiments that the combination convalescent washed corpuscles

6. Proceedings of Royal Soc., 1903, vol. lxxii, p. 357, and 1904, vol. lxxiii, p. 128.

7. Jour. of Infect. Diseases, 1905, vol. ii, p. 128.

8. Proceedings of Royal Soc., 1905, vol. lxxiv, p. 379.

* I am indebted to Dr. Tunncliffe for the leucocyte counts and the injection of the serum.

cles plus nephritis serum has nearly as great a streptococidal power as the defibrinated blood from the patients without nephritis. The corpuscles were washed twice in a large amount of NaCl solution which is usually sufficient to prevent phagocytosis in a suspension of corpuscles in NaCl solution. It is not likely, therefore, that the washing had not been carried far enough. But the results of these experiments seem to indicate rather that the leucocytes as well as the serum from these nephritis patients have undergone some change which renders them less efficient in the destruction of bacteria. In fact, it would seem that the leucocytes have suffered more than the serum. Whether or not these facts may serve to throw light on the cause of some of the terminal infections can not be determined at this time.

It is an interesting question whether the opsonin is increased or not during the acute infections. Normal leucocytes in normal serum take up large numbers of cocci; hence, it is difficult to determine if leucocytes in erysipelas serum, for instance, take up more cocci than those in normal serum. This question had, therefore, to be approached in a different way.

EXPERIMENT 4.—Two sets of tubes were made and 0.2 c.c. of washed corpuscles introduced into each. To one set of tubes were added falling quantities of normal serum and to the other set falling quantities of erysipelas serum. The contents of each tube were made up to 0.4 c.c. with NaCl solution, and to each tube was added 0.4 c.c. of a suspension of streptococci. The tubes were incubated for one hour at 36 C., smears were made and the average number of cocci in each leucocyte determined by counting those in 30 leucocytes. The results are shown in Table 7.

TABLE 7.

| Normal serum. | Phagocytosis. | Erysipelas serum. | Phagocytosis. |
|-----------------|---------------|-------------------|---------------|
| 0.2 c.c. | 33.5 | 0.2 c.c. | 3.1 |
| 0.1 c.c. | 9.4 | 0.1 c.c. | 11.2 |
| 0.05 c.c. | 6.7 | 0.05 c.c. | 8.2 |
| 0.025 c.c. | 4.7 | 0.025 c.c. | 8.9 |
| 0.012 c.c. | 2.2 | 0.012 c.c. | 4.3 |

This experiment indicates that there is a slight increase of opsonin in the erysipelas serum as compared with normal serum. A similar increase of opsonin has been noted by Wright and Douglas⁹ after treating with their staphylococcus vaccine a person afflicted with furunculosis. A diminution of opsonin in persons subject to attacks of furunculosis, syphilis, etc., has also been observed by these investigators.

CONCLUSIONS.

1. Human serum does not acquire streptococidal properties during the course of a streptococcus infection.
2. The blister fluid from erysipelas patients has no streptococidal powers.
3. Defibrinated human blood has a streptococidal power which, with few exceptions, is roughly proportional to the leucocytosis.
4. The destruction of cocci in the defibrinated blood is brought about by the leucocytes, but before this can be accomplished the cocci must be acted on by the opsonin of the serum. There is no phagocytosis and hence no destruction of unsensitized cocci by washed leucocytes.
5. The opsonin is increased during the course of an attack of erysipelas.
6. In an attack of acute nephritis the opsonin is diminished, but the leucocytes also undergo a change which renders them less effective in the destruction of streptococci. This fact may serve to throw light on the cause of many terminal infections.¹⁰

DISCUSSION.

Dr. M. J. ROSENAU, Washington, D. C., said that the results which Dr. Ruediger has obtained from his work on streptococcus infections have more than theoretical significance, for it is plain that this line of thought must eventually give practical results in the prevention and cure of the virulent infections caused by the various strains of streptococci. He said that Dr. Ruediger's paper clearly shows that the destruction of streptococci in the body is not the result of the serum or inflammatory fluids alone, but bears a direct relation to the number of leucocytes. This work gives a deeper insight into the process of phagocytosis and the part played by the leucocytes, especially in their relation to streptococci. Dr. Rosenau said that as a further confirmation of the opsonins described by Wright, it is a distinct advance in our knowledge of immunity.

PAROXYSMAL TACHYCARDIA: ITS RELATION TO EXOPHTHALMIC GOITER.

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It is my wish to emphasize the relationship apparently existing between certain cases of paroxysmal tachycardia and exophthalmic goiter, and to suggest that a more thorough examination of such cases may serve to trace the connection in a considerable proportion of instances. The more I see of this symptomatic disturbance, the less inclined am I to regard it as a definite entity or deserving of special caption in the category of disease. A superficial survey of the literature shows some 160 references to the subject, and as yet there has been no opportunity to observe what proportion of the cases are regarded by their reporters to have been due to exophthalmic goiter, though it is apparent that the percentage is small. It is hoped that a thorough resumé of the subject may be embodied in a future note. The present communication is actuated by two recent cases in my practice, of which full histories and notes to date follow:

CASE 1.—*History*.—Mrs. C., aged 38, married 16 years; has two children, the younger of whom is 8 years old. No miscarriages. Puberty at 12. Menstrual periods have always been accompanied by pain, which was relieved when the flow became established. Ordinary diseases of childhood, but no specific or rheumatic history.

Present Sickness.—The patient complains of constant pain in the legs, mostly at the knees, especially the right knee. This pain extends upward at times, and again downward, is dull in character but liable to acute phases, at which times there is apt to be locking of the right knee joint. There is a limp in walking which has been noticeable for twenty years. She also complains of hemorrhoids. The chief symptom and the one for which she seeks relief is periodic palpitation of the heart with hurried breathing, and some pain in the chest at such times. The attacks come on without warning, but usually follow fatigue or excitement. There is no regularity in occurrence, nor association with the menstrual period. Of late she has had one each month, lasting from two to ten hours. The duration of the complaint covers a year's time.

In the family history there is nothing to note beyond rheumatism in the father and "an asthmatic complaint" in the mother.

Examination.—Patient is above average height, well nourished, weight 125 (below her normal); the skin is soft, smooth and elastic, and the exposed portions are somewhat bronzed; the palms are moist, the fingers broad but not clubbed. Pulse 114, soft, low tension, fairly full. There is apparent and palpable enlargement of the thyroid body of which she was unaware. Circumference of neck over greatest prominence, 13½ inches. Lungs negative; expansion is free and symmetrical; epigastric angle acute. Apex beat is in the sixth space inside the mammary line. Dullness one finger breadth to right of sternum. Heart sounds are distinct and clear. A rough sys-

9. Proc. Royal Soc., Sept., 1904.

10. I wish to thank Professor Hektoen for many suggestions, and the internes of Cook County Hospital for courtesies.

toxic murmur is present over the base and is not transmitted. Epigastric pulsations are apparent and the systolic murmur is heard here, but not elsewhere in the vessels.

Liver, stomach and splenic outlines are normal in size and position and the abdomen generally is negative.

The grasp is firm, stronger in the right hand. Supinator jerks diminished on both sides. There is tremor, fine, about seven to the second, most noticeable in the extended fingers, but palpable in the thighs on shifting the body weight from one leg to another. The knee joints are normal and symmetrical to inspection and palpation. Knee jerks are exaggerated. Normal flexor response on both sides. There are no disturbances in tactile or thermal senses.

The back shows the remains of an old kyphoscoliosis. She wore a brace for this condition for four years, but for the past two years has had no trouble.

The mucous membranes show no bronzing. The pupils appear large, but are equal and react to light and accommodation. There is no Stellwag or von Graefe sign or exophthalmos.

Pelvic examination shows the uterus in good position and freely movable, a tenacious discharge coming from a large and eroded os. The fundus has a depth of 3 3/4 inches and the interior is somewhat granular. Rectal examination shows some hemorrhoidal tissue, but not exuberant, and a few anal tags.

Lavage shows a normal gastric secretion. Blood; erythrocytes, 3,400,000; hemoglobin, 70; leucocytes, 8,700. Urine, total, 24 hours, 1,060 c.c.; acid; sp. gr., 1.016; urea, 1.7; no albumin or sugar, amorphous urates, mucus and vaginal epithelia.

Diagnosis and Treatment.—A diagnosis of exophthalmic goiter was made and the patient put on the following treatment: Graduated tub baths, 85 to 105 degrees, three times weekly, alternating with salt glows and alcohol rubs, with gentle massage to promote a healthy skin function; nutritive, full, easily assimilable diet, daily exercise out of doors; the application of the direct current, 20 milliamperes, the anode over the thyroid and the cathode on the cervical spine, for ten minutes three times a week; liquor potassii arsenitis, 2 mm. t. i. d. Treatment was begun April 25, 1904. The pulse ranged daily from 100 to 115.

First Attack.—On May 8 at 8:30 a. m. a paroxysm began and continued until 4:30 p. m. The patient took the position of greatest comfort for her, dorsal with a very low pillow, and lay quietly throughout the attack. The skin was flushed, moist, the expression good, the pupils dilated and sluggish to light and accommodation. The pulse was soft and weak and many waves failed to reach the wrist. The cardiac impulse covered an area the size of the palm and was observed to be forcible and sharp. The sensation conveyed to the hand was of a machine tapping from below. At a distance of a foot from the chest the quick systolic thumping of the heart could be distinctly heard. With the stethoscope the first sounds were loud and ringing, the second almost in abeyance everywhere. With the hand or the stethoscope the rate of the tachycardia could easily be noted, ranging from 190 to 240 throughout the paroxysm and recorded every hour. She complained of rather severe pain, also paroxysmal, and not related to the frequency of the heart, in the heart area radiating to the back. Once or twice during the day she took nourishment.

About 4 p. m. the patient's condition was as follows: Sweating and diuresis (the latter 1,120 c.c. since 8:30 a. m.), moderate cyanosis of ears, lips and fingers, expression one of great fatigue, pupils unchanged, pain intermittent and severe, heart rate 198. Heart dullness extended two fingers to right of sternum, the veins of the neck pulsating and full. Heart sounds weak and flapping. Respirations 30 and sighing.

At 4:30 p. m. the cessation of the attack was marked by a fall in respirations to 20, a general feeling of betterment, absence of pain and diminution of sweating. The behavior of the heart was most interesting. Now and then with the weak beats came a strong one, and occasionally a strong beat would take the place of the two or three weak ones, giving a curious arrhythmia and force wave. The strong beats all sent waves to the wrist. Gradually the strong beats gained supremacy over the weak ones until the ratio became about 3 to 1, and from then on there was a widening ratio until within an hour the heart settled down to steady work at 105.

At 9:30 a. m., after having made use of such therapeutic measures as stretching vagi by posture, pressure on them, holding the breath, iced and hot drinks, heat and cold to the precordia, there were given digitalin 1/100 gr. and ergot 1 dram hypodermatically; at 11:30 morph. sulph. 1/4 grain; at 2 p. m. spartein 1 grain; at 4 p. m. morph. sulph. 1/2 grain and digitalin 1/50 hypodermatically. We were under the impression that the last medication was effective, but were not unmindful of the fact that the paroxysms not infrequently terminate without medication.

The following day the patient was out of bed and feeling about as well as usual. From this time until June 5 she improved generally. The tachycardia diminished from 105 to 110 to 90 to 96 and the neck measured 13 inches. She continued taking arsenic and was put on the infusion of digitalis, half an ounce t. i. d., gradually diminishing it as the tachycardia grew less pronounced.

Subsequent Attacks.—June 5, however, she had another seizure, commencing at 10:30 a. m. and ending at 3 p. m. At the outset she was given digitalin 1/50 grain, and this was repeated at 2:30 p. m. The attack was much the same as the preceding, but with less pain. The highest heart rate was 240. There was less sweating and no cyanosis. In the next two months the patient was without attacks. She then passed from immediate observation. Since then there have been seizures of moderate severity, but a recent communication, June, 1905, tells me that she is much improved. What medication, if any, she is having is not made clear, but at last accounts she was taking a combination of strophanthus, digitalis and nux vomica tinctures, 5 minims each, t. i. d.

CASE 2.—History.—Mrs. P., aged 40; has three children, youngest 16, no miscarriages, had difficult labors, with lacerations each time, which were repaired. Menstruation regular, no pain, flow slight and becoming more so; duration one day.

Present Sickness.—She was well up to four years ago, when she began having palpitation of the heart, accompanied by shortness of breath at irregular intervals, the attacks coming on suddenly and lasting from one to five hours. Later she began to have pain with the attacks, severe, in the cardiac regions and neck, radiating into the left arm. She states that her nervousness in general has increased. The longest interval between attacks has been three months, and on the other hand she has had as many as three in one month. Occasionally she is able to foretell oncoming paroxysms by increased nervousness; at other times they appear without warning. During the attacks she sits on a chair or the bedside, or lies back on the pillows between the exacerbations of pain. The pain is severe but not overwhelming, and is relieved by pressure. Between attacks she feels and looks well. The appetite is excellent, there is no constipation, and she sleeps well.

In February of 1905 she had right lobar pneumonia and made a good recovery. Her personal and family history are otherwise negative.

Examination.—Height 5 feet 2 inches; weight 130. Fairly nourished, muscles somewhat flabby, skin dry and scaly. Slight bronzing in the posterior cervical regions and a muddy color of the face. The neck measures 13 1/2 inches. The thyroid body is not apparent on inspection, but can be made out by palpation. The thorax shows the scar of an old abscess in the left breast. A thickened pleura and impaired resonance over the upper right lobe mark the site of the pneumonia area.

The heart is enlarged to the left, the apex lies in the sixth space just inside the anterior axillary line; the sounds are clear; the pulmonary second sound is accentuated. The right heart is not demonstrable. Pulse 105, respiration 20, temperature normal. The abdomen is negative. The pelvic examination shows the repairs, and a slightly enlarged but otherwise normal uterus.

There is no exophthalmos apparent, but occasionally there is observed von Graefe's sign. The pupils are slightly dilated and sluggish to light, but react briskly to accommodation. Muscular power is fair.

There is tremor, fine (6 to 8), particularly noticeable in the extremities, but present in all muscles that are called forcibly into play. The deep reflexes are exaggerated. The sensory apparatus is keen. There are no hysterical stigmata.

Urine, 1,420 c.c., acid, sp. gr. 1019; urea, 2.1, no albumin or sugar.

First Attack.—Blood: Reds, 3,125,000; hemoglobin, 62 per cent.; whites, 6,400. On the night of May 17, 1905, she had a paroxysm, commencing at midnight. She was seated in a chair, her posture of greatest comfort. The heart rate was 220, respirations 30, the pain was endurable and not constant, her face was flushed, the skin moist, and the kidneys were active. Before I saw her she had already taken strychnin, 1/50 gr., and digitalis, 1/100 gr.

This seizure occurred before I had examined the patient, and when I reached her side her husband told me his physician had said she had angina pectoris. Without waiting to examine her with any degree of care, I gave her hypodermically, at 12:30 a. m., nitroglycerin, 1/100 gr. Between that time and 1 o'clock, when the paroxysm ceased, I was able to observe her more closely and to recognize the nature of the disturbance. I am by no means convinced that the injection availed whatever, yet I am certain that it did the patient no harm. It was the slightest paroxysm she had ever had. The character of the heart's action, its behavior during the continuance and decline of the seizure and the general features of the circulatory disturbance were so similar to the case previously outlined as to require no further description.

Subsequent Attacks.—The following day she was apparently as well as ever. The patient went to her home, at some distance from the city, and did not return until June 15. The multiplicity of her household duties and the fatigue of travel made her very nervous and she was able to foresee another paroxysm, which eventually appeared at 7 p. m. on June 19 and continued for three hours. Before I reached her she had taken, as usual, the strychnin and digitalin. I promptly gave her nitroglycerin, 1/100 gr., with no damage and no relief. She was then given morphin sulphate, 1/4 gr., and digitalin, 1/100 gr., at half-hour intervals for three doses, when the pupils indicated their discontinuance; with this medication were employed all the customary physiologic remedies. There was no cyanosis or dilatation during the attack and the course was generally characteristic. The morphia controlled the pain, but rendered the patient very restless and caused considerable nausea and vomiting after the subsidence of the paroxysm. A few days later the patient was put on the tinctures of digitalis, strophanthus and nux vomica, of each 5 minims t. i. d., and a pill of arseniate of iron, 1/12 gr., after meals, and was treated three times weekly with the direct current of 10 milliamperes for 15 minutes, the anode to the thyroid body and vagi and the cathode to the cervical spine. This treatment was given daily after the first fortnight.

July 5 the neck measured 12 1/4 inches, with no change in body weight.

July 7 there occurred a curious variation of conditions. Following a regimen of the cardiac tonics above mentioned and a rather prolonged seance of electrization, the patient had a headache, neuralgic in type, gradually increasing in severity, worst at the occiput. The pupils became moderately contracted and sluggish both to light and accommodation. The pulse was full, hard, of high tension, 60 beats to the minute. The attack persisted for 24 hours. On July 9 the pulse rate had returned to 100 and was soft and compressible.

July 16 and 17 the patient had premonitions of a seizure. There were slight momentary attacks of tachycardia, the pulse being 200, with occasional pains in the chest.

At 5 p. m., July 18, a paroxysm came on. The pain and flushing were pronounced, diuresis was marked, the catheter being called into use hourly. In this attack, in addition to the customary medication, there was given atropin, 1/50 gr., but with no effect whatever.

August 4 was the date of the next seizure. It was 2 hours in duration, with all symptoms characteristic.

August 21 occurred the last paroxysm up to the present time, October 10. It was characterized by pain, less severe than usual, and absence of extreme tachycardia. At its height the pulse rate did not exceed 120.

At the conclusion of the patient's residence under my care, September 1, her weight was 140, her general condition excellent. The neck measured 12 3/4 inches. The tremor was much

less evident. A recent communication from her informs me that she has continued to do well and is feeling much improved.

I was so fortunate as to have both these cases under immediate and constant observation, personally and by competent nurses. The cardiac rate was taken invariably at the heart, for often at the wrist the pulse was uncountable and occasionally unappreciable. Sources of error have been allowed for. The counting was done by the hand over the precordia, by stethoscope and by flags on the chest wall. Considerable doubt has been expressed by not a few of my colleagues as to one's ability to count 240 to the minute. The average watch ticks 5 to the second, or 300 to the minute, and is readily countable, particularly if taken by tens. Some practice is necessary in recording observations in tachycardia by any method other than instrumental. The rather exceptional advantages afforded for observation in the two cases submitted have made me confident that the records are approximately exact. Of late good results have been obtained, in some instances, by treatment with thyrodoctine. I have had no personal experience with the remedy.

THE PRESENT STATUS OF THERAPEUTICS.*

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ST. LOUIS.

When I was a student at Jefferson Medical College one of the members of its distinguished faculty made the assertion that he "could encircle the globe and cure more diseases with four remedies than could be cured with all the balance of the materia medica." The four remedies named were quinin, opium, mercury and iodid of potassium. None will deny the therapeutic power of these drugs nor the vast scope of their usefulness. Indeed, the more we consider the statement the more we question whether it does not hold good to-day, notwithstanding that it was made more than twenty-five years ago.

We are forced to ask ourselves whether therapeutics has been standing still while pathology, bacteriology, chemistry, diagnosis and surgery have rushed into such prominence as to challenge the admiration of all who keep pace with the progress of the sciences, and while preventive medicine and sanitation, which stand alone in achievement for the welfare of men in every walk of civilization, have made habitable the squalid tenements of the dependent poor, protecting the middle and moneyed classes against the results of their own follies in social life, making possible the great commercial undertakings of nations, and encompassing the most remarkable saving of life from disease in the latest and most destructive war of modern times?

It is not my purpose to discuss the therapeutic action of individual remedies nor to rehearse what has been written concerning the numberless new remedies which are constantly forced on our notice through the energy of the army of manufacturers, all of whom claim special therapeutic advantages for their products, and whose assertions, if true, would leave nothing to be desired in remedial agents. This multitude of new remedies comes to us like the leaves of the forest—they hold the attention for a season, then fade, die and pass away. Many of them prove totally worthless, but they disappear only to be replaced by others of a similar kind, going to a similar fate.

The effect on the status of therapeutics is to make con-

*Read before the Missouri State Medical Association at Excelsior Springs, May, 1905.

fusion worse confounded and to engulf the real object of the therapist in hopeless chaos. It is my desire to bring this condition of things to the minds of practical men and to ask their aid in bringing some sort of order out of this evident confusion.

There was a time when the U. S. Pharmacopœia and the U. S. Dispensatory were the guides to what should and should not be considered as real therapeutic agents. Admitting their shortcomings, and these were undoubtedly many, they were the channels through which we might obtain that which was best, since they represented with some sort of system the true worth of drugs.

Times are different now. I believe it is safe to assert that 90 per cent. of all prescriptions written call for non-official drugs that have been put on the market by those averse to the best interests of therapeutic progress.

Manufacturers are supplying us with thousands of different remedies, but how many practitioners can name fifty or even twenty-five of them? How many remedies compose your medical armamentarium? What do you know concerning the remedies you are using and from what source have you learned it? An agent, often a non-medical man, comes to your office, displays the wares that you are asked to prescribe and presents pamphlets, catalogues and dogmatic clinical assertions from men of whom you have heard nothing, and consequently who are not known by you as men in whose judgment you should place confidence, and yet you are expected to recognize them as authorities to point the therapeutic way. It is in this way that you are asked to use these remedies—of whose composition you know nothing—on the sick who have entrusted themselves to your professional care.

In the face of such conditions is it any wonder that the therapeutic sensations of to-day are forgotten in their grave of oblivion to-morrow? Is it to be wondered at that the profession is overrun with therapeutic nihilists who know nothing of curative methods and are content to grope about in the mass of new remedies, hoping to find a cure for pneumonia, phthisis and typhoid fever, and are willing to cast their fortunes with the commercialists and to adopt their easy fashion of labeled tablets, which tell the diseases—and they are many—in which they are to be used, the dose, and how to use them?

I am far from saying that no good remedies can reach physicians in this way. My plea is for some means to get and to hold fast to that which is good, from whatever source it may come, and to be delivered forever from the worthless mass which pours on us to our disgust. If a manufacturer evolves a preparation that is a real improvement let him have the credit and the profit, so long as everything known about the remedy is made public and that no mystery attaches to it, and no ridiculous claims are made for it as a therapeutic agent.

Let the medical profession demand that there be some recognized method of proving the therapeutic value of every agent offered to it, and that the sign manual of such proof shall accompany it. Then, and not till then, will the shameless business for which these remedies are primarily responsible cease to be. I had the honor to suggest in a public address a year ago that the legislature be petitioned to pass a law requiring every package containing medicine to be sold or given away in the state of Missouri to have a label setting forth the exact contents. I reiterate, with deeper conviction than ever, that it is the duty of the state to protect its people against the infamies of "patent medicine" vendors, who are doing more harm and causing more ruin

than any disease which is fought and quarantined by the State Boards of Health. How much more should we demand absolute non-secrecy about the preparations we are to use on the sick, and also honesty in their exploitation.

With the gallant band of our professional brothers now members of the legislature such a bill would find a sufficient number of Davids to slay the Goliaths of this iniquity.

I stated some time ago that the medical profession itself is primarily responsible for the existing condition of things. Physicians have allowed themselves to become animated billboards on which have been written the advertisements of unscrupulous scamps, and then have been made to parade their asininity and poverty before the public, while the compounder of some whisky, cocaine, morphin or iron preparation or coal tar and caffeine powder grows into a money magnate who laughs at our gullibility and then stands in the lobby of our legislatures a bulwark against right and justice.

Again the responsibility of the profession is shown in the license allowed medical journals which are absolutely the creatures of physicians and should be under their control. If no physicians patronized medical journals which are under the control of nostrum manufacturers their days would be few and full of trouble. With the great number of struggling orphans in the journalistic world it is a matter of necessity with many of them that they have advertisements—good if they can get them, but bad if they must have them. The wealthy parasite above referred to knows their necessity and commands their columns to send broadcast to the world the debauching mixtures he has concocted, and the poor, honest, unsuspecting physician continues to patronize his worst enemy and to obey the scriptural injunction by turning the other cheek to be smitten.

If this shameful business were confined to the weaklings of the medical press it might be viewed with some sort of compassion, but with no justification of the wrong, but when it finds place in the powerful metropolitan journals, those by which we are to be judged, and when the advertising stuff on either side of the reading matter makes the latter look like the ham in a poor boy's sandwich, then, my brethren, "the offense is rank and it smells to Heaven."

Take this, for example, from a reputable journal: "Antiphlogistine is now the standard remedial agent for pneumonia, pleurisy and bronchitis, primary or secondary to la grippe or any other disease." It then proceeds to recite ten reasons why this is true, two or three of which will convince any scientific mind of the unimpeachable truth of these remarkable axioms: 1. "Because antiphlogistine draws the blood to the surface—bleeds but saves the blood." 2. "Antiphlogistine by reflex action contracts the pulmonary vessels, thus depleting the lungs into the dilated superficial capillaries." 3. "Antiphlogistine relaxes the muscular and nervous systems, thereby tending to induce sleep." I ask you to ponder well these profound scientific truths and the reason for their enunciation will become clear as mud.

The chests of pneumonia patients all over this land in this enlightened age are being smeared with this stuff because the benevolent proprietors tell physicians to do it. Commercialism is paralyzing individual thought in therapeutics and making it the subject of ridicule by sensible men.

Think of Osler making a careful diagnosis of pneumonia and then solemnly ordering the patient to be encased in "the standard remedial agent" because he knew

it to be a "blood drawer," a blood saver, a hypnotic and anodyne all in one, and then instructing the nurse in the event that the Congressman's catarrh should grow worse or evidences of heart failure manifest themselves, to resort at once to full doses of peruna until decided evidence of alcoholism became manifest. If he followed this therapeutic trend he would be in line with a large number of men now claiming to be regular practitioners of medicine. Is it to be wondered that so many neuropathic inferiorities prefer to be healed by "absent treatment?"

Here is another gem found in a medical journal, which, before its "consolidation," declared it would permit no irregular advertisement to defile its pages. Under scarce head lines the word catarrh is emblazoned over the statement that "germiletum is really a specific in catarrh!" "Germiletum is also unexcelled in eczema!" You will notice that a specific has been found for that most widely spread affliction, catarrh, as well as the seven-year itch, for one of the members of this society says in a testimonial of this new-found panacea: "Nasal catarrh, which has long been an odium of medicine, may now be combated successfully by the alkaline antiseptic germiletum."

A journal which has, or claims to have, "the largest circulation of any medical publication in the world," and whose editor, I am informed, is not even a graduate of medicine, but an undergraduate of an eclectic college, has for years done everything tending to cheapen and to degrade the medical profession, while it enriched its editor, is now claiming through a smart woman canvasser to be the best field for communications from medical men, "only professors in medical colleges," however, "because it reaches the largest audience in the medical world."

The character of this publication can be best understood when you know that it has persistently decried the uses of diphtheria antitoxin and landed the antiseptic washes, gargles and so on manufactured by its opulent owner and publisher.

This shrewd canvasser called attention not only to the articles written by, but to the photographs of, the celebrated eastern luminaries who are to enlighten the benighted brethern of the south and west, to be found in this journal. It is painful to relate how many good but unwary men fell into the trap and became endorsers of this cheap and blatant sheet. It is gratifying, on the other hand, to know how many men refused to entertain the idea at all.

So long as the columns of medical journals can be made subservient to the commercial interest of proprietary medicine venders and quacks just so long will therapeutics of the scientific order be relegated into oblivion to the disgrace of physicians.

Let us devoutly hope that the pages of our own state journal will be kept free from quack and proprietary exploitation. If we cannot keep it alive without it, then let it die.

Lawyers have a supreme court whose decision is their authority for interpreting the law. Infallibility is not claimed for their rulings always, for this same court has been known to reverse itself; yet in the main it is right and just and errors are the exception.

The therapeutists should likewise have an authoritative body possessed of every known means for determining the therapeutic action of drugs, free from every selfish interest, political or commercial, and from the bias of theorists, and not paid by some firm or individual to report the action of remedies placed in their hands, to

be put on the market under a trademark like any other commodity.

What an inestimable boon would such a body confer on the medical world if it could send out remedies for disease whose therapeutic qualities were definitely known and about which there could be no cavil, and if at the same time it could eliminate from text-books mention of all remedies which did not possess distinct therapeutic power.

Look at the things which are being accomplished by the government, state and national, in the biologic boards of research in determining the cause and cure of the diseases of plants and animals. The findings of such a body make the therapeutic law for application to all animals alike, whether their owners believe in pathology and rational therapeutics founded thereon, or follow the elusive delusions of christian science, or have no beliefs at all.

I would hail the day when the government should announce itself ready to establish such commissions for research into the etiology and cure of human diseases. Witness the one glorious result achieved by the immortal commission sent to Cuba for the investigation of yellow fever after the war with Spain. It has done nothing greater since the nation was born.

Finally I must conclude that the status of therapeutics to-day, considered as an organized system of practice, has lost its prestige under the blighting curse of commercialism, aided and abetted by the very men who are or should be its natural defenders.

I have presented some of my views on this very important subject, hoping to have the opinion of this society as to their worth or worthlessness. After all is said and done, research that does not find something of value for the cure of human ills is no better than a fruitless tree, an encumberer of the earth, and should be cut down.

In an address delivered before the graduating class of the medical department of the St. Louis University on May 8, 1905, Dr. John M. Dodson, dean of the medical department of the University of Chicago, said: "No doctor should prescribe any remedy whose formula is not known." Let this fact sink deep into our minds and make us resolve anew, each and every one of us, to do his utmost to drive the noisy commercialist out of our midst and to allow the present highways of trade to return again to the serene and thoughtful avenues of scientific pursuits. Then will rational therapeutics take its proper status and medical men everywhere be clothed with becoming dignity.

Test for Bile Pigments.—A. Raphael (*St. Petersburg, med. Wochenschr.*, No. 14), describes a method of testing for bile pigments in the urine which has been very satisfactory in his experience. He uses the well-known diazo reaction—first, sulfanilic acid (5.0), muriatic acid (50.0), distilled water (100.), and, second, sodium nitrate (.5) and distilled water (100.0). For the first test he puts 2 or 3 drops of the soda solution with about 5 cubic c.c. of the other and adds 5 c.c. of the urine to be examined. The presence of bile pigments will show itself, first, in an amethyst color, passing in a short time to a cherry red. The intensity of the color increases in icterics during the first 24 hours. If the urine is very diluted, the red color is still visible against a white background. A second test is given as follows: To 2 or 3 drops of the soda solution added to the urine the sulfanilic acid is then added, and the fluid, according to the quantity of bile pigments present, takes on a more or less intense yellowish-green color, passing in the 24 hours to the above-described cherry red.

SPIROCHETE OBERMEIERI.*

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PRELIMINARY NOTE.

The spirochete studied was obtained through the kindness of Dr. Norris of Bellevue Hospital, New York, who secured it from a case of relapsing fever by inoculating the blood into monkeys and white rats. The organism has been kept alive by successive passage through white rats for over two months. As a result of intraperitoneal injection the parasites appear in the blood in thirty-six to forty-eight hours after inoculation, disappear within the next twenty-four hours and do not reappear. The rats are then immune to subsequent inoculation. The disappearance of the spirochetes was shown to be due to the formation of anti-bodies. Spirochetal blood, when kept *in vitro*, retains its virulence for more than fifteen days.

The blood of rats which have been given repeated injections of spirochetal blood exerts a most marked preventive and curative action. When injections of such blood are made, before inoculation with spirochetes, the latter fail to appear. Similarly, when simultaneous injections of immune and spirochetal blood are made, no infection results. Even when the immune blood is injected ten, twenty-four and thirty-eight hours after inoculation with spirochetes, that is to say, at any time before the spirochetes actually should appear in the blood, they will fail to appear, whereas in the controls they become numerous.

The curative action of the immune blood is equally pronounced. In rats which have from 5 to 10 spirochetes per field of the one-twelfth inch objective, an injection of 2 c.c. of immune blood is followed *within one hour* by a total disappearance of the spirochetes from the circulation. After this, the parasites do not reappear, while in the controls they persist for twenty-four hours. This remarkable action of immune blood in the case of the white rat will form without doubt the basis of curative and preventive treatment in relapsing fever and in tick fever of Africa. It is the intention of the authors to work out the practical application of the principle discovered.

Spirochetal blood, which has been diluted with ten parts of salt-citrate solution, when filtered through a Berkefeld filter, under a pressure of 50 pounds, yields a filtrate which, when injected into white rats, produces typical spirochetal infection. This result was obtained in seven out of ten experiments. The spirochetes, as in the case of cultures of *Trypanosoma lewisi*, are filterable through a Berkefeld filter. Attention is called to the importance of this fact in its bearing on the so-called ultramicroscopic organisms.

All attempts thus far to cultivate the spirochete on blood agar have failed, but this subject will be followed further. The spirochetes multiply by transverse division and show other characteristics which belong to bacteria, notably, their behavior with reference to distilled water. When rat blood, which is rich in spirochetes, is placed in a thin collodium sac and dialyzed in running distilled water, the organisms do not undergo any change in form even after twenty-four hours. During the first five or six hours their motility is unimpaired, but after that they become more and more sluggish and finally come to rest. Even after a dialysis of eleven to twenty-four hours

such blood is infective. Under similar conditions the rat and nagana trypanosomes rapidly plasmolyze, within an hour or two, and become hardly recognizable. At the same time they lose their infectiveness.

This behavior of the spirochetes in distilled water, that is, absence of marked plasmolysis, corresponds to that of bacteria under like conditions. This test may, perhaps, serve as a more or less general means of differentiating between bacteria and protozoa. The transverse division of spirochetes, the absence of definite structure, such as the presence of well-marked nucleus and lepharoplast, and the absence of plasmolysis would indicate that the *Spirochete obermeieri* belongs to the group of bacteria.

On the other hand, the transmission of spirochetal diseases by insects, the persistence of the organisms in such insect hosts for months, and the infection of their eggs are the main facts known at present which point to a possible protozoal nature of the parasites. The persistence of the spirochetes of tick fever in the blood of rats for three to eight days, as shown by Dutton and Todd, would indicate that their organism, though closely related, is nevertheless different from that studied by us. It goes to show that the tick fever of Africa and the relapsing fever of Europe are due to different species of spirochetes.

INDICATIONS FOR STRYCHNIN AND NITROGLYCERIN IN CIRCULATORY DISORDERS.

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The pharmacologic action of nitroglycerin is erroneously conceived by some physicians. I have heard practitioners remark that "even the use of nitroglycerin and strychnin is ineffectual in causing a weakening circulation to recover." To understand the therapeutic indications for these two drugs in circulatory symptoms, a thorough knowledge of a portion of the physiology of the circulation is absolutely necessary.

The heart is a muscular organ which pumps the blood into the aorta at a rate which normally maintains the blood pressure constant, within certain narrow limits. The control of the heart's rate is automatic. The vagus and sympathetic nerves carry impulses to the heart; the former is the inhibitory nerve and the latter the accelerator. A small nerve running in the same sheath as the vagus, called the depressor, is the sensory nerve to the heart. The small blood vessels, the arterioles, have their caliber controlled by the vasomotor nerves. The centers of these four sets of nerves functionally must be intimately associated in the central nervous system. A rise of blood pressure, due to a constriction of the arterioles, or to an increased amount of blood, normally causes a slowing of the heart's rate. A fall of blood pressure due to causes, the reverse of those just mentioned, brings about an increase of the cardiac rhythm. Both changes in the rate of the heart's action are attempts, through the reflex nervous system, to maintain the blood pressure at the usual height. Any slight alteration in the caliber of the arterioles, or in the amount of fluid, or in the rate of the heart, is readily compensated for by the necessary change in one or both of the others. For example, a loss of a small amount of blood may not cause a fall of blood pressure, for the reason that the arterioles will contract, or the heart will increase slightly in either rate

*From the Hygienic Laboratory, University of Michigan.

or depth of beat. A gradual introduction of an isotonic sodium chlorid solution into the blood vessels produces no change in the height of the blood pressure. The compensation is by a dilatation of the arterioles or by a slowing of the cardiac rhythm.

It is due to the tension under which the blood is held in the aorta that the circulation through the periphery is accomplished. Indeed, the heart's function, strictly speaking, is to maintain the requisite pressure in the aorta; on this account the intimately connected system of nerves is necessary. The arteries which conduct the blood to the brain are fed from the aorta, and it is hardly necessary to state that anemia of the brain will result from a sufficiently low blood pressure; and the same is true of any other organ.

Since the heart is an organ which is continually working, it is necessary that there be no cessation of its supply of nourishment, or of the elimination of its waste. The arteries conducting the blood to the heart are branches from the aorta, and therefore the amount of blood passing through the coronary circulation depends directly on the tension of the blood in the aorta. A rise of blood pressure by some cause other than an alteration in the heart's rate, causes a slower heart rhythm in an attempt to compensate; but if compensation is not complete, more blood passes through the heart, and the resulting better nourishment and better elimination causes a stronger cardiac beat. A fall of arterial tension, as a result of changes in the amount of blood or in the size of the arterioles, causes, in an attempt to compensate, a more rapid rate of the heart's rhythm; but if compensation is not complete, there is a proportionate decrease in the amount of blood passing through the coronary vessels, and a poorer nourishment of the heart muscle, and decreased elimination of its waste, and consequently a less efficient systole.

Strychnin stimulates the vasomotor center. This results in a constriction of the arterioles and in a consequent rise of blood pressure, and therefore a better coronary circulation; this produces the improved systolic contraction described above. In some exceptional cases, strychnin has a stimulating effect on the vagus centers, thus bringing in the inhibitory effect of the nerve and slowing the cardiac rhythm. This may counteract the effect of the constriction of the arterioles to such an extent that there results no rise in arterial tension.

Nitroglycerin, which chemically is a trinitrate of glycerin, is decomposed in the body into nitrates and nitrites. The small amount of nitrates formed has little or no action in the body. The pharmacologic action of nitroglycerin is due, therefore, to the nitrites. The decomposition taking place gradually, there are no such sudden marked effects as in the administration of a pure nitrite. For the same reason, the effects are more prolonged from the administration of nitroglycerin than from administration of a nitrite. The nitroglycerin or a nitrite produces a dilatation of the arterioles of the body, and consequently a fall in the arterial tension, and there results a more rapid and a less efficient systole.

The therapeutic indications for either of these two drugs are perfectly clear: Strychnin is indicated when there is a low blood pressure, a rapid heart and a bounding and easily compressible pulse; nitroglycerin is indicated when the arterial tension is high, the heart rate slow, the pulse full and tense, and the wave very slight. In case of degenerative changes in the musculature of the heart the signs might be slightly different from the above.

The virtue of nitroglycerin in rendering aid to the heart depends on its reducing the resistance against which the systole works. For this reason it has incorrectly been said to be a cardiac tonic or stimulant.

Strychnin and nitroglycerin are directly opposed to each other in their effects on the circulation; and hence when one is indicated for its therapeutic effects on the circulation, the other is contraindicated. The former is indicated in cases of reduced and the latter in cases of increased arterial tension.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN. CHAPTER III.

ANALGESICS AND SOPORIFICS.

Analgesics and soporifics are among the most important articles in the materia medica, and at the same time, owing to their abuse, the most harmful.

The Common Need for Analgesics.

Pain, accompanied by sleeplessness, occurs in a great variety of conditions, often with an intensity or persistence that imperatively demands alleviation. When such a condition requires medicines for a long time there is danger that the patient will learn the name of the remedy employed and continue its use long after the actual necessity for it has passed. Certainly no other class of remedies requires more painstaking care on the part of the physician, not only in the choice of the particular agent to be used, but also in the regulation of the dose.

Individual Treatment Imperative.

The way to secure the best results in the treatment of such conditions is by acquiring an intimate knowledge of the various remedies in this class and by learning how to use them singly or in combination as may be required.

In a given case a combination of chloral hydrate and potassium bromid may be necessary, while in another the latter alone may suffice. The more dangerous chloral hydrate should never be used when the less harmful bromid will serve the purpose.¹

If we find that scarcely any two successive patients demand exactly the same prescription consisting of but two ingredients, how very much less is the probability of finding any considerable number each requiring a "shotgun" prescription of five or six substances of widely different action, agreeing only in the one property of producing unconsciousness.

It should be obvious that the conscientious use of analgesics and soporifics demands the thoughtful selection of the remedy with the careful computation of the dose according to the necessities of the individual case—a condition manifestly impossible when one relies on complex, ready-made mixtures, with doses and indications suggested by an interested layman—the manufacturer. The greater the number of individuals who acquire such harmful habits the greater are the profits of the nostrum maker.

It is well known that the habitual use of opium, chloral hydrate, the bromids and other narcotics is widespread, but

1. Should the physician desire to use a compound mixture of chloral hydrate and potassium bromid of the bromidia type he would do well to have compounded the "Mistura Chloralis et Potassii Bromidi Composita" of the National Formulary, as follows:

| | | |
|---------------------------|---------|----|
| R. Chlorali hydratis | | |
| Potassii bromidi, aa..... | 3i-gr. | xv |
| Ext. cannab. Ind. | | 5 |
| Ext. hyoscyami, aa..... | gr. ʒss | 64 |
| Aque q. s. ad..... | ʒvi | 25 |

The chloral hydrate and the potassium bromid are dissolved in a little water and the extracts are then dissolved in the solution of the salts mixed with some powdered pumice stone, and the mixture filtered.

Each teaspoonful will contain approximately 1 gm. (15 grains) each of chloral hydrate and potassium bromid; 0.008 gm. (1/4 gr.) each of extract of Indian cannabis and extract of hyoscyamus. The mixture should be used with caution, and it will usually be found advantageous to omit the extract of Indian cannabis.

there are few who appreciate the full extent of these practices, or in how far physicians are responsible because of the careless use of these agents, either in simple form or as an ingredient of some nostrum.

For more convenient consideration we shall divide these remedies into the opium, atropin, acetanilid, chloral hydrate and bromid groups, the first three being more properly analgesics and the last two soporifics, though no absolute distinction can be drawn between them.

The widespread use of opium and morphin for local action—injections and lotions—is based on an erroneous idea. Opium contains gum which is a demulcent, a rather expensive one, however, while its active principle, morphin, must be absorbed before it can produce its effects, which are constitutional, not local.

Official Preparations of Opium.

The importance of opium and morphin are such that their actions and uses should be carefully studied in standard works of the day, and we shall pass to the minor members of the group after enumerating the official preparations.

The danger that the patient will form the truly terrible opium habit from even a short use of this drug or of any of its derivatives should always be borne in mind, and when it is necessary to use them they should be masked. Hypodermics in pain have come to be almost synonymous with morphin in the minds of the laity. This idea should be uprooted both by the use of the method for many other substances and by avoiding it as much as possible with morphin. The odor and the taste of opium and of the tincture, unfortunately, are well known and they should be disguised if possible.

To disguise the identity of opium and its preparations it is customary with some practitioners to employ the old designation thebaica for opium: tr. thebaica for tr. opii. The use of the deodorized preparations of opium is also to be recommended for this same purpose.

The official titles, properly coming under the heading opium, are not only numerous, but varied and important. Opium and Opium Granulatum are never used directly in the practice of medicine, but Opii Pulvis and Opium Deodoratum are frequently prescribed.

OPII PULVIS.—U. S.—When assayed, by the process given in the Pharmacopeia, this should yield not less than 12 per cent. nor more than 12.5 per cent. of crystallized morphin. This requirement is somewhat higher than the provision adopted for the International Standard, which limits the morphin contents of powdered opium to 10 per cent.

Average dose: U. S. P. powdered opium is 0.050 (50 mg. or 1 grain).

OPIUM DEODORATUM.—U. S.—This is powdered opium which has been treated with purified petroleum benzin to remove the caoutchouc, wax, oil and the odorous substances that are present; the alkaloidal strength and the dose of deodorized opium are the same as for the official powdered opium.²

EXTRACTUM OPII.—U. S.—Assayed to contain 20 per cent. of morphin, this preparation is now little used, except in suppositories and the official emplastrum opii.

Average dose: 0.030 gm. (30 mg. or $\frac{1}{2}$ grain).

PILULE OPII.—U. S.—This is composed of opium, 0.065 (1 grain), and soap, 0.020 ($\frac{1}{3}$ grain). These pills constitute a very ancient form of administering opium.

Liquid Preparations of Opium.

There are five liquid preparations, the least useful of which is mentioned first:

VINUM OPII.—U. S.—Containing 10 per cent. of opium in fortified white wine, aromatized with 1 per cent., each, of cinnamon and cloves, it resembles the well-known "Laudanum of Sydenham."

Average dose: 0.5 c.c. (8 minims).

ACETUM OPII.—U. S.—Vinegar of Opium, formerly known as black drop, Lancaster drops or Quaker drops, has long been known and extensively used. It contains 10 per cent. of opium

and 3 per cent. of nutmeg in diluted acetic acid, sweetened with sugar.

Average dose: 0.5 c.c. (8 minims).

TINCTURA OPII.—U. S.—The Tincture of Opium is the well-known and widely used Laudanum, and consists of 10 per cent. of opium in diluted alcohol.

Average dose: 0.5 c.c. (8 minims).

TINCTURA OPII CAMPHORATA.—U. S.—This, also known as paregoric or paregoric elixir, is the only one of the compound preparations of opium now official. It is so well known as a mild anodyne and sedative that further notice is not necessary.

Average dose: 8 c.c. (2 fluidrachms). This amount contains about 0.03 gm. ($\frac{1}{2}$ grain), each, of powdered opium, benzoic acid, camphor and oil of anise.

The Deodorized Tincture.

TINCTURA OPII DEODORATI.—U. S.—Deodorized tincture of opium is practically a 10 per cent., aqueous, extract of opium that has been treated with purified petroleum benzin to remove the odorous and other objectionable constituents, and subsequently preserved by the addition of 20 per cent. of alcohol. This, like the simple tincture of opium, is directed to yield, on assay, not less than 1.2 per cent. nor more than 1.25 per cent. of morphin in crystals. The average dose is 0.5 c.c. (8 minims). While there has been some controversy as to who originated this particular preparation, there has never been any difference of opinion as to its possibilities and uses. From the sedative elixirs of nearly a century ago to the Scotch oats essence of the present day there have been many attempts to exploit deodorized or masked opium preparations, as harmless vegetable compounds. Another class of preparations, like "McMunn's Elixir of Opium," has been exploited as embodying some wonderful discovery in the treatment of opium.³ The official deodorized tincture is in every way distinctly superior to all of these nostrums, because, as noted under deodorized opium, it has the advantage of economy, efficiency and reliability.

Other Preparations of Opium.

There are but three other galenic preparations of opium official in the present Pharmacopeia.

TINCTURA IPECACUANHÆ ET OPII.—U. S.—Liquid Dover's powder. This is of practically the same strength as the well-known powder of ipecac and opium.

Average dose: 0.5 c.c. (8 minims).

PULVIS IPECACUANHÆ ET OPII.—U. S.—Has been noticed under ipecac (see Chapter II). It contains 10 per cent., each, of ipecac and of powdered opium.

Average dose: 0.500 gm. ($\frac{7}{8}$ grains).

TROCHISCI GLYCRRHIZÆ ET OPII.—U. S.—This has been previously noticed.

Morphin and Codein.

The alkaloids, Morphin and Codein, are of nearly as much interest as opium.

Morphin was discovered by Sertürner, a German apothecary, in 1805, and was used in medicine as early as 1820. There are four official preparations:

MORPHINÆ.—U. S.—This alkaloid, obtained from opium, occurs as colorless or white shining rhombic prisms or as fine needles, or as a crystalline powder. It is odorless and has a bitter taste.

Average dose: 0.010 gm. ($\frac{1}{5}$ grain).

MORPHINÆ ACETAS.—U. S.—This salt of morphin should be kept in well-stoppered, dark amber-colored bottles, and a minute quantity of free acetic acid should be present to prevent decomposition.

Average dose: 0.015 gm. ($\frac{1}{4}$ grain).

MORPHINÆ HYDROCHLORIDUM.—U. S.—Like the acetate, this should be kept in well-stoppered dark bottles.

Average dose: 0.015 gm. ($\frac{1}{4}$ grain).

MORPHINÆ SULPHAS.—U. S.—Like the other morphin salts, this should be kept in well-stoppered dark bottles.

Average dose: 0.015 gm. ($\frac{1}{4}$ grain).

2. This preparation is superior to the widely used proprietary preparation of opium "Scenapia," over which it has the advantage of economy, activity and even general reliability since the accompanying directions for assay are not alone accurate, but are readily followed by any one versed in chemical assay work.

3. "Papine" would be a gem among these if the claims made for it were true, but we can not believe that any preparation of opium "containing the pain relieving principle (which we know to be morphin) can be "a safe opiate for children under one year."

Sulphate of morphin is much the most frequently used in this country, while the hydrochlorid is generally given the preference in Europe. The acetate is the most readily soluble in water, but is quite unstable, losing acetic acid on exposure to the air, and, as the alkaloid morphin requires 3,330 parts of water for solution at ordinary temperatures, considerable care should be exercised in the use of old, and possibly decomposed, samples of morphin acetate.

While the new Pharmacopeia gives 0.015 gm. ($\frac{1}{4}$ grain) as the average dose of the salts of morphin we believe that this is too high as the "average" dose.

Cocain and two of its salts are official: Codeina, Codeina Phosphas, Codeina Sulphas.

Cocain, in addition to being obtained from opium, is also prepared from morphin by methylation. It was discovered by a French chemist, E. Robiquet, in 1832, but was not generally used in the practice of medicine until many years later. It was admitted into the U. S. Pharmacopeia in 1880; the phosphate and the sulphate are now official for the first time. The sulphate is the form most frequently employed in this country, though it appears to be but little known abroad, where the phosphate is mainly used. The phosphate was considered under the subject of Expectorants. Cocain has been considered a somewhat uncertain drug, owing to its frequent contamination with morphin, but the Pharmacopeia provides a test for its purity, and particularly for detecting the presence of the more poisonous alkaloid.

The phosphate, being readily soluble in 2.5 parts of water, is particularly well suited for hypodermic use; or it may be prescribed alone in syrup or combined with chloral hydrate or the bromids; in the latter case the mixture should be directed to be shaken before using.

The average dose of cocain or of any of its salts is 0.03 gm. (30 mg. or $\frac{1}{2}$ grain).

Apomorphin Free from Habituation.

APOMORPHINE HYDROCHLORIDUM.—U. S.—which was also mentioned under "Expectorants," Chapter 2, has been recently brought to notice as a hypnotic, in doses of 0.002 (1/30 grain). It is said to have the great advantage of not producing a drug habit.

Heroin and dionin are proprietary articles of the morphin group possessing some advantages, but they are not free from danger. The heroin habit is beginning to be common and should be carefully guarded against.

Cannabis Indica Unimporant.

CANNABIS INDICA.—U. S. AND BR. INDIAN CANNABIS is a well-known member of the opium group. It occurs in dark-green or brownish compressed masses, having an agreeable narcotic odor and characteristic taste.

It appears to have been used by the Hindoos from very early time. It was also known to the Egyptians and to Dioscorides, but it was not introduced into England until about 1835.

Average dose: 0.05 gm. (1 grain), but rarely used in substance.

EXTRACTUM CANNABIS INDICÆ.—U. S.—is an alcoholic extract reduced to a pilular consistence.

Average dose: 0.01 gm. (1/5 grain).

FLUID EXTRACTUM CANNABIS INDICÆ.—U. S.—Dose, 0.01 c.c. (1 minim).

TINCTURA CANNABIS INDICÆ.—U. S.—represents 10 per cent. of the drug extracted with alcohol. Average dose, —0.5 c.c. (10 minims).

At one time cannabis indica was supposed to have great virtues as an antispasmodic, analgesic and narcotic, and it was highly recommended by a few physicians as a vasomotor stimulant, uterine stimulant, etc. It is now but little used and there seem to be few conditions in which one of the preparations of opium could not, advantageously, be used in its stead.

4. It may be worth while to notice the importance attached to the extract of cannabis indica by the makers of bromidia, who claim that their preparation is the only hypnotic that has stood the test in every country for thirty years. Since all the other constituents are very commonly used, one must infer that they consider the "genuine imported extract of cannabis indica" of exceptional value. Bromidia is claimed by the manufacturer, contains 15 grains each of chloral hydrate and potassium bromid, and 1.8 grain each of genuine imported extract of cannabis indica and extract of hyoscy-

Other Members of the Opium Group.

Two other members of the opium group are Sanguinaria, which we have had occasion to mention elsewhere, and the feebly-acting

LACTUCARIUM.—U. S.

Average dose: 1 gm. (15 grains).

TINCTURA LACTUCARIUM.—U. S.—is a 50 per cent. solution of lactucarium in diluted alcohol.

Average dose: 2 c.c. (30 minims).

SYMBIFUS LACTUCARIUM.—U. S.—is much more commonly employed, its popularity being largely due to a nostrum.

Average dose: 8 c.c. (2 fluid drams).

The Atropin Group.

The atropin group includes the crude drugs yielding the mydriatic alkaloids, such as atropin, hyoscyamin and hyoscin, or scopolamin, all of the latter being closely related chemically.

The actions of atropin and its congeners are so important and so complex that it is entirely beyond the scope of the present article to attempt anything like a complete description of them. The reader can not avail himself of this potent and important class of agents without a careful study of their pharmacologic and therapeutic actions. We shall, therefore, call attention to a few of their more important applications and contraindications without entering deeply into the reasons.

Atropin is useful as an analgesic mainly when the pain is of spasmodic origin and when the application may be made directly to the nerve ends of the affected tissues. In the pains of lead colic this may be accomplished by the internal use of one of the preparations of belladonna, preferably a pill of the extract coated with salol or keratin.

The most prominent action of atropin is seen in the dilation of the pupil, but the more rapidly acting and less enduring homatropin hydrochlorid is usually preferred for this purpose, if the object is merely to examine the eye—atropin, if it is desired to paralyze accommodation for some time, as in inflammatory conditions.

While the mydriatic effect is so similar with the different members of this group, it must be remembered that they have very dissimilar actions on the brain.

Use as Anesthetics.

The constant search for less dangerous anesthetics than ether and chloroform brings many substances into notice. Morphin and scopolamin have found an ardent champion in Korf, who has used them for several years. He employs up to 0.035 gm. ($\frac{1}{2}$ grain) of morphin and 0.0013 gm. (1/45 grain) of scopolamin. Unconsciousness does not occur and he claims absolute quiet must be maintained, while he stops operating long enough for pain to subside. He advises drops of chloroform or ether when necessary. The tongue must not be permitted to fall back into the throat. Its application in surgery must obviously be very limited. A discussion of a number of fatalities attending the use of morphin and scopolamin for general anesthesia will be found in *La Semaine Medicale*, Nov. 8, 1905, p. 529.

Scopola.

The crude drugs and their preparations belonging to this class are so numerous and so well known that it is hardly necessary to enumerate them. Besides Belladonna Root and Leaves, Hyoscyamus and Stramonium Leaves, a member now official for the first time, is Scopola.

SCOPOLA.—U. S.—The dried rhizome of *Scopola carniolica* (Jacquin) (Fam. *Solanaceæ*), yielding, when assayed as directed in the Pharmacopeia, not less than 0.5 per cent. of its alkaloids, has little odor and a sweetish, afterward bitterish, acrid taste. Though described by Dr. Scopoli in 1771, it attracted but little attention from the medical profession until it was used in manufacturing "belladonna" plasters.

Average dose: 0.4 gm. ($\frac{3}{4}$ grain).

mus, to the teaspoonful. Thus a single repetition of the dose—one teaspoonful—might prove fatal, since 30 grains of chloral hydrate have caused death; but the manufacturers advise hourly doses so long as may be necessary to induce sleep. The extravagant claims made by the manufacturers of this nostrum have induced many physicians to use it in preference to prescribing the several official constituents according to individual needs, and today it is offered direct to the public at cut-rate prices.

FLUIDEXTRACTUM SCOPOLÆ.—U. S.

Average dose: 0.05 c.c. (1 minim).

SCOPOLAMINÆ HYDROBROMIDUM. U. S.—is chemically identical with Hyoscine Hydrobromidum U. S.

This has been used in the treatment of nervous excitement, particularly of the insane. It often induces quiet sleep at night—not usually in the day—and may also lessen sexual excitement. Atropin, on the other hand, has been used to stimulate the brain in cases of depression.

Average dose: 0.0005 gm. (0.5 mg. 1/125 grain).

Hyoscin is of Little Use as an Analgesic or Soporific.

HYOSCYAMINÆ HYDROBROMIDUM. U. S., and

HYOSCYAMINÆ SULPHAS.—U. S.—These are used very much as Hyoscin.

Average dose: 0.0005 gm. (0.5 mg. 1/125 grain).

None of the mydriatic alkaloids should be used as soporifics except in case of urgent need, as the benefits may be more than counterbalanced by the disadvantages. Hyoscin and hyoscyamin are of little use directly in relieving pain; hence, they can hardly be considered as analgesics.

Any of these alkaloids may be given alone as tablet triturates or as compressed tablets, hypodermically or alone in aqueous solution.⁵

R. Tincture belladonnæ fol.

Tincture lobellæ, of each 3i℥ 10

Spiritus ætheris nitrosi, q. s. ad 3i℥ 100

Of this a teaspoonful is given every hour or two until relief is obtained.

The bromids of ammonium, sodium or potassium may be used with the prescription given, but in that case adjuvant or aromatic elixir should be substituted for the spirit of nitrous ether, and, as in every case when bromids or iodids are combined with alkaloids, the mixture is directed to be shaken.

The extracts of the crude drugs are much to be preferred to the alkaloids as additions to purgatives, since the latter would be largely absorbed from the stomach, whereas the local action on the intestine is desired.

(To be continued.)

Clinical Notes

AUTOMOBILE FRACTURE OF THE LOWER RADIAL EPIPHYSIS IN A SEVENTEEN-YEAR-OLD BOY.

FREDERIC WADE HITCHINGS, S.B., M.D.
CLEVELAND.

The following case is of interest on account of the method of occurrence of the fracture, its location and the absence of deformity which resulted. Inquiries of different surgeons indicate that automobile fractures in themselves are much more common than a search through the literature would indicate. Ghillini¹ has reported the only similar case that I have been able to find.

Patient. H. P., a 17-year-old boy, was first seen on Sept. 30, 1905. He gave a history of having broken his nose when 2 years old and of breaking his ankle four years ago in a hockey game.

History of Injury. Three hours before I saw him he was trying to start the engine of a 40 horse-power automobile, when the crank snapped back.² His right hand, which at no time left the crank handle, was quickly and violently forced forward, and he experienced severe momentary pain in his wrist, which was followed by a dull ache. He was positive that his hand grasped the handle firmly during this time.

Examination. This showed a moderate degree of swelling on the flexor side of the carpus and lower radius and ulna. There was marked tenderness over the lower end of the radius, and the voluntary motion of wrist and fingers was limited. There was no apparent deformity and crepitus was

not obtained. Owing to the absence of deformity, an examination under ether was not made. The provisional diagnosis of separation of the lower radial epiphysis was made. Anterior and posterior splints were applied.



Fracture of lower radial epiphysis (tracing from x-ray plate by Stern). A, Line of fracture; B, line of epiphysis; C, radius; D, ulna.

The next day a Roentgen ray exposure showed that the parts were in normal position, but that there was a crack in the lower radial epiphysis. By that time the wrist was considerably broadened through swelling, and the point over the fracture was extremely tender. Routine treatment was followed.

A CASE OF CANCER OF THE PROSTATE (DIAGNOSED AFTER OPERATION).

FRANK S. BULKLEY, M.D.
AYER, MASS.

Patient.—W., aged 53, born in Ireland, foreman in tannery.

Family History.—Both parents lived to an advanced age. One brother died at about the age of 50 of an indefinite trouble with urinary symptoms.

Personal History.—The patient had the commoner diseases of childhood, had had a right inguinal hernia for 15 years, but had never had any severe sickness. No venereal history. Habits always good; never drank, and smoked only in moderation.

Present Trouble.—About September, 1904, he began to notice some frequency of micturition. This continued, and during December, 1904, he consulted a physician, who examined the urine, told him it was normal, and prescribed a diluent. The trouble continued until August, 1905, when he consulted a second physician, with the same result. At this time he had to get up on an average of every hour during the night, the interval between urinations during the day approximating normal. There was practically no pain connected with the act. He never had noticed any bleeding.

Sept. 15, 1905, I saw the patient for the first time while he was suffering from an attack of retention, associated with the incontinence of retention. A silver prostatic catheter was passed with difficulty and one pint of clear urine drawn off. Catheterization at six-hour intervals was necessary for the next twenty-four hours, and then a soft instrument was tied in and the bladder drained for forty-eight hours. After drainage was discontinued the catheter was passed three times daily until the day of operation.

Physical Examination.—Well-developed man of apparently 50 to 55 years old. Rather stout. Color good. Pupils equal

⁵ The drugs of this group are so often used in asthma with benefit that we suggest the following as an example of the way they may be prescribed:

1 Zofis, C. Orthopedic Clin. 1904 xiii, 759-64.

2 For an explanation of the cause see Lund's article in the Boston Med and Surg Jour., 1904, vol. cll, p. 481-3.

and react to accommodation, and light knee jerks lively. Lungs negative. Heart not enlarged, sounds of good character and free from murmurs. Aortic second sound slightly accentuated. Pulse of rather high tension, vessels slightly thickened. Abdomen negative, except for right inguinal hernia. Prostate as felt per rectum moderately enlarged, firm, slightly tender and not nodular. Urethral length nine inches. Residual urine 280 c.c., sp. gr. 1012. No albumin or sugar, urea 1.70 per cent., no pus, blood or casts in sediment.

Operation.—Prostatectomy was advised, and the patient entered the Massachusetts General Hospital for operation. Suprapubic prostatectomy was performed Sept. 30, 1905, by Dr. James G. Mumford, the bladder being exposed by Noble's transverse incision. The enucleation of the prostate was extremely difficult, but the patient stood it well and was put to bed in good condition.

Microscopic Diagnosis.—Cancer apparently limited to prostate.

Later History.—For three weeks after operation the patient did well, when he had a gastric upset, and the amount of urine became diminished. This apparently uremic condition did not respond to treatment, and he died November 5. No autopsy was permitted.

In making the diagnosis of hypertrophy of the prostate in this case the possibility of its being a malignant enlargement was suggested by his age at onset and the short time elapsing before retention developed. Pain was practically absent, there was apparently complete absence of hemorrhage, and there was no weakness, much less cachexia. The latter facts were considered to be against a malignant enlargement.

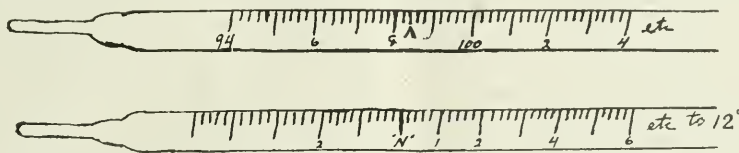
The case is reported simply to put it on record because of its rarity.

SAFETY PIN SAFELY PASSED BY CHILD OF SIXTEEN MONTHS.

J. A. POSTLEWAIT, M.D.

TAKKIO, MO.

In THE JOURNAL of Nov. 25, 1905, Dr. L. W. Littig reported a case of a child eleven months old who swallowed a safety pin one and one-eighth inches in length and passing it in a few hours less than five days. No inconvenience was suffered and no treatment was given. Some time since I had an experience much the same with a child sixteen months old. In my case the safety pin swallowed was one and one-fourth inches long,



open, and three-fourths of an inch wide at the angle of opening. The safety pin was swallowed at noon on Saturday and on the following Thursday at 9 a. m. it was passed. The child did not suffer and no treatment was given.

New Instruments

AN IMPROVED PERIOSTEAL ELEVATOR AND SPATULA FOR SUBMUCOUS RESECTIONS.

CHARLES NELSON SPRATT, B.S., M.D.

MINNEAPOLIS.

While not desiring to add to the large list of instruments devised for submucous nasal work, the instrument as shown in the accompanying illustration has proved of such assistance to me that I think it of sufficient value to merit publication. The instrument is 16.5 cm. long. The spatula measures 15x18 mm. and is a little over 1/10 mm. thick. The periosteal elevator is 5 mm. wide. The advantages of the double curve or "S" shape are as follows:

1. The curve of the instrument fits the hand and allows a firm grasp.

2. Although the force is applied in a straight direction, the hand is out of the line of vision, as with instruments having the "nasal angle."



3. The curve to the periosteal elevator is sufficient to cause the edge to stay in contact with the cartilage or bone.

4. The spatula end can be used as a retractor for the mucous flap or to hold it against the septum in inserting the packing. In either case the hand is out of the line of sight and the field of operation is unobstructed.

THE NEED OF A NEW SCALE FOR THE CLINICAL THERMOMETER.

L. D. PEEBLES, M.D.

DENVER.

I desire to call the attention of the profession to the fact that an improvement in the means of quickly and accurately determining any deviation from the normal temperature is possible.

By the present method, when a temperature is 96.8 degrees it takes at least a little time to find that it is 1.6 degrees below normal. If it is 102.4 degrees it likewise requires more than a glance to see that there are four degrees of fever.

In the improvement that I suggest the exact amount above or below normal is at once seen, as I would have on the new scale the letter N to represent normal, which on the present scale is 98.4 degrees, and have it marked off in full degrees with fifths above and below.

Thus a temperature of 102.4 degrees on the present scale would be exactly four degrees above normal on the new scale and could be so recorded, while a temperature of 95.4 degrees on the present scale would be exactly three degrees below normal on the new scale.

As the clinical thermometer is only used for medical purposes, I think it full time that we should have one all to ourselves.

New Scale.

| | |
|---------------------------------|---------------|
| N represents..... | 98.4 degrees |
| 1 degree above represents..... | 99.4 degrees |
| 2 degrees above represents..... | 100.4 degrees |
| 3 degrees above represents..... | 101.4 degrees |
| 4 degrees above represents..... | 102.4 degrees |
| 1 degree below represents..... | 97.4 degrees |
| 2 degrees below represents..... | 96.4 degrees |
| 3 degrees below represents..... | 95.4 degrees |
| 4 degrees below represents..... | 94.4 degrees |

Present Scale.

[EDITOR'S NOTE.—We agree with Dr. Peebles that his suggestion is a valuable one, but we should prefer to have the scale which he proposes added in another color to a thermometer which already had the present scale. Thus one could tell the actual temperature or the deviation from normal, as preferred. If Dr. Peebles' scale alone were on the thermometer a sum in addition would be required in order to secure the actual Fahrenheit temperature for record or for comparison with the other system. Of course, it will not be possible immediately to do away with the old system and a new thermometer should have the old scale on it for comparison.]

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THE TRANSMUTATION OF SPECIES IN BACTERIOLOGY.

The doctrine of the transmutation of species, of the conversion of one kind of organism into another, has always had and doubtless will long continue to have a fascination for a certain class of minds. At one time some naturalists saw nothing improbable in the metamorphosis of barnacles into geese or even of the trunks of trees into large animals. As regards lesser forms of life the doctrine of heterogenesis was almost a universally accepted scientific belief. In the early days of bacteriology the notion of transformation among such exceedingly minute organisms as bacteria found, as was natural, many adherents, and the half-understood facts and but slightly trammelled fancies put forward by Bechamp, Billroth, Naegeli and others left an indelible mark on the young science. In recent years the veteran Bastian has continued to advocate the spontaneous generation of micro-organisms out of non-living matter, and it was but yesterday that the "radiobe" was welcomed with easy credulity. DeVries' theory of mutation has seemed to some to afford support to the doctrine of transformation, although such an interpretation appears to us to be based on a misunderstanding of the nature and scope of mutations. On the whole, it is not surprising that instances of the change of one bacterial species into another should be brought confidently forward from time to time for confirmation. The view once held by a certain school of French bacteriologists regarding the transformation of *B. coli* into *B. typhosus* has, to be sure, been virtually abandoned, but belief in the fluctuating character of the species in the colon typhoid group is still active.

Recently the alleged transformation of *B. (fecalis) alcaligenes* into *B. typhosus* has been the theme of appreciative comment. Altschüler observed that when cultures of *B. coli*, *B. paratyphosus* and *B. typhosus* were cultivated on a sterile human placenta the two former organisms remained unchanged, but after from four and one-half to six weeks the original culture of *B. typhosus* developed a yellow growth on potato, produced alkali in litmus whey and became inagglutinable by typhoid serum.

Conversely, under other conditions a culture of *B. alcaligenes* seemed to change into *B. typhosus*. These results of Altschüler were apparently confirmed by Doeber¹, who concluded that "the culture of our labora-

tory, labeled '*B. f. alcaligenes* (Petruschky)', is so changed by passage through the bodies of three guinea-pigs that it is no longer to be distinguished by the ordinary methods—culture, agglutination—from a true typhoid bacillus." Berghaus,² however, assistant in the same laboratory, has now ruthlessly shown that the culture with which Doeber worked was not a pure culture, but was a mixture of two kinds of bacteria. One of them was the true typhoid bacillus, the other *B. alcaligenes*. In brief, what happened in Doeber's experiments was that as a result of animal passage *B. alcaligenes* went to the wall, while *B. typhosus* survived and was isolated in pure culture at the finish. Trommsdorf,³ assistant in the Munich laboratory, has also reached, independently, the same results as Berghaus; he concludes from a series of experiments that the typhoid bacillus and *B. alcaligenes* are "well differentiated species." This is not the first denouement of the sort in bacteriology, and the occurrence may well suggest to bacteriologists the importance of testing the purity of a culture by multiple plating or in other ways. The question naturally arises as to how far the perplexing results obtained by some investigators, for instance, those working with the pneumococcus-streptococcus group, can be attributed to cultures of doubtful purity.

SURGICAL ASPECTS OF FOOTBALL.

We have called attention several times to the number of deaths that take place every year from football, and have emphasized the fact that in the season just passed more than a score of fatalities were reported as having occurred. This, of course, is too large a number of fatal accidents for any mere sport. There must be something in it besides sport, an appeal to the brutal instincts of human nature, or some less worthy incitement even than this, to make young men continue to indulge in a game which is the cause of so many deaths. It has been said over and over again, however, in answer to any such arraignment of the game, that the fatal accidents take place only on minor college teams, where the men are not properly trained and hardened to stand the brunt of the necessary football severities. Serious injuries are said not to occur at the large universities. The very obvious retort would be that since the smaller colleges imitate the large universities, which are supposed to be the great centers of culture in this country, it is too bad that the example set must have such serious consequences.

As the conclusion of a recent careful medical study of the game and its attending injuries, there is, however, a much more direct and forceful answer that may be given to the objection. Dr. Edward H. Nichols and Dr. Homer B. Smith, who had the medical and surgical care of the football squad of Harvard during the past season, have given their observations and conclusions in

1 Hygiene Institute, Univ. of Berlin.

2 Hyg. Rundschau, 1905, 15, p. 761.

3 Münch. med. Wochts., 1905, 52, p. 1667.

an article¹ on "The Physical Aspect of American Football." We may say at once that their conclusions are entirely against the game as judged from its medical standpoint. They say that the number, severity and permanence of the injuries which are received are very much greater than is generally credited or believed. They consider a large percentage of the injuries unavoidable, and state that constant medical supervision of the game is a necessity and not a luxury. At Harvard the constant attendance of two trained surgeons is required. Furthermore, they consider that the number of injuries is inherent in the game itself, and is not due especially to close competition in big games, since the proportion of injuries received in games and in practice is about the same.

Some of the details of the report on which these conclusions are based make a very interesting surgical catalogue. Of cuts that required stitches there were 12; of fractured ribs there were 5; of dislocations of the shoulder, 2; ruptured muscles, 6; dislocated semilunar cartilages, 10; broken noses, 7; fracture of the rim of the pelvis, 4; dislocation of the acromial end of the clavicle, 11; concussion of the brain 19; fracture of cervical vertebra, 1; and middle meningeal hemorrhage, 1. A young surgeon who desired the training of an active practice in rather serious surgical injuries of very varied nature evidently could not do better than to obtain the appointment as attending surgeon to a football squad. Now that war's opportunities are lacking for surgical practice, this chance should not be forgotten. As is very well said by the authors of the report, many of the joint injuries received are of such a character as to be likely to become progressively worse, and many of the injuries to the shoulder are certain to cause some disability in later years.

Perhaps the most serious feature of these accidents is the number of concussions of the brain reported. Only two games were played during the entire season in which a case of concussion of the brain did not occur. Frequently the fact that a man had received this serious head injury was noted by the surgeon from the side lines before it was recognized by the player. At times a man thus hurt continued automatically to go through the motions of playing until his mates noticed that he was mentally irresponsible. When a condition like this develops as the result of an injury, the central nervous system has received a very severe shaking up. There was a time when it was considered that convulsions and other untoward incidents in the conscious life of the individual were not likely to be followed by serious consequences. This is not the opinion at the present time, however. One of the questions always asked by nerve specialists with regard to nervous diseases developing later on in life, is whether or not the individual ever suffered from convulsions in childhood. A state of affairs in which the individual acts as an automaton after an

injury is not so different in character from a convulsive seizure. If the one is supposed to have serious consequences so may the other. At the present time no one is ready to say whether concussion of the brain may or may not have serious consequences in after life.

The whole report of the two surgeons in charge of the Harvard squad should be read by every prominent educator throughout the country, and it should be the duty of the members of the medical profession to see that it is called particularly to their attention. Surely, no one will consider after this calm exposure of the inside history of football injuries, even at a great university where no effort is spared to bring the men into the pink of condition, that football is to be considered a game without serious risks, no matter what the preparation, or that it is to be compared with any of the other sports in this matter of liability to serious injury. An attempt has been made to gloss over football's worst aspects by widely published suggestions that no game is entirely without the danger of death under accidental circumstances. In football, however, as the Harvard surgeons emphasize, the injuries are absolutely dependent on the present methods of playing the game itself, and are bound to occur. The fact that 145 injuries, for that is the total of the Harvard record, the least of which were cuts—twelve in number requiring stitches—occur in one season of play is of itself enough to stamp the game as something that must be greatly modified or abandoned if we are to be considered a civilized people, and if our universities are to be considered centers of influence for good. The additional conclusion in the report that the game as now played encourages weight too much at the expense of nervous energy to be really athletic, should be its death knell in its present form unless our university authorities fear unpopularity more than they dare to be right.

THE SPIROCHÆTA PALLIDA.

As further reports concerning this protozoön appear, it becomes more possible that Fritz Schaudinn and Erich Hoffmann, the discoverers of the *Spirochæta pallida*, have found the micro-organism that causes syphilis. Schaudinn and Hoffmann have contented themselves, however, with merely stating that this parasite is found constantly in all syphilitic lesions of the secondary stage, and do not assert that it therefore produces the disease.

Since their first report last May, the *Spirochæta pallida* has been found in various syphilitic products by more than 100 observers, and the amount of literature that has appeared is proof of the interest aroused in the subject. As Koch had to face the assertion that the tubercle bacillus was merely a fat crystal, so Schaudinn and Hoffmann had to meet the argument that their spirochete did not differ from the common ones already known to bacteriologists, and that the micro-organisms had merely grown in the staining fluid as a culture medium after its accidental contamination. Their convincing description of their work, however, soon silenced

1. Boston Med. and Surg. Jour., Jan. 4, 1905.

such trivial opposition, and since then confirmations of their findings, accompanied in many instances by microphotographs, have been pouring in.

The *Spirochæta pallida* is not a fission fungus, but is of animal nature, an animal micro-parasite or protozoön of the group *Flagellata*. In contrast to this, the well-known spirilla, which resemble it in form, are vegetable parasites. The form of the *Spirochæta pallida* is that of a very thin, corkscrew-like thread with regular, numerous spirals, deep and close together. The pallida is the smallest of the spirochetes. Its length varies from 4 micro-millimeters to 20 in exceptional cases. It is probable that such long specimens are produced by end-to-end apposition of several individuals. The thickness of the *Spirochæta pallida* varies from immeasurable slenderness to one-fourth of a micro-millimeter. At each end of the organism there is a slender, straight, hair-like flagellum, and some of the micro-parasites have two of these at one of the poles. The *Spirochæta pallida* is capable of various motions. One of these is of a screw nature, the animal rapidly rotating on its axis in one direction and then reversing the motion. There are also bending, sinuous and whip-like movements of the entire body. The motions persist even after six hours in physiologic salt solution. No cultures have been obtained so far from any type of spirochete.

The *Spirochæta pallida* is very difficult to stain and after staining appears much more faintly colored than the common varieties of spirochetes. The stain employed by Schaudinn and Hoffmann is Giemsa's eosin azure solution. H. Ploeger has also succeeded in staining it with a one-minute immersion of the slide in a 10 per cent. concentrated alcoholic solution of gentian violet with 2.5 per cent. of carbolic acid. The parasite may be seen with an oil immersion lens and magnifying power of 800 diameters.

In balanitis, scrofulous abscesses, papillomata and the scrapings from carcinoma spirochetes have been found that resemble in appearance the *Spirochæta pallida*. These common forms, however, possess an undulating membrane, readily seen as a shadowy outline, and they are usually much coarser than the pallida. The spirals flatten when they are at rest, while those of the *Spirochæta pallida* are preformed and constant. Though exceptionally slender, forms of these common spirochetes may resemble the pallida; they are always mingled with the coarser specimens of the micro-organism, while the *Spirochæta pallida* exist in pure culture in syphilitic tissues. The *Spirochæta pallida* has been found in the deeper layers of primary lesions, in fluid extracted from syphilitic inguinal glands, in secondary papules, in the blood of the spleen at the time of the syphilitic roseola and in the spleen of a child who died of congenital syphilis. Nearly pure cultures have been found in the fluid from syphilitic pemphigus blisters. Metschnikoff inoculated an ape with syphilis and found the *Spirochæta pallida* in the primary lesion produced. The micro-parasite has never been demonstrated in the tertiary products of

syphilis. The *Spirochæta pallida* is difficult to see, so that practice is required before it can be readily found in specimens examined. Further research, perhaps extending over years, will be needed to establish it as the micro-parasite that causes syphilis or to disprove its claim to such distinction. Meanwhile, the number of those studying it is on the increase and interesting developments are to be expected.

THE APPENDICES EPIPLOICÆ AS A CAUSE OF ABDOMINAL DISEASE.

It would almost seem that the enormous number of abdominal operations which are now done each year would have made us acquainted with not only the most common but also the most uncommon intra-abdominal lesions. That this is not entirely the case is shown by the cropping up, from time to time, of conditions which are not mentioned in the ordinary textbooks and are often but barely noted in the literature. At first sight some of these conditions seem so unusual and bizarre that we are apt to regard them as mere medical curiosities, and to think of them as conditions which may be left to the consideration of the diagnostic hair-splitter, but which have no great interest for the practical physician. The history of many of these apparent medical rarities shows, however, that, once pointed out, they become more and more common, and the publication of a single case is often followed by a veritable avalanche of reports of a similar nature.

The lesions which may be produced by changes in the appendices epiploicæ have as yet received but little attention, and it is hardly realized that they are probably not so very uncommon. A year ago Rixford¹ called attention to the clinical aspects of inflammation of these bodies, and more recently Riedel² has reported the results which may follow their elongation and detachment. In case of inflammation the symptoms produced usually simulate those of a mild attack of appendicitis, but differ from the ordinary case in that the localizing symptoms are on the left instead of the right side. Very often there has been antecedent constipation over long periods, and attacks of left-sided pain and tenderness with nausea and perhaps vomiting may have recurred at intervals.

The conditions which may result from the elongation of the appendices are either the production of intestinal obstruction from the mechanical action of the bands so formed or the detachment of the free and often enlarged end of the involved appendix epiploicæ which is then present in the peritoneal cavity as a free body. More rarely an elongated appendix may become part of the contents of a hernial sac, become twisted and give rise to the symptoms of a strangulated hernia. In the cases in which intestinal obstruction is produced the symptoms are those usually associated with this condition, and it is, of course, impossible to make a diagnosis be-

1. California State Jour. of Med., II, No. 10.

2. Münch. med. Wochft., III, No. 48.

fore operation. The free bodies in the peritoneum may give rise to symptoms suggesting gallstones, recurrent attacks of pain and sometimes slight jaundice, or appendicitis may be simulated. In some instances a fatal peritonitis has been produced.

The explanation of the production of such marked symptoms by such small and apparently innocuous masses of fat is difficult, and the symptoms do not correspond at all to what we should expect from our knowledge of the resistance of the peritoneum. In one instance Riedel was able to cultivate the colon bacillus from the interior of such a free, fatty body, which showed every evidence of having been in the peritoneal cavity for some time. It is, of course, possible that the bacteria entered from the intact intestine, a process which might be rendered more easy by association with false diverticula, which are not uncommon in connection with changes in the appendices epiploicæ. Riedel's article in particular shows that these structures give rise to intra-abdominal conditions much more frequently than has hitherto been supposed, and we may expect that such cases will assume greater importance in the future.

RECIPROITY BETWEEN NEW YORK AND NEW JERSEY.

In this issue¹ will be found the rules regulating reciprocity between New York and New Jersey. The examining and licensing boards of these states met last October and compared their methods of procedure as regards the licensing of physicians. After a full discussion they adopted the rules as published and recommended the amendment of the laws in one or both states, thus doing away with a number of minor differences now existing. This is a step in the right direction. Such adjustments should be made in the various states until there is a single standard regulating the practice of medicine in this country to displace the present chaotic conditions in which each state has a standard of its own.

MEDICAL STUDENT REPUTATIONS.

There have recently occurred among medical students class rushes and fights such as take place from time to time in literary colleges, and they are certainly a discredit to the alleged maturity and common sense of professional students. Such happenings are sometimes condoned in undergraduates of literary colleges on account of the immaturity of the participants; in any case no sensible person wishes to repress a proper youthful spirit of fun, but there should be a line drawn, beyond which no student dare go without summary action by college authorities. When one has attained the years which are supposed to be of discretion and suitable for the higher professional studies, and when one is a candidate for—or one might almost say member-elect of—an honorable profession it is time to have regard for reputation. The reputation of medical students is one of which every respectable medical man is ashamed, and those in charge of medical colleges are responsible for

it to a large extent. Every well-wisher of the profession will echo the sentiments of Dr. Roswell Park, who, because of the street fights by Buffalo professional students, wrote to the student fraternities urging them to remember that their members already bear some responsibilities as men and members-elect of various honorable professions.

A SUBSTITUTE FOR THE OYSTER.

The importance of the oyster as a food and as a factor in the etiology of typhoid fever render a possible substitute for it of medical interest. The abalone² is a giant snail, weighing from one to two pounds, living in practically unlimited quantities in the deep waters of the ocean, and easily gathered along the entire coast of central and lower California. The flesh is a nutritious and wholesome article of food, highly esteemed by the Chinese and Japanese, but as yet very little used in the United States outside of California. The drying process and the original canning method yield a tough product, but a process has recently been discovered by which these giant snails can be canned and made as delicate as the oyster. They are used in a similar way for food, but have the decided advantage over the oyster that when gathered the viscera can be detached from the muscular parts by the single stroke of a knife. The source being on less populated coasts, offers less danger of typhoid contamination than does that of the oyster and, further, we understand that there is no necessity for fattening the abalone in creeks, as is the case with the oyster. These points are in favor of the new mollusk and seem to give it large possibilities as a food product.

ALLEGED INFIDELITY OF PHYSICIANS.

A clergyman, officially high in his denomination, publishes some statements in a religious paper² that are—to say the least—misrepresentations. He begins by saying that the majority of physicians are infidels in the proper sense of the word, and of medical students he says that "a more ribald, obscene and godless set of young men is not to be found." Later in their careers he practically charges them with habitually lying to their patients; and says that the deteriorating effects of this, with the influence of materialistic views, the habit of neglecting religious worship (which, he says, is general among them), and the constant association with suffering, sickness and death, make them calloused and hardened and non-religious if not actively irreligious. He claims to have been a medical student, and doubtless can speak for himself at that stage of his career, but this does not justify him for slandering the whole class at the present or at any other time. His knowledge of modern medicine is evidently not great, for he says that after 6,000 years of study of the human body the medical profession is unable to explain the use of its largest organ, the liver. His quotation of Sir William Gull, whom he represents as saying that he was correct in only 66 per cent. of all his diagnoses, is, without its context, unjust to that eminent practitioner, who must have made

1. Scientific American, Dec. 16, 1905.

2. Church Standard (Episcopal), Philadelphia, Dec. 23, 1905.

1. Department of "State Boards of Registration," page 142.

the remark with many qualifications and reservations, if he made it at all. The clergyman asks if this is so "what would be the proportion of correct diagnoses of the ordinary physician?" Certainly, for all practical purposes, much better than the above figures, even with the very "ordinary practitioner." The motive of the article seems to be a sort of clerical jealousy of the physician and the magnification of the healing value of the ministrations of the spiritual adviser. We regret to have to make a criticism of a clergyman, for we believe that he represents in these views very few of his colleagues. No honorable physician would wish to deprive his patients of any benefit he can obtain through the ministrations of religion and its representatives. Physicians are not non-religious as a class, however apparently irreligious some of them may be, and it is not at all becoming for a clergyman high in his church to exaggerate or to try to widen the breach that he imagines exists between his own and the medical profession.

SUTURE OF THE DIVIDED SPINAL CORD.

The extraordinary advances that have been made by modern surgery are nowhere better exemplified than in the treatment of certain disorders of the nervous system, especially those of traumatic origin. In numerous instances life has been saved by timely operation for the relief of pressure from fractured or depressed bone or for the control of hemorrhage from a lacerated cerebral blood vessel. Less frequently similar results have been obtained in the case of comparable lesions affecting the spinal cord. On the basis of the experience already gained there is good ground for hope of further brilliant accomplishment as a result of surgical endeavor in this direction. A case in which the spinal cord severed by a bullet has been successfully sutured has been placed on record by Drs. Francis T. Stewart and R. H. Harte, and a second case of similar nature has recently been reported by Dr. George Ryerson Fowler.¹ The patient was a clerk, 18 years old, who was shot in the back with a 38-caliber revolver, the bullet entering the body at a point one and one-quarter inches to the right of the median line on a level between the tenth and eleventh dorsal vertebrae. He suffered severely from shock and immediately exhibited paralysis of the lower extremities, with loss of sensibility up to the level of a line one inch above the crests of the ilia behind, and midway between the symphysis pubis and the umbilicus in front. There was loss of control of sphincters of bladder and bowel, without cognizance of movement of the bowels; and muscular twitching in both legs and especially in the toes. Operation was decided on, and on removal of the laminae of the tenth, eleventh and twelfth dorsal vertebrae the cord was found divided, with the bullet lying transversely between the extremities and concealed from view by a large clot of blood. Bullet and clot were removed and the cord was united by means of three fine chromicized catgut sutures. The further surgical course of the case was uncomplicated and there was some diminution in anesthesia, but the motor palsy and the loss of control of sphincters persisted. The two cases reported demonstrate the wisdom of prompt surgical

intervention, even in cases heretofore considered hopeless, and they further constitute evidence of at least a certain power of regeneration or at any rate of union on the part of the divided spinal cord.

RAILROAD CO-OPERATION IN PROPHYLAXIS.

It is a common rule among the railroads of this country that employes must not drink liquor while on duty, but it is not so common to find the railroads making provisions for their employes which shall lessen the desire to drink. A foreign exchange announces that the Prussian authorities, in enacting rules of this kind, have made arrangements to aid their employes by providing at accessible points good drinking water and boiling water for the making of coffee; and, further, at places where many men are gathered, cafés are to be installed where non-alcoholic drinks can be obtained at low prices. This is a very commendable work and is carried on to a limited extent in this country. As one means to this end, the branches of the Young Men's Christian Association are aided by the railroads as a means of keeping employes in good surroundings. These contributions are commonly charged to the head of betterment of equipment. The president of one of the largest lines in the country has publicly announced that of all the items under the head of "betterment" in the expenses of his road, the greatest returns are received from the subscription which his road makes to the maintenance of Young Men's Christian Association branches. The suggestion as to co-operation with employes in carrying out various rules as to conduct and habits will be of value to superintendents of hospitals and nurses' training schools, medical college deans and others. The keeping of rules of conduct may be favored by the conditions which surround those concerned and which too often are disregarded by the authorities who could better them.

UNWISE ATTEMPTS AT CLIMATIC TREATMENT OF TUBERCULOSIS.

The value of climatic treatment of tuberculosis may be largely or wholly destroyed by the absence of other details of treatment which are considered by many no less important. We recently called attention to the protest of New Mexico physicians against the migration to that state of consumptives without means of support. Unable to secure employment in a market already glutted with others like himself, the consumptive soon finds himself living in poor quarters, eating scanty and cheap food, worried by his future prospects and with very little possibility of improvement in health. Whatever climate can do for such a person is certainly effected in spite of immense odds. During the recent Tuberculosis Exhibition in New York City, the Committee on the Prevention of Tuberculosis of the Charity Organization Society sent a letter calling attention to these facts to the physicians of New York City. The profession of the whole country needs to be reminded again that the removal of a consumptive to another climate will defeat its own aims unless the sick one has means to pay his expenses or has secured in advance an arrangement for his support.

¹ *Annals of Surgery*, October, 1905, p. 507

Medical News

ILLINOIS.

Chicago.

Personal.—In honor of his seventieth anniversary, a dinner was recently given Dr. Isaac N. Danforth by the Therapeutic Club.

Cornerstone Laid. The cornerstone of the new Englewood Union Hospital was laid with elaborate ceremony, December 3. H. C. Staver presided, and Dr. A. P. Foss placed the stone in position. The new building will cost about \$85,000, will be five stories in height, fireproof and equipped in accordance with the most advanced views.

Children's Hospital Society.—At the annual meeting of the Children's Hospital Society Dr. Frank Billings was re-elected president, and Dr. Frank S. Churchill was elected secretary. The president in his address announced that since the organization of the society beds in children's wards in various hospitals of Chicago had increased from 290 to 450. It was proposed to establish tent sanatoria in all the small parks for the children of working mothers, where specially prepared milk might be obtained. The most important work for the society just now is to arouse public interest in the proposed children's hospital for infectious diseases.

Physicians Notified.—Notices have been sent to 3,800 physicians of Chicago, by the Department of Health, calling attention to the new law which provides that every physician who attends any person having a contagious or epidemic disease, such as cholera, yellow fever, scarlet fever, diphtheria, typhus, typhoid fever, smallpox, varioloid, puerperal fever, membranous croup, measles or whooping cough, shall report cases within twenty-four hours, giving the name of the patient and a description of the disease. A fee of 10 cents is allowed for every report, and a penalty of from \$10 to \$200 may be imposed for failure to obey this law.

IOWA.

Endows Bed.—John Norton of Fort Creek, Neb., has given \$1,000 for the endowment of a bed in the Jennie Edmundson Memorial Hospital, Council Bluffs.

Objects to Publicity.—Woodbury County Medical Society, at its last meeting held in Sioux City, adopted resolutions that no member should allow his name to appear in the lay press in connection with any case or in any interview on medical subjects.

Personal.—Dr. Fred P. Bollinger, Council Bluffs, has left for the far East, via Japan. He hopes to reach Thibet.—Dr. X. W. Nesmith, Waukon, has gone to Pensacola, Fla., for the winter.—Dr. an. Mrs. Charles C. Bradley, Manchester, have gone to Southern Pines, N. C., for the winter.

County Society Election.—The Medical Society of Chickasaw County met in New Hampton, December 4. The following officers were elected for the coming year: President, Dr. Edwin N. Johnston, Fredericksburg; vice-president, Dr. L. M. Taylor, Fredericksburg, and secretary, Dr. James F. Torpey, New Hampton.

MARYLAND.

Hospital Report.—The Emergency Hospital, which is conducted under the auspices of the Frederick County Medical Society, in its second annual report, shows that 379 patients were treated, of whom 204 were surgical cases, with one death after operation, and a total of nine deaths in the hospital. There were 138 free and 122 part-pay patients. The Board of State Aid and Charities made no recommendation for legislative appropriations to this hospital, speaking of it as "somewhat limited in scope."

City Insane in State Hospitals.—There are 40 more insane patients being cared for by the city now than a year ago. On January 1 there were 1,334 such patients, of whom 720 were in state hospitals, 249 in Mount Hope Retreat and 365 in Bay-view (city almshouse). For each of these the city pays annually \$150 to the several hospitals; but it was reimbursed by partial payments to the extent of about \$12,000 during 1905. In their report the supervisors "hope that the policy adopted by the state in 1904 of taking over the care of all indigent insane patients will be vigorously carried out."

Baltimore.

Left Large Estate. The estate of the late Dr. George W. Miltenberger amounted to nearly \$250,000, of which \$50,000 was in real estate.

Births and Deaths.—There were 201 deaths and 406 births reported for the week ended January 6. There were 35 deaths from pneumonia and 23 from consumption. Six new cases of smallpox were reported.

Refused Vaccination.—Eleven members of the crew of the British steamer *Jessie Burns*, from England (on which there was a case of smallpox on her arrival, December 31), refused to be vaccinated on board and were brought to the jail and there forced by the police to submit.

Hospital Opened.—The Franklin Square Hospital, attached to the Maryland Medical College, was formally opened January 6. Among those who took part in the ceremonies were Bishop William Paret, Governor Edwin Warfield, Mayor Timanus, Dr. James Bosley, health commissioner, and State Senator J. Charles Linthicum. The improvements cost about \$50,000. The building, as remodeled, is 84 by 100 feet, and the capacity is about 100 patients. Dr. Joseph H. Branham is president of the board of directors.

Reception to Dr. Osler.—Dr. William Osler reached Baltimore from Canada, January 5, and took up his quarters at the Johns Hopkins Hospital as the guest of Dr. Hurd. A reception was tendered Dr. Osler on the evening of January 6, in the rotunda of the hospital, members of the faculty, the house physicians and medical students attending. January 23 he will deliver an address before the Maryland Association for the Relief and Prevention of Tuberculosis, at Annapolis, in advocacy of a state tuberculosis hospital.

Personal.—Dr. William H. Welch has been notified of his election as president of the American Association for the Advancement of Science at New Orleans, January 1.—Dr. Alfred Dohme sailed for Bremen, January 5.—Dr. Howard D. Lewis has been appointed health warden and vaccine physician of the Twenty-second Ward, to succeed Dr. Albert T. Chambers, resigned.—Drs. Robert T. Wilson, Hiram Woods and H. A. Bond have been elected members of the board of trustees of the Female House of Refuge, the latter being made secretary of the board.—C. A. Emerson, Jr., has been elected chemist and bacteriologist to the sewerage commission.

MASSACHUSETTS.

Cremations Increase.—The Massachusetts Cremation Society reports that the number of cremations during 1905 was 225, as compared with 211 the previous year. Among the cremated was the body of Dr. James R. Chadwick, who was president of the society.

Epileptic Hospital Report.—The Massachusetts Hospital for Epileptics reports that during the year 618 patients were cared for at an average weekly cost of \$4.56 per capita. Of the same patients 12 were discharged much improved, 10 improved, 13 not improved and 11 died. Of the insane, 1 was discharged recovered, 1 much improved, 5 improved, 2 not improved, and 13 died.

Tuberculosis Control.—The Boston Association for the Relief and Control of Tuberculosis reports that during the last year its visitors instructed in their homes 716 patients; a day camp at Parker Hill was maintained during the summer months, at which 128 patients were cared for, and largely through their efforts the tuberculosis exhibit in Horticultural Hall was made possible.

Recommends Inspection of School Children.—In his message to the Massachusetts legislature Governor Gould recommended a more general medical inspection of school children, especially for the discovery of infectious diseases and physical defects of eyes, ears or spines. He also called attention to the need of more accommodations for feeble-minded children, of whom a thousand have been refused by the institution at Waltham during the last six years, for lack of space.

Tuberculosis Exhibit a Success.—The tuberculosis exhibit has been most successful. On several days more than 2,500 people visited it, and the interest increased up to the last day, January 7. As a result of the interest developed the new mayor of Boston, John F. Fitzgerald, has taken the first definite steps toward the provision of adequate hospital accommodations for those afflicted with this disease. One hundred and fifty thousand dollars was appropriated several years ago, but Mayor Collins insisted that this amount was insufficient. The present plan is to establish a board of unpaid trustees, to purchase land—an excellent site has already been selected—and to erect temporary or inexpensive buildings. These have been proven to be entirely satisfactory in other tuberculosis hospitals. At present Boston provides only 50 beds for such patients and these are at the hospital on Long Island.

The Brigham Beneficiaries.—Twenty-two charitable organizations received on January 1 their annual payment of \$1,000 each from the estate of Robert B. Brigham. They are: Massachusetts Charitable Eye and Ear Infirmary; Boston Associated Charities; Boston Dispensary; Boston Provident Association; Channing Home for Consumptive Women; Children's Hospital; Children's Mission to the Children of the Destitute; City Missionary Society; Home for Aged Men; Home for Aged Women; Massachusetts Infant Asylum; New England Home for Little Wanderers; Home for Aged Colored Women; Warner Home of St. Albans, in Vermont; Burnap Free Home for Aged Women; Home for Aged Couples; Boston Children's Aid Society; Boston Home for Incurables; Perkins Institute and Massachusetts School for the Blind; Massachusetts Society for the Prevention of Cruelty to Children, and the Boston Lying-in Hospital. The estate is rapidly increasing, and soon the land purchased on Parker Hill, Roxbury, will be used for the great Brigham Hospital for Incurables. The site is one of the finest in Boston, and the plans for the hospital are partly formulated. Much effort has been made to have this institution wholly or chiefly for the consumptives of Boston, but it is not likely that such a plan will be adopted.

MICHIGAN.

Tri-State Meeting. The Northern Tri-State Medical Association of Michigan, Ohio and Indiana met in Detroit, January 9, in the Convention Hall of the Hotel Cadillac.

College Officers Elected. At the annual meeting of the Michigan College of Medicine and Surgery, Detroit, Dr. Hal C. Wyman was re-elected president for the nineteenth time. Dr. Dayton Parker, vice-president, and W. P. Holliday, secretary and treasurer.

Not the State Hospital.—Dr. Blanch N. Epler, Kalamazoo, calls attention to an item in THE JOURNAL, December 16, regarding the Kalamazoo Hospital, and states that this institution has no connection with the State Hospital for the Insane, which is also located in Kalamazoo, and which has recently completed a ward at a cost of about \$60,000.

Personal.—In memory of the late Dr. Louis Golston, Houghton, a memorial room in the new hospital at Kalamazoo is to be dedicated to his memory. —Dr. Beverly D. Harrison, Sault Ste. Marie, has moved to Detroit. —Dr. J. C. Anderson, Grand Marais, has been re-elected physician of Alger County. —Dr. Lucy M. Eames, Muskegon, has been appointed pathologist to the Hackley Hospital in that city.

Medical Aspect of the Social Evil.—Under the auspices of the Wayne County Medical Society, a meeting was held in Detroit, December 18, to bring to the attention of laymen and physicians the dangers arising from venereal disease and the social evil. About 450 were present. The following excerpts will show the trend of discussion.

DR. WILLIAM J. HERDMAN, Ann Arbor: "So grave is this danger that our physical, social, moral and educational forces must be mustered to combat it."

DR. C. B. RICE, Flint: "No more vicious aphorism ever gained foothold in the English language than that every young man must sow his wild oats."

DR. HENRY O. WALKER, Detroit: "Gradual education along the lines of the dangers surrounding them should be advanced to the young."

DR. FLEMING CARROW, Ann Arbor: "Although we have had a statute on our books for over six years, making it a felony for not reporting cases of these diseases, not one case has been reported to the state authorities."

DR. J. HENRY CARSTENS, Detroit: "Thorough education and the publication of the symptoms would prove effective means of prevention."

DR. ALBERT E. CARRIER, Detroit: "We don't begin to realize the danger to the community. It is about time we woke up to this danger."

DEAN HUTCHINS of the Law Department of the University of Michigan: "It is a terrible evil that should arouse all citizens. It is not confined to any one class. It should be fought very largely through our educational system."

RABBI LEO M. FRANKLIN: "It is a social problem, rather than a problem of the individual. If the pulpit is to count for anything it must touch the practical problems of life."

DR. VICTOR C. VARGAS, Ann Arbor: "There are more good people in this world than bad, and when they pull together they can accomplish anything."

At the close of the meeting, Dr. William J. Herdman introduced a resolution, which was adopted, calling for the appointment by President Carrier of the Wayne County Society, of a committee of six, who in turn will select a committee of twenty from all over Michigan, whose duty it will be to organize a state society to carry on the work.

NEW JERSEY.

Vital Statistics of the State.—The annual report of the State Board of Health shows a continued increase of marriages per 1,000 inhabitants for six years, from 1898 to 1903. There was a slight falling off in the rate in 1904. The rate last year was 13.38 per 1,000. The death rate per 1,000 increased to 17.14.

Camden Vital Statistics.—The report of the Division of Vital Statistics of Camden for the year just ended shows that there were 1,652 births, 1,402 deaths and 2,338 marriages. This shows an increase of 469 marriages over those of last year. There was also an increase of more than 300 births and a decrease in the number of deaths of 130.

Personal.—Dr. Emma M. Richardson of Camden was seriously injured in a trolley collision, December 22. —Dr. William F. MacLennan has been chosen city physician of Gloucester City. —Dr. E. L. B. Godfrey, Camden, secretary of the State Board of Medical Examiners, has been operated on for appendicitis in Pasadena, Cal. Dr. and Mrs. Godfrey left Camden about six weeks ago to spend the winter in California.

NEW YORK.

For Incubator Infants.—Senator Brackett has introduced a bill prohibiting the exhibition of infants during incubation.

State Charities.—Governor Higgins, in his annual message, said that there had been steady progress of the state in its management of charities. More patients had been discharged from the state hospitals for the insane as recovered than in any previous year. The net increase of the state hospital population has been the lowest for any one year for the past fifteen. The census shows that in no other state of the union is such generous provision made for the care of the sick poor. Charitable institutions and hospitals for the insane cost the state about \$8,000,000 annually. The Craig Colony for Epileptics is in need of a large new building, and provision should be made for its construction. A commission has been appointed to inquire into the most practical methods of providing modern prison buildings.

Buffalo.

No New Marine Hospital.—Because of the non-approval of the secretary of the treasury the intention to build a United States Marine Hospital at Buffalo at an estimated cost of \$125,000 has been abandoned.

Isolation Hospital for Children.—With the bequest of the late Dr. De Vilvo W. Harrington of one-half of his estate, amounting to \$1,000, the managers of the Buffalo General Hospital intend to build a modern children's hospital for contagious diseases.

Widal Tests.—Beginning January 1 the department of health has added the Widal test of the blood in suspected cases of typhoid fever to its laboratory work. These examinations are free. A specially designated Widal outfit is used and may be obtained at any police precinct station house in the city.

Personal.—Dr. Harry Gaylord and wife have gone on an extended trip to Jamaica. —Dr. Duncan A. Carmichael has assumed charge of the United States Marine Hospital at Buffalo, vice Col. Cyrus T. Peckham, deceased. —Dr. L. Bradley Dorr has been elected president of the East Side Business Men's Association; Dr. Peter W. Van Poyna is also a member of the executive committee.

New York City.

Personal.—Dr. and Mrs. Eugene Fuller arrived on the Minneapolis, January 2.

Low Death Rate.—The death rate for the week ended December 30 was 18.03 per 1,000, as against 19.43 in 1904. Measles showed an increase. Bright's disease increased from 121 in the last week of 1904 to 143 in the last week of 1905.

The Yerkes Will.—This document directs the trustees of the Yerkes galleries to purchase a proper plot of ground in the borough of the Bronx, and cause proper buildings for a hospital to be erected thereon, the aggregate cost of such ground and buildings not to exceed \$800,000. The income arising from another portion of the estate, which will amount eventually to more than \$7,000,000, is to be used for the maintenance of the hospital, which is to be opened to the public without regard to race, creed or color. Eventually the Yerkes Hospital will receive the shares of the estate set aside for the use of the son and daughter.

Officers of the Neurological Society.—The New York Neurological Society has elected the following officers for the year 1906: President, Dr. Joseph Fraenkel; vice-president, Dr. Adolph Meyer; recording secretary, Dr. Edwin G. Zabriskie; treasurer, Dr. Graeme M. Hammond, and corresponding secretary, Dr. Frank M. Hallock.

Absolute Power Over Milk Supply.—In the decision handed down in the Lieberman case in the United States Supreme Court it is stated that absolute power over the milk supply of the city is vested in the commissioner of public health. The handicap under which the department struggles is lack of funds. The board of estimate has allowed no more for this work during the coming year than for last year.

Needs of the City.—In his message Mayor McClellan stated that provision must soon be made by the city toward securing fresh-air homes for children and convalescents, as well as breathing space for the whole people. He especially recommended one of the beaches on the Long Island shore, and that in view of the importance of this matter to the general health of the city, the subject be seriously considered during the coming year.

Good Health of the City.—The records of the year show a marked decrease from the total number of deaths from all causes from the record of last year. There was an exception in the case of tuberculosis, where there is apparently some increase in the number of cases over former years; this increase was probably due to the fact that cases were more frequently reported. In 1905, 103,852 births were reported, as against 99,555 for the year previous. There were 73,450 deaths during the past year, as against 78,060 in 1904. The marriages reported number 42,667, while in the previous year there were only 39,436.

Report of the Charity Organization Society.—This society has just issued its twenty-third annual report from July 1, 1904, to Sept. 30, 1905. A special report of an investigation in regard to the purchase and management of food by 100 tenement-house families is of great interest. The report of the committee on the prevention of tuberculosis shows what the society is doing in this direction. The department of public charities maintained in its own hospitals during the past twelve months 3,959 patients, and paid for the maintenance of, on the average, 788 patients per month in private hospitals which care for the consumptive poor. This committee recommends as a result of its study that physicians and others do not send consumptives to the country to shift for themselves, for the reason that any scheme for the country employment of consumptives should offer facilities for the careful adjustment of work to the physical ability of each patient. This should be under medical supervision and should include instruction in the rudiments of farm work. A farm school in connection with a sanatorium would perhaps be an ideal arrangement.

OHIO.

The Johnstone Estate.—The personal estate of the late Dr. Arthur Weir Johnstone, Cincinnati, is appraised at \$16,354.46.

The Unfortunate.—Dr. George W. Quigley, North Amherst, has been committed to the Massillon State Hospital.—Dr. William J. Manning, Cleveland, was seriously injured in a runaway accident, December 26.

Military Notes.—Harry Hamilton Snively, Columbus, major and surgeon, O. N. G., has been appointed member of the board of medical examiners for the National Guard of Ohio, vice Major Cassius M. Shepard.—Dr. Rufus C. Pennywitt, Dayton, lieutenant and assistant surgeon O. N. G., has been commissioned captain and assistant surgeon.

Academy Election.—At the annual meeting of the Columbus Academy of Medicine, Dr. James U. Barnhill was elected president; Dr. Sylvester J. Goodman, vice-president; Dr. William C. Davis, treasurer; Dr. Charles J. Shepard, secretary; Dr. John A. Frane, censor, and Dr. John H. J. Upham, delegate to the legislation committee of the State Society. The academy presented Dr. David M. Kinsman, its first president, with a gold-headed cane.

Northwestern Ohio Physicians Meet.—At the annual meeting of the Northwestern Ohio Medical Association held in Fremont, December 7 and 8, the following officers were elected: Dr. Albert S. Rudy, Lima, president; Drs. Robert H. Rice, Fremont, and Joseph H. Huntley, Lima, vice-presidents; Edwin A. Murbach, Archbold, secretary, and Dr. William S. Phillips, Belle Center, treasurer. The association will hold its 1906 meeting in Lima.

Personal.—Dr. and Mrs. Orlando T. Maynard, Elyria, start next month for Europe and the Holy Land.—Dr. Wiley D. Hickey has been elected mayor of Leipsic.—Dr. Read L. Bell has been elected president, Dr. James M. Austin, vice-president, and Dr. Emory F. Davis, secretary of the staff of Springfield City Hospital.—Dr. Olen E. Chenoweth has been appointed surgeon of the Detroit, Toledo and Ironton R. R., at Lima.—Dr. James Cutler, Richmond, has gone to California for the winter.

PENNSYLVANIA.

Personal.—Dr. Hamilton Graham, Kennett Square, has been elected president of the local board of health.—Dr. LeRoy K. Leslie, Bareville, has been elected president of the Lancaster City and County Medical Society.

Smallpox in Tamaqua.—The smallpox situation is serious in Tamaqua. An emergency hospital has been established and the board of health has ordered, in addition, that public schools and all places of amusement, churches, etc., be closed, and that all lodges and society meetings be discontinued. Door-to-door vaccination has been ordered.

Approve of Vaccination.—The physicians of Lock Haven, with one exception, deny the report that they were opposed to vaccination and, therefore, have sent the following letter to the *Philadelphia Press* over their signatures: "We, the undersigned physicians of Lock Haven, deny that any physicians in this city are opposed to vaccination or the law governing the same. R. B. Watson, E. P. Ball, George D. Green, W. J. Shoemaker, George W. Maust, J. S. McGinniss, R. Armstrong, William Armstrong, Joseph Hayes." The compulsory vaccination law is being enforced by the authorities in Lock Haven, and 676, or more than one-half of the total number of pupils registered, have been refused admittance.

Defy Vaccination Act.—The local authorities of Waynesboro openly defied Dr. Dixon by resisting his vaccination order, and reopening the public schools January 2, admitting hundreds of unvaccinated children. The schools were closed for the holidays, but during that time nothing was done toward meeting the requirements of the compulsory vaccination law. Of the 1,200 pupils enrolled it is stated that 900 are not vaccinated, and a large proportion of the parents refused to submit to vaccination. Dr. Dixon conferred with the governor, attorney-general and superintendent of public instruction, and it was decided to commence mandamus proceedings against the board to compel the members to obey the law. Attorney-General Carson said: "We are going to enforce the law. We are not going to countenance such defiance, and if the mandamus does not work, then we will proceed under the penal clause of the law."

Philadelphia.

Personal.—Dr. Andrew J. Muller was appointed an assistant medical inspector by Director Coplin in the place of Dr. Henry C. Sidebotham, resigned.

Bequests.—By the will of the late Hugh Leonard, St. John's Orphan Asylum receives \$1,000.—A bequest of \$5,000 to the Pennsylvania Hospital for the endowment of a free bed for a woman patient was contained in the will of the late Anne E. Peale.—A bequest of \$7,000 for the Friends' Asylum for the Insane was contained in the same will, and also \$1,000 to the Pennsylvania School for Feeble-minded Children, and \$300 for the Methodist Church Home for Children.

Health Report.—The total number of deaths reported for the week ended January 6 aggregated 536, which compares unfavorably with 491 reported last week, and with 478 reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 19; measles, 10; diphtheria, 19; consumption, 46; cancer, 30; meningitis, 5; apoplexy, 18; heart disease, 44; acute respiratory disease, 88; enteritis, 27; appendicitis, 6; Bright's disease, 34; suicide, 4; accidents, 18, and marasmus, 7. There were 341 cases of contagious disease reported, with 46 deaths, as compared with 262 cases, with 23 deaths, reported in the previous week. There were 353 cases of measles reported and 197 new cases of typhoid fever.

New Officers.—At the annual meeting of the College of Physicians, January 3, the following officers were elected: President, Dr. Arthur V. Meigs; vice-president, Dr. James Tyson; censors, Drs. Richard A. Cleemann, S. Weir Mitchell, Horace Y. Evans, and Louis Starr; secretary, Dr. Thomas R. Neilson; treasurer, Dr. Richard H. Harte; honorary librarian, Dr. Frederick P. Henry; councilors, Drs. J. Allison Scott and Francis R. Packard.—Dr. Wendell Reber was elected chairman, and Dr. William H. Park, clerk, of the North Branch of the Phila-

delphia County Medical Society at the December meeting.—Dr. Royal W. Benis was elected chairman, and Dr. Cyrus C. Moore, clerk, of the Kensington Branch of the same society, at the December meeting.

Vital Statistics Registrars.—The state commissioner of health, Dr. Samuel G. Dixon, has appointed 950 local registrars for the collection of vital statistics for the State Department of Health. The appointments were made December 24, and the men will be directed to begin work on January 1, when the new state law goes into effect. The registrars will receive 25 cents for each birth and death they report. They will also receive 25 cents for each monthly report of any deaths or births for any month. They are entitled to a fee of 50 cents for each disinterment permit issued by them, the fee to be paid by the person receiving the permit. Under the law creating the bureau of vital statistics, the local registrars who fail to perform their duty may be removed by the state health commissioner, and be further deemed guilty of a misdemeanor and on conviction be punished by a fine of not less than \$10 nor more than \$100.

Lectures on Tuberculosis.—The lectures on tuberculosis at the tuberculosis exposition, to be held from January 22 to February 3, will be delivered by the following: January 23, Dr. Lawrence F. Flick, "The Sociological Importance of Tuberculosis"; January 24, Dr. Leonard Pearson, "State Control of Tuberculosis"; January 25, Dr. Charles Dudley, Altoona, "The Railroad in Tuberculosis"; January 26, Dr. William B. Stanton, "Tuberculosis in the School"; January 27, Dr. Howard S. Anders, "Tuberculosis in the Store"; January 29, Dr. Henry R. M. Landis, "Tuberculosis in the Workman"; January 30, Dr. Samuel McC. Hamill, "Tuberculosis in Children"; January 31, Dr. Thomas Darlington, New York City, and Dr. W. M. Late Coplin, "Municipal Control"; February 1, Dr. Charles J. Hatfield, "Address to Medical Students and Nurses"; February 2, Drs. James C. Wilson and John H. Musser, "Address to Physicians," and February 3, Dr. M. P. Ravenel, "Hospitals, Sanatoria and Dispensaries." Demonstrations on pathology will be given from 2 to 6 daily.

VIRGINIA.

Burnt Out.—A recent fire gutted the office of Dr. Barksdale Hales, Fredericksburg, causing a loss of \$1,500.

Medical Colleges Not to be Consolidated.—All hope of consolidating the Medical College of Virginia with the Medical Department of the University of Virginia has been given up. At a joint meeting of the committee just held it was found impracticable at this time for the amalgamation to be consummated. While the supreme end of union has not been reached, the long-existing friendship of the two institutions has been strengthened.

South Side Meeting. The South Side Medical Association held its tenth annual session in Petersburg. The following officers were elected: President, Dr. E. F. Reese, Courtland; vice-presidents, Drs. Joel Crawford, Yale, B. Barrow, Barrow's Store, and J. W. Baird, Corsley; Dr. J. H. Hargrave, Garysville, secretary, and Dr. R. L. McNair, Emporia, treasurer. Emporia was selected as the next place of meeting in March, 1906.

Richmond Academy of Medicine and Surgery.—The election of officers for this society resulted as follows: Dr. Ramon D. Garcin, president; Drs. J. Palmer Bright, Ernest C. Fisher and M. P. Tucker, vice-presidents; Dr. Mark W. Peyer, secretary, and Dr. A. L. Sheppard, treasurer. The installation of officers will take place in January, when the annual banquet will be held and steps will be taken looking to the purchase of a home for the academy.

GENERAL.

Harvey Society Lecture.—The fifth lecture in the Harvey Society course will be given by Prof. W. H. Park at the New York Academy of Medicine on January 20, at 8:30 p. m. The subject will be, "A Critical Study of Serum Therapy."

New Hospital in Manila.—St. Paul's Hospital in Manila, since its renovation, is one of the best equipped in the far East. The hospital can now accommodate 150 patients. There are native wards and wards for Europeans. There are also three wards for Americans. There is a well equipped operating room fitted with all modern appliances. Dr. John R. McGill is surgeon in chief; Dr. W. E. Musgrave, physician in chief, and Dr. Paul G. Woodley, pathologist.

The Medal of Honor Given Dr. Church. The President, January 10, in the presence of the secretary of war, the chief of

staff, and the surgeon general of the Army, presented a medal of honor to Capt. James Robb Church, assistant surgeon, U. S. Army, for gallantry in action at the battle of Las Guasimas, Cuba, on June 24, 1898. The award of this medal was announced in THE JOURNAL, Dec. 30, 1905, and a brief sketch of Dr. Church given. The delay in giving this medal is understood to be due to a failure on the part of his superior officers in recommending Dr. Church for this honor, to conform exactly to certain technical requirements of the regulations governing its award. Gen. Leonard Wood, who commanded the Rough Rider regiment in that fight, was, however, unwilling to let technicalities stand between conspicuous merit and its reward, and succeeded in interesting the authorities at the War Department in the matter, with the result above stated. Dr. Church has, however, lost nothing by the delay, as he becomes thereby the first beneficiary of the executive order issued last September requiring that the presentation of medals of honor thereafter shall be with formal and impressive ceremonial, if practicable, by the President in person. Dr. Church is at present stationed at Fort Robinson, Neb.

Health Report of the Philippines for August.—In the official report for August, 1905, the reappearance of cholera in and around Manila is discussed at some length. From time to time during the year, it is stated, cases which clinically resembled Asiatic cholera came to the attention of the Board of Health, but the diagnosis could not be verified bacteriologically. For the two weeks preceding August 23 the number of suspicious cases was increased. One occurred at San Pedro Macati, one in a bakery in Paco, one in the San Miguel district, one case was that of a soldier in Cuartel de España, and it is now known that a number occurred in Rizal province. It was not until August 23, however, that a case developed in Bilidid prison, which was later found by laboratory examination to be cholera. On the following day six cases of suspected cholera were registered at Fort McKinley. An extra session of the board of health was held, after which Dr. Freer, Dr. Strong and Dr. Heiser, on the invitation of the medical officer in charge, proceeded to the fort to make an investigation of the nature of the disease which had made its appearance in so unexpected a manner. After examining the cases, it was impossible to state positively that they were cholera, although the consensus of opinion was that they were very suspicious. No material could be obtained for a microscopic examination. Several days later, however, the diagnosis was bacteriologically confirmed. On August 25 an American woman residing at the Grand Hotel, Walled City, was attacked, and also a man, who had arrived in the city the night before from Bataan province and had taken lodging at the house of his brother, Calzada de San Sebastian. It was learned later that this man was not absent from the city, on his Bataan trip, more than forty-eight hours. Both patients were removed to the cholera hospital at San Lazaro. A telegram received on August 26, from Jalajala, through the army medical department, contained the following information: "Cases of a disease resembling cholera have developed in Jalajala, the first case being registered August 21; from that date to August 25, 16 cases and 12 deaths have been registered, the illness lasting from twelve to twenty-four hours." On that same date the provincial president of the board of health of Rizal reported, by wire from Pasig, one suspicious case, followed by death, in that town. On the following day the death, from cholera, of a nun in the monastery of Santa Clara, Manila, was reported to the health office. At that convent the most rigid regulations are observed, and communication with the outside world is reduced to a minimum. As this was rather an unusual case, a full and accurate statement of the facts concerning it was secured, and, among other things, it was ascertained that it was the nun who was in charge of the infirmary who had taken the disease. The infirmary is located far inside the building, where there would be very little probability of its coming in contact with anything from the outside. The day of her death the nun felt indisposed and took a laxative from the dispensary of the convent, apparently recovering. After the noon meal she ate some lanzones, supposed to have been taken from a tree in the orchard of the convent, and a few hours later, early in the afternoon, she was taken ill with the disease, dying between 8 and 9 of that evening, with all the symptoms of cholera. No other case occurred in the convent. In the meanwhile other cases were being registered from nearly all the districts of the city, although the number of cases was not very great, as may be seen by the report. From August 23 to 31 only 51 cases and 46 deaths were recorded. In this review of the outbreak it is stated that no effort has been made to draw any definite conclusions, the only aim having been to state certain facts which may be use-

ful later in making further researches into the origin of the disease. The report gives in detail the means adopted to prevent the spread of the disease. During August there were 903 deaths, of which the greatest number were caused by pulmonary tuberculosis, dysentery and cholera. Six hundred and fifteen births were registered during the month (a birth rate of 32.93 per thousand); of these 322 were males and 293 females.

CANADA.

Smallpox in Ontario.—There are over 20 cases of smallpox in the village of Dundalk, Ontario.

Prevalent Diseases.—An epidemic of typhoid is reported from Phoenix, B. C.—Eighty-four cases of smallpox are reported in the county of Dufferin, Ontario, but no deaths.

Ontario Medical Council.—The present building of the Ontario Medical Council has been sold for \$100,000, and a new one will be erected at once for the council purposes alone.

Death Rate of Vancouver.—The death rate of the city of Vancouver, B. C., for November, '51, the total number of deaths being 24 in an estimated population of 42,000.

Typhoid in British Columbia.—The provincial health department of British Columbia is taking active steps to suppress the typhoid fever epidemic in certain interior districts of that province.

Vital Statistics of Toronto.—There were 533 more births in Toronto in 1905 than in 1904. The marriages increased 277 and the deaths 33. The total number of births were 6,816; marriages, 3,060; deaths, 3,915.

Tuberculosis Camp.—The Montreal League for the Prevention of Tuberculosis has asked the city council for a grant of land and for financial aid for the purpose of installing near that city a temporary camp for consumptives.

Paying Patients in Insane Hospitals.—The Ontario government has adopted a vigorous policy with regard to the revenue from paying patients in the provincial hospitals for the insane. For years there have been many delinquents, but as the result of the inauguration of this policy the revenue from this source increased in the last four months by nearly \$30,000.

Personal.—Dr. Mary McKenzie, Pictou, N. S., who was graduated from the Halifax Medical College last spring, has gone to India under appointment from the Woman's Union Missionary Society of America. Her hospital work will be in Cawnpore.

—Dr. R. C. Hiscock, Kingston, Ont., has been appointed government health inspector with headquarters at Lagos, West Africa.—Dr. McLennan, a native of Cape Breton, Canada, is court physician to the king of Tonga Island in the Pacific Ocean.—Sir James Grant, M.D., Ottawa, has issued in book form the lectures he delivered on tuberculosis in Scotland during last summer.—Dr. R. H. Richards of Winnipeg has sailed from Vancouver for a three months' trip to Honolulu and Australia.—Dr. Eliezer Pelletier, secretary of the provincial board of health of Quebec, has returned to Montreal after attending the recent congress on tuberculosis in Paris.

Hospital News.—The Toronto General Hospital fund now amounts to \$1,000,000.—The total number of patients treated in the Winnipeg General Hospital during the week ending December 16 was 395; of these, 253 were men, 82 women and 60 children.—The grand jury of the County of York, Ontario, has advised that a new provincial hospital for the insane is needed for the city of Toronto, and recommends that a site of 300 acres be purchased adjacent to the city.—The dominion government is calling for tenders for the construction of a hospital at Lawlor's Island, N. S.—The ratepayers of Winnipeg have voted favorably on a by-law to grant \$150,000 for hospital purposes.—The Medical Faculty of the University of Toronto has contributed \$50,000 to the Toronto General Hospital.—The Hamilton (Ontario) board of health is advising new isolation and smallpox hospitals for that city.—A fine new general hospital has just been completed at Vancouver, B. C. Fire destroyed one of the cottages for female patients at the Mimico Provincial Hospital for the Insane, near Toronto. The loss was \$15,000. All the patients were safely removed.

—On November 30 there were 302 patients in the Toronto General Hospital. During December 279 were admitted, and 310 discharged, leaving 271 patients in the hospital on Jan. 1, 1906.—During the week ending December 30, 349 patients were treated in the Winnipeg General Hospital.

Ontario Vital Statistics.—The total number of deaths occurring in Ontario during November was 2,011, or 108 more than

were reported in November, 1904. The death rate for the month is 12.3 per 1,000 of the population, as compared with 12 of last year. Throughout the province smallpox still continues on the increase, although it is of a mild character. During the month there were 182 cases, with no deaths, whereas in November, 1904, there were only 2 cases, with no deaths. There were 104 cases of scarlet fever; 249 cases of diphtheria, with 28 deaths; 203 cases of typhoid fever, with 55 deaths, and 128 cases of tuberculosis, with 128 deaths. November, 1905, had the largest number of cases of smallpox since January, 1903, when there were 196 cases and 10 deaths.

National Sanitarium Association's Annual Meeting.—The eighth annual meeting of the National Sanitarium Association was held in Toronto, December 16. Dr. J. H. Elliott, physician in charge of the Muskoka Cottage Sanitarium, made his annual report and stated that during the course of the last official year there were 233 patients under treatment. These had come from all parts of the Dominion of Canada and some from the United States. He advised that the sanitarium be increased in size to accommodate an additional 100 patients. Speaking of those who had been discharged from seven to eight years ago, Dr. Elliott stated that all those apparently cured who could be traced were perfectly well, and in the arrested cases 70 per cent. remain well. Dr. C. D. Parfitt, physician in charge of the Muskoka Free Hospital for Consumptives, presented the report of that institution, which showed that 153 patients had been admitted during the year, while the number of patients treated during the year had been 218. Thirty-seven of these were charity patients from Toronto. The accommodation at this hospital has recently been increased to 75.

FOREIGN.

Governmental Control of Leprosy in Japan.—It is reported that at the approaching session of the imperial diet legislation will be proposed with a view to governmental control of leprosy in Japan.

Physicians in Parliament.—Twenty-two physicians are among the candidates for the next elections to parliament, according to our British exchanges. In Italy, Grocco of Florence has recently been appointed senator. There are now 8 medical men in the Italian legislature, 5 senators, Grocco, De Renzi, Cardarelli, Maragliano and De Giovanni, and 3 deputies, Baccelli, Rummo and Queirolo. Rummo is editor of the *Riforma Medica* and Maragliano of the *Clinica Medica*. All are professors in some medical faculty.

Anthrax in China.—Acting Assistant Surgeon Ransom, at Shanghai, reports that a case of "internal anthrax" occurred at Hankau, Nov. 25, 1905, in an office employé of one of the hide companies. This is the only case of the kind which has recently occurred within the knowledge of the officials at that place. The matter is interesting in that a large percentage of the hides shipped to the United States from China come from the vicinity of Hankau; none, however, are allowed to pass Shanghai unless accompanied by a consular certificate of arsenical curing.

Plague in Japan.—Dr. Moore of the Public Health and Marine-Hospital Service reports that the plague situation in Kobe and Osaka shows no evidence of marked amelioration and that the present outbreak bids fair to prove one of the most formidable manifestations of this infection that has yet visited Japan, excluding Formosa. The American consul at Kobe, he states, has formally declared Kobe and Osaka to be infected ports. There is reason to believe that several of the larger steamship companies plying between Kobe and the United States will decline for the present to sell steerage tickets from that port to the United States under existing circumstances.

Silver Jubilee of Tidsskrift f. d. Norske Laegeforening.—This journal is the official organ of the Norwegian Medical Association. It is published at Christiania and has just completed its twenty-fifth year. To signalize the occasion it gives the portraits of each of its editors and general secretaries during its career, with breezy articles from the pens of each on the *Tidsskrift* in their day, or historical sketches of those who have died. The present editor and the general secretary are Drs. P. Aaser and R. Hianson. The number also contains an article on "Difficulty in Removing the Tube after Intubation," with radiograms of cases, and, as usual, a number of articles on local medical questions, insurance against sickness, sanatoriums, antiquary movement, etc.

Congress Katzenjammer.—Under this suggestive heading Altschul describes in the *Prag. med. Wocht.*, for December 7, his impressions "the day after" the Tuberculosis Congress at Paris. He remarks that it was the most poorly organized

congress that he had ever attended, and he suggests a number of reforms which he thinks are necessary if international congresses are to be of any value to science. Instead of wasting money on entertainments and banquets, etc., the appropriations for this purpose should be devoted to making up the deficit from the smaller membership when only truly interested scientific men are attracted to the congress. As it is now, every effort is made to increase the attendance to cover the expenses. Aitschul suggests further that a publisher could surely be found to publish the transactions and supply a copy free to each member if given permission to place the remaining volumes on the market. The main purpose of an international congress is the interchange of opinions, and this can not occur when sections are multiplied and too many subjects and communications allowed. Too much time is wasted in international congresses on discussions of purely local questions. It is refreshing to turn from this arraignment to Sonnenburg's enthusiastic commendation of the recent International Surgical Congress (*Berliner klin. Wochtsk. No. 44 a.*). Every detail of this congress might serve as a model to all others, he exclaims. It was described in these columns on page 1180 of the last volume. Instead of being merely an opportunity for young fellows to disport themselves in public, it was devoted to a fruitful interchange of opinions between mature, experienced minds, on a limited number of vital themes.

International Antiquackery Campaign.—The first officially organized society for the repression of quack practices was the "Vereeniging tegen de Kwakzalverij," which was founded in Holland twenty-five years ago. The occasion for its founding is said to have been the extensive advertising throughout the country of Ayer's sarsaparilla, pain expeller, etc. The society recently celebrated its twenty-fifth anniversary. Treub of Amsterdam delivered an address on "Quack Practices," and J. M. van Elk of Zutphen, Holland, one on the "International Antiquackery Campaign." The latter referred to Henry Graack's recent compilation of the laws and regulations affecting the practice of medicine and quack practices in Germany and elsewhere. He expressed the hope that this important work may be the source of fruitful study for legislators and others in Europe and throughout the world. He remarked that although the laws of Holland still leave much to be desired, they have certain model features. Unfortunately, they are not enforced, and any one can assume the title of "Dr." at will. He referred to the omnivore of the lay press in the advertising of quacks and nostrums, and declared that the various governments are not yet convinced in regard to the tremendous evils of quack practices and nostrums. It should be the task of the various antiquackery organizations to enlighten legislators in this respect. When the governments are once convinced, then an international antiquackery conference should be organized. The board of health of Karlsruhe and its brave mayor have been working for years along this line. They publish the analysis of various secret remedies advertised, showing the way in which the public is being swindled out of its money. (Their work has been previously described in THE JOURNAL.) Sweden has also a well-organized antiquackery society under the leadership of Dr. T. Thunberg and Prof. C. T. Mörner. Efforts are being made also in other countries, but unfortunately, so far the organizations stand alone, and lack the benefits and strength of international support. International organization and co-operation are imperatively needed. Associations should be formed with local branches everywhere, all co-operating in collecting data and holding conferences occasionally for discussion of ways and means. The first thing to be done, he continued, is to make the press responsible for quack advertisements. If the papers were held responsible for injury resulting from such advertisements, these would soon disappear from their columns; but this, van Elk believes, must be done internationally. It would do little good if the newspapers of Holland, for instance, were to refuse to take these advertisements, as the quacks would simply transfer their advertisements elsewhere. Another important point, he added, is to have severe penalties imposed on persons distributing fake medical pamphlets and circulars. The police should be empowered to suppress their distribution, but this will not prove effective unless the measure is international. The practice of medicine should be restricted to qualified persons, and the present freedom allowed to any one to practice "nature healing," etc., should be withdrawn. It should also be strictly forbidden to manufacture, to sell or to hold in stock any remedy for which the true and exact formula is not printed on the wrapper in popular language. Then only will the public know what it is buying. The giving of a false or incomplete formula should entail a severe penalty. Here, too, action should be interna-

tional, so that, for instance, the German court should impose a penalty in Germany on the manufacturer of a remedy made in Germany to be sold in another country, and *vice versa*. The German Antiquackery Society sent Rumpe of Krefeld and C. Reissig, the editor of its official organ, *Hygienische Blätter*, as representatives to the jubilee meeting, and van Elk greeted them as announcing the dawn of an international era in the campaign against the many-headed hydra of charlatanism. Before the meeting adjourned the nucleus for an international antiquackery committee was organized. The members appointed are Lind, van Gelder, Treub and van Elk, of Holland; Rumpe of Krefeld, and C. Reissig, Hamburg 5, of Germany. The *Hygienische Blätter* is published by E. Grosser, Berlin, Wilhelmstrasse 121. Subscription 1.5 marks a year, or about 50 cents, including postage. Most of the above report of the Holland meeting is translated from its December issue.

Prizes Offered by the Paris Académie de Médecine.—The French are particularly fond of the endowed prize, and the Paris Académie de Médecine has fifty at its disposal, which are open to the competition of the world. Most of them are annual, but others are biennial and even quinquennial. The prizes are awarded early in December of each year, the lists being closed by February of the current year. Competing works must be in French or in Latin. All the prizes this year were given to physicians residing in France or its colonies, with the exception of the Godard prize of \$200, given to Dr. Faxton E. Gardner of New York City for a work entitled "Plastic Operations and Anastomoses in Treatment of Renal Retention," and \$120 to Dr. S. R. Hermanides of Zeist, Netherlands, for a work on the parasymphilitic affections. Franceschini of Vienza, Italy, and Pawinski of Warsaw also received honorable mention. Cristini of Geneva received part of a prize for his work on thyroid grafting, and also Remlinger, director of the Pasteur Institute at Constantinople, for his works on rabies. THE JOURNAL for Jan. 14, 1905, page 138, commented on the fact that so few physicians from America compete for these prizes. Full details of competition were given in THE JOURNAL for Jan. 24, 1903.

The prizes for which competing articles must be sent in with the writer's name in a sealed envelope are the Académie prize of \$200 (in 1906), for the best work on the pathogenesis of pulmonary edema; (1907), on the physiology and pathology of the suprarenal capsules, and (1908), on the etiologic and clinical relations between infectious diseases and neoplasms; the Daudet annual prize of \$160 for the best work on any branch of medicine; the Capuron annual prize of \$200, (1906), on the gases in certain designated mineral waters, (1907), on relations between menstruation and ovulation, and (1908) on the detachment of the placenta during the last two months of pregnancy and during childbirth; the Civrieux annual prize of \$160 (1906), for the best work on acute encephalitis (1907), on spinal syphilis, and (1908), on homicide in mental pathology; the Daudet annual prize of \$200 (1906), for the best work on x-ray treatment of cancer; (1907), on evolution and prognosis of epitheliomatous tumors of the ovary, and (1908), on melanotic sarcomata; the Falret biennial prize of \$140 (1907), for the best work on the mental condition in dipsomania; the quinquennial Herpin prize of \$240, (1906), for the best work on the abortive treatment, either at début or during incubation, of affections caused by trypanosomas; the Lefèvre triennial prize of \$360 (1908), for best work on melancholia; the Louis triennial prize of \$800, (1907), for best work on radiography of neoplasms; the Mège triennial prize of \$180, (1907), on etiology and pathogenesis of phlebitis; the Orfila biennial prize of \$400 (1906), for best work on purification of water used in cities and of the residues of sewage; the Paturel annual prize of \$200 and the Paturel (1906), for best work on thyroid neoplasias, pathologic anatomy and pathogenesis (1907), on leukemias, and (1908) on the blood and blood-forming organs in pernicious anemia, and, finally, the Paturel annual prize of \$400 (1906), for the best work on the entry into play in diseases; (1907) on experimental study of sensory, motor and vascular innervation of the larynx, and (1908), on the modifications of pressure which occur in the cavities of the heart during the ventricular pause and the causes which determine these modifications.

Articles competing for all the above must be sent in anonymously. In addition to these there is a long list of prizes to be awarded for either manuscript or printed works.

They include the Amussat prize, \$260 (1908), for surgical therapeutics; the Brouardel annual prize, \$250, on electrotherapy; the Baillarger biennial prize, \$400 (1906 and 1908), for study of treatment of mental affections and organization of insane asylums; the Barbier annual prize of \$400 for a complete cure of some disease hitherto deemed incurable. This prize can be apportioned to encourage workers in this line; the Boerhaave triennial prize of \$860 (1907), to encourage and reward studies to find a cure for tuberculosis; the Boullard biennial prize of \$240 (1906 and 1908), for the best work for the best results in cancer, in attending or curing mental affections; the Bourcree annual prize of \$200 for best work on circulation of blood; the Buisson triennial prize of \$2,100 (1907), for best discoveries having for result the cure of some affection hitherto deemed incurable; the Dupuytren biennial prize of \$400 (1906 and 1908), for best work on anesthesia or on affections of the urinary passages; the Chevillon annual prize of \$300 for best work on treatment of cancerous affections; the Clarendon annual prize of \$80, on hygiene; the Desportes annual prize of \$200, on practical medical therapeutics; the Desportes annual prize of \$200, on medical therapeutics; the Godard annual prize, \$200, for best work on internal pathology (1906), external path-

ology (1907), internal pathology (1908). The P. Guzman prize is an income of about \$266 at 3 per cent., which will be given for the discovery of a truly effectual treatment of some common form of organic heart disease; the T. Herpin prize of \$600, annual, for the best work on epilepsy and nervous diseases; the Ilugo prize of \$200 is given every five years, in 1906 for best work on some point in the history of the medical sciences; the Itard triennial prize of \$450, for best book on practical medicine or applied therapeutics; the Jacquemier triennial prize \$330 (1907), for work on some obstetrical subject which shall have realized an important progress; the Laborie annual prize of \$1,000 for the author of a notable advance in the science of surgery; the Storry annual prize of \$100 for best work of medical statistics; the J. Lefort prize of \$60 (1908), for best study of mineral waters; the H. Lorquet annual prize of \$60 for best work on mental affections; the Nevoit annual prize of \$200 for best work on affections of eyes (1907), and of ears (1906-1908); the A. Morin five-year prize of \$400 (1908), for the best work by physician under 30 on cure of diphtheria; the Natviele annual prize of \$60 for extraction of acetic principle, not yet isolated, of some drug; the Heblolet prize triennial, \$340, bernia (1908); the P. Ricord biennial prize, \$120 (1907), for best work that has appeared during the two years on venereal diseases; the Saintour biennial prize of \$850, for best work on any branch of medicine; the Stanski prize of \$250, biennial (1906 and 1908), for demonstration of existence or non-existence of miasmatic contagion by infection or by distance contagion, studied in epidemics in general or in some special epidemic; the St. Lazare prize of \$140 for every fifth year (1908), for the best article on affections of the urinary passages, catarrh of the bladder or some affection of the prostate, and the Vernols annual prize of \$140 for best work on hygiene.

In addition to these prizes there is the great Audiffren endowment, representing an income of 24,000 francs, or \$4,800, to be given to the person who, before April, 1921, discovers a sovereign preventive or curative remedy for tuberculosis. The *Bulletin de l'Académie de Médecine*, No. 41, 1905, gives the full particulars of all these prizes. Copies can be obtained from the publishers, Masson et Cie, 120 boulevard Saint-Germain, Paris. It is a pity that more Americans do not compete for these prizes. No article can be entered into the competition for more than one prize in the same year. The trouble of having their article translated into French has undoubtedly deterred many Americans from competing, but this could easily be arranged at comparatively small expense. Address all communications for the Académie to the secrétaire perpétuel, Académie de Médecine, 16 rue Bonaparte, Paris. In this connection we might call attention again to the official information bureau at Paris, the "Bureau des Renseignements Scientifiques" at la Sorbonne. It is in charge of Dr. Blondel.

LONDON LETTER.

The London School of Clinical Medicine.

In recent years something has been done to remove from London the reproach of being alone among the capitals of the world in making absolutely no provision for postgraduate teaching. It is now proposed to use the Dreadnought or Seamen's Hospital at Greenwich as a postgraduate school, to be termed the London School of Clinical Medicine. The scheme has received considerable support from some of the most influential members of the profession in the metropolis. The following staff has been constituted: Physicians, Sir Dyce Duckworth, Dr. Frederick Taylor, Dr. Rose Bradford, Dr. R. T. Hewlett and Dr. Guthrie Rankin; surgeons, Sir William Bennett, Mr. Mayo Robson, Mr. A. Carless, Mr. William Turner and Mr. McGavin; ophthalmic surgeon, Mr. V. Gargill; dermatologist, Mr. Malcolm Morris; laryngologist, rhinologist and otologist, Dr. St. Clair Thomson; electrotherapist, Mr. Maekenzie Davidson; stomatologist and dentist, Mr. Kenneth Goadby. These men will each receive a certain number of beds and take an active part in teaching. In this way the large and varied clinical material of the hospital will be made available for instruction. A special feature of the school will be exceptional opportunities for acquiring skill in operative surgery afforded by the relatively large number of unclaimed bodies which can be utilized for the purpose. Negotiations are in progress with various special hospitals, with a view of making the teaching of the London School of Clinical Medicine complete in every detail. It is intended to equip it with labora-

The Decline of the Birth Rate.

At the Royal Statistical Society two important papers were read on the decline of the birth rate. The first was by Drs. A. Newsholme and T. H. C. Stevenson. In the course of the paper the term "corrected birth rate" was introduced and was defined as a rate-making allowance for the fact that some populations include a much larger proportion than others of wives at a certain age, and taking into account both the ages and numbers of wives. This corrected rate gives different figures to the "crude birth rate." For instance, the crude birth rate of Ireland in 1903 was 23.1, which is only a little higher than that of France in 1902 (21.7); but correction practically

unaffected the French birth rate, whereas the Irish was increased to no less than 36.1, showing that the Irish fertility was nearly twice that of the French. This remarkable result is due to the fact that although both countries had approximately the same proportion of women, aged from 15 to 45, in their populations, 52.5 per cent. of these in France are married, as against 32.5 per cent. in Ireland. The greatest decline of fertility among the countries studied during 1881 to 1903 was shown by the following: England and Wales, 17 per cent. decline; New Zealand, 18 per cent.; Belgium and Saxony, each 24 per cent.; Victoria, 25 per cent.; and New South Wales, 33 per cent. Ireland alone showed an increase of fertility, 3 per cent. The authors arrived at the conclusion that the decline is associated with a general raising of the standard of comfort, and is an expression of the determination of the people to secure this greater comfort. This gospel of comfort is becoming the practical ethical standard of a rapidly increasing number of civilized communities. They have no hope that any nation—in the absence of strong and overwhelming moral influences to the contrary—would be permanently left behind in this race to decimate the "race," and they anticipate as a result a deterioration of the moral, if not also of the physical nature of mankind. The second paper was read by Mr. G. U. Yule. He stated that a comparison of the fertilities of married women in different districts of London in 1871 and 1901 showed that, while in the upper class districts the fertility had dropped by about 20 per cent., in the lowest class districts it was practically unchanged. It must, however, have fallen among the working classes in general, for the fall in the upper class districts is little more than for the country at large. A careful examination of fluctuations in the birth rate shows that it appears to respond, like the marriage rate, to the cycle of trade and industry.

The Use of Boric Acid as a Food Preservative.

The difficulty experienced in the courts in deciding as to the legality of the use of boric acid as a preservative in milk (reported in a previous letter) is also arising in regard to other articles of diet. The use of food preservatives is becoming more and more widespread. A firm of provision merchants was summoned for selling sausages containing 41 grains of boric acid to the pound. In the course of three hours' hearing a large number of experts were called on each side—those for the prosecution arguing that boric acid is a "foreign ingredient," prejudicial to the purchaser; and those for the defense contending that this is not so, as the acid is used as a preservative and is harmless. A. Stokes, an analyst, who was called by the prosecution, admitted that perhaps a tenth of all the samples he analyzed contained boric acid. Tinned fish and paste contain it and it is used for washing the fish on the fishmongers' stalls. Three-fourths of the butter imported into this country contain boric acid, though not to the extent of 41 grains a pound. No steps have been taken to prevent this. Mr. J. Douglas, another analyst, stated for the defense that boric acid is a usual ingredient of preservatives. "Borax" is made for sausages from boric acid. Without a preservative, sausages made with meat and bread only would not keep two days, even though the meat was the best and fresh. Dr. F. W. Tunnicliffe, a member of the departmental committee of the Royal Commission of Agriculture, said that there are many preservatives, the strongest of which is formalin. 1 part in 20,000 of which is effective. If formalin were used for meat in proportions similar to boric acid, the meat could not be digested. Mr. Cluer, the magistrate, remarked, that butchers washed meat with formalin and then it would keep two months. Dr. Tunnicliffe remarked that one sometimes got a sole which was tough and had been treated with formalin. This was known as a "formalin sole." "A reasonable man," said the magistrate, "ought not to eat more than 2 sausages. That would include 12 grains of boric acid. The evidence for the prosecution was that 41 grains would be injurious, but possibly if a man ate a pound of sausages he would suffer more from them than from the boric acid. Dr. F. J. Smith, physician to the London Hospital, said that he had prescribed 10 grains of boric acid three daily for an adult without harm. Drs. J. P. Bate and H. R. Kenwood, both health officers, and the latter lecturer on public health at University College, expressed the strongest opinions that boric acid is injurious to health. Dr. Kenwood pointed out that, although the amount of boric acid in the sausages might not be shown to be injurious, if a man were taking also boric acid in his milk, meat, fish and preserves, the possibility of poisoning is obvious. He could not understand why boric acid is forbidden in milk and not forbidden in butter.

Pharmacology

PHENALGIN—A TYPICAL EXAMPLE.

Last June¹ we devoted considerable space to the extravagant therapeutic claims made for "Phenalgine" by its vendors. At this time we propose to refer to the misinformation—to use a conservative term—that the Etna Chemical Company has promulgated regarding the composition of their preparation.

Last June the Council on Pharmacy and Chemistry officially published to the medical profession of the United States the information that repeated examinations showed that "Phenalgine" is a simple mixture of acetanilid and sodium bicarb. or ammonium carb. So far as we know, no direct denial of the truth of this has been made. There has appeared what we presume is meant as an answer; it is couched in this sentence:

"PHENALGIN IS JUST WHAT WE HAVE ALWAYS SAID IT TO BE."

From this expression—which has been repeated in bold, black letters in practically all the advertisements since last June—we presume that we are to understand that in the past they have stated what it is.

It would have been just as easy and more satisfactory if the Phenalgine people, instead of saying: "Phenalgine is just what we have always said it to be," had said what it is, since the average physician has neither the time nor the inclination to look up their literature.

For the benefit of those who desire to know what the vendors of Phenalgine "have said it to be," we have gone over their advertising literature of the past, with the following results, which are in the form of quotations from their advertisements:

"AN AMERICAN COAL-TAR PRODUCT—PHENALGIN—THE ONLY SYNTHETIC STIMULANT, NON-TOXIC, ANTI-SPASMODIC, ANALGESIC AND HYPNOTIC."

"PHENALGIN IS THE ONLY AMMONIATED SYNTHETIC COAL-TAR PRODUCT MADE FROM CHEMICALLY PURE MATERIALS." [What have the Ammonol people to say to this?]

"A SYNTHETIC COAL-TAR PRODUCT OF THE AMIDOBENZINE SERIES, CONTAINING NASCENT AMMONIA."

"THESE TWO CHEMICALS [stimulant ammonia of coal-tar origin² and 'chemically pure phenylacetamide'] COMBINE UNDER CERTAIN CONDITIONS SO AS TO OBTAIN A PRODUCT WHICH HE [Dr. Cyrus Edson] NAMED PHENALGIN OR AMMONIATED PHENYLACETAMIDE."

"PHENALGIN IS A COMPOUND OF PECULIAR CHARACTER WHICH CAN NOT BE EXTemporANEOUSLY MADE INTO TABLETS FROM THE POWDERED DRUG, WITHOUT SERIOUSLY CHANGING AND IMPAIRING ITS MEDICINAL QUALITIES."

We believe these quotations are sufficient to show what the Etna Chemical Company has "always said it to be." In going over the literature for several years past we find the above stated in the same, or similar, words in nearly all of it. From the above four statements may be deduced: 1. They have stated that Phenalgine is a synthetic³ preparation; 2. they have conveyed the impression that Phenalgine is a chemical compound; 3. they have announced repeatedly that it is the "only" preparation of the kind, and 4. they have claimed that Phenalgine is non-toxic.

We believe that these four statements represent in plain English what the above quotations mean. They are all absolutely false. Phenalgine is not a synthetic; it is not a chemical compound; it is not the only ammoniated phenylacetamide, or the only acetanilid mixture containing carbonate of ammonia—and it most positively is toxic.

In one place it is stated that Dr. Cyrus Edson

"EMPLOYED HIS GREAT FACILITIES FOR CHEMICAL RESEARCH AND OPPORTUNITIES FOR CHEMICAL EXPERIMENT FOR THE PURPOSE OF PRODUCING A FORMULA FOR A COMBINATION OF STIMULANT AMMONIA OF COAL-TAR ORIGIN (sic) AND CHEMICALLY PURE PHENYLACETAMIDE, ALSO A COAL-TAR PRODUCT . . . WHICH HE NAMED PHENALGIN, OR AMMONIATED PHENYLACETAMIDE."

In another place we read that Phenalgine is made

"UNDER THE IMMEDIATE SUPERVISION OF THE ORIGINAL INVENTOR OF AMMONIATED COAL-TAR PRODUCTS."

By comparing this last quotation—which is from a current—1905—advertisement—with the preceding one it will be noticed that we are asked to believe that Phenalgine is made "under the immediate supervision of" Dr. Cyrus Edson—and yet Dr. Cyrus Edson died Dec. 2, 1903. This is equal to Lydia Pinkham's prescribing for the suffering women of America when the dear old soul has been dead for over twenty years.

We have before us a full-page advertisement taken from a recent number of a weekly medical journal, which possibly is meant as an answer to the announcement of the Council on Pharmacy and Chemistry that Phenalgine is a simple acetanilid mixture. The advertisement is divided into two parts; the first part is as follows:

"FACTS ABOUT ACETANILIDUM. (ANCIENT HISTORY.)"

"IT HAS LONG BEEN RECOGNIZED THAT ACETANILIDUM AND MOST OTHER COAL-TAR PRODUCTS ARE APT TO EXERT A DEPRESSING INFLUENCE UPON THE HEART, BUT THERE HAS NEVER BEEN ANY DOUBT ABOUT ITS GREAT VALUE AS A PAIN RELIEVER AND TEMPERATURE REDUCER. ITS THERAPEUTIC VALUE HAS, HOWEVER, BEEN PRACTICALLY NULLIFIED BY THE DANGER OF CYANOSIS AND OTHER EVILS CAUSED BY ITS WELL-KNOWN DEPRESSANT ACTION AND THE DIFFICULTY OF OBTAINING IT IN A PURE STATE. IT BEING KNOWN THAT CERTAIN DELETERIOUS SUBSTANCES ARE OFTEN TO BE FOUND IN COMMERCIAL ACETANILIDUM AND THAT MUCH OF THE INJURIOUS EFFECT ATTRIBUTED TO THIS DRUG IS ENTIRELY TRACEABLE TO THESE IMPURITIES."

The above are also falsehoods. The therapeutic value of acetanilid is not practically nullified . . . by the difficulty of obtaining it in a pure state.⁴ Neither is it true that "much of the injurious effect attributed to this drug is entirely traceable to these impurities." While deleterious substances may be found in commercial acetanilid, they are not found in the substance offered as medicinally pure acetanilid by reputable firms. Pure medicinal acetanilid is a cheap article, costing less than 30 cents a pound, for it is a substance that is easily and cheaply purified. It is a fact that the injurious effects are in the acetanilid itself and not in the impurities it may occasionally contain.

The second half of the advertisement in part is as follows:

"FACTS ABOUT PHENALGIN. (MODERN SCIENCE.)"

"MORE THAN A DECADE AGO THE LATE DR. CYRUS EDSON, THEN HEALTH COMMISSIONER FOR NEW YORK CITY AND NEW YORK STATE, RECOGNIZING THE VALUE OF CHEMICALLY PURE ACETANILIDUM AS A THERAPEUTIC AGENT, IF IT COULD BE DEPRIVED OF ITS DEPRESSANT QUALITY, EMPLOYED HIS GREAT FACILITIES FOR CHEMICAL RESEARCH AND OPPORTUNITIES FOR CHEMICAL EXPERIMENT, FOR THE PURPOSE OF PRODUCING A FORMULA FOR A COMBINATION OF STIMULANT AMMONIA OF COAL-TAR ORIGIN AND CHEMICALLY PURE PHENYLACETAMIDE, ALSO A COAL-TAR PRODUCT. THESE TWO CHEMICALS COMBINE UNDER CERTAIN CONDITIONS SO AS TO OBTAIN A PRODUCT WHICH HE NAMED PHENALGIN OR AMMONIATED PHENYLACETAMIDE."

3. This sentence is not complete, but, of course, this is immaterial. Little things like an incomplete sentence do not count.

1. See THE JOURNAL A. M. A., June 24, 1905, p. 1497.

2. Duggillson's Dictionary: "Synthetic."—"In chemistry the formation of a more complex body by the union of simpler bodies." Dorland's Dictionary: "Synthesis."—"The artificial building up of a chemical compound by the union of its elements." "Union" is not mixing.

There is more of the same character. In the first place, we call attention to the fact that "Phenylacetamide" is substituted for "Acetanilidum" when it is to go into Phenalgin. To mystify is one of the "tricks of the trade." Few physicians keep up with chemical terms and, therefore, are not supposed to know that Phenylacetamide is one of the chemical names for Acetanilid.

The reference here to Dr. Cyrus Edson brings up another fact, and that is that the Etna Chemical Company tries to convey the idea that Dr. Edson was the originator of Phenalgin. We have always understood that Dr. Cyrus Edson had something to do with pushing Ammonol and, if we remember rightly, got into some trouble thereby. We do not know the exact facts, but the following letter shows that he had a leaning toward another "ammoniated phenylacetamid." The letter is dated "New York, Oct. 6, 1894," and is addressed to the "Ammonol Chemical Company."

"During the past six or eight months I have used Ammonol extensively in my private practice. I have found it excellent in the treatment of neuralgias and for rheumatism. I have also verified your statement in two cases that were suffering from alcoholism. My experience justifies me in saying that it is the safest and best of the analgesic coal-tar derivatives.

"Very truly yours,

"CYRUS EDSON, M.D."

It may be of interest to know that the principal member of the firm of the Etna Chemical Company was at one time a member of the Ammonol Company, and it is usually understood, we believe, that Phenalgin is practically the same as Ammonol—in fact, the analyses published regarding the two preparations show this to be a fact.

We must make one more quotation:

"IT MAKES LITTLE DIFFERENCE TO A PHYSICIAN WHETHER PHENALGIN IS A MIXTURE OR A COMPOUND OR A SYNTHETIC, WITH A NAME THAT WOULD DESTROY THE ORTHOGRAPHIC BALANCE OF THE UNIVERSE, PROVIDED IT IS JUST WHAT HE HAS ALWAYS FOUND IT TO BE."

Very complimentary to the intelligence and common sense of physicians, is it not?

Suppose some fellow should get up a scheme to exploit a mixture of quinin and some cheap, harmless drug, say, starch—equal parts of each. Suppose he gives it a fanciful name, puts it on the market at a high price, say \$1.25 an ounce, and announces it as a new synthetic with wonderful therapeutic properties. Suppose that the schemer then adopts the nostrum vendor's methods of fooling physicians into using his product by getting some to give testimonials, others to furnish write-ups, and then subsidizes medical journals through liberal advertising, to print both the testimonials and the writeups. The preparation would, of course, prove to be a good thing if it were used in liberal quantities where quinin would ordinarily be used, and some patients using it would get well even if quinin were not indicated. Then with the psychologic effect of the testimonials, the writeups, and good, strong claims rightly pushed, unthinking physicians would do the rest. And then, after a while, when the schemer had gotten to the point where, each year, he was making a fortune out of his preparation, suppose some "self-appointed chemists" should examine into the preparation and discover that it was nothing but quinin and starch and so announce to the doctors of the country; what would the doctors say? That it makes little difference "provided it is just what he has always found it to be"?

This analogy is not far-fetched, for it is practically what has been done with Phenalgin. One difference is that since quinin costs as much per ounce as acetanilid does per pound, the profits on the acetanilid mixture would be sixteen times greater than that of our imaginary preparation. Another difference is that acetanilid is really a dangerous drug, unless used with care, both in its immediate and in its remote effects; quinin is far less so.

"Little difference" indeed, whether we are being humored or not! Evidently!

In conclusion, we charge the Etna Chemical Company with in-

tentionally misleading and deceiving the members of the medical profession, in that the said company has in its literature and in its advertisements conveyed the impression (whether directly stated or not): First, that its preparation, Phenalgin, is a synthetic compound; second, that Phenalgin requires special skill in its preparation; third, that Phenalgin has therapeutic values which it does not possess, and fourth, that Phenalgin is non-toxic.

We also charge that on account of these and other misrepresentations this company has inveigled physicians into prescribing and using a simple mechanical mixture of common well-known cheap drugs—for which an extravagantly high price is charged—under the supposition that this combination of cheap drugs is a chemical compound of special and peculiar merit as a therapeutic agent and, therefore, worthy of their confidence.

Our object in again giving space to this preparation—and practically all we have said applies to the other acetanilid mixtures that are exploited under fictitious names or as chemical compounds (such as ammonol, antikamnia and salacatin or sal-codia-Bell)—is to impress on physicians, by a typical example, the shamefulness of the deceptions practiced on them by nostrum manufacturers to the great injury of the public and of the medical profession.

A Protest Against Acetanilid.

Dr. A. Jacobi, in an article on the treatment of tuberculosis (*American Medicine*, Dec. 23, 1905), says:

"Use no acetanilid. I have almost despaired of the effect of my frequently repeated warning against acetanilid, the so-called anti-febril. Of all the preparations on the market, this cruel anilin poison is the worst. The western firm which disseminates that curse over the country, and that part of the profession which allows itself to be entangled in the complicity of prescribing it on its own blanks over its own names for their unsuspecting and confiding patients, stand guilty of malfeasance and malpractice. One of the greatest shocks to my feelings as a man and physician has been the discovery that our new Pharmacopœia, which should be the pharmacal gospel of both druggists and doctors, participates in the mistake of recommending it. In that Pharmacopœia, p. 3, you find acetanilid; and p. 368, pulvis acetanilidi compositus—a mixture of acetanilid, caffeine, and sodium bicarbonate. You recognize the dangerous stuff. It goes by the name of headache powders or by some exotic alluring name. Your Pharmacopœia recommends doses of 0.48 gm. (7.5 gr.), more than 0.32 gm. (5 gr.) of which are acetanilid—and does not even say how many doses the victim may take without having to pay his obolus to Sisyx. These headache powders were those a young laboring man had taken when he presented himself in semicollapse and cyanosis a few days ago. They are those which their highest authority permits the pharmacists to sell over the counter. Altogether, I need not say, and you know that the tendency of the new Pharmacopœia to adopt the compound names, is an indignity offered to the profession and an encouragement to the nostrum trade.

A Druggist's Opinion of Patent Medicines.

A well known and highly respected druggist doing a large business in the south part of Minneapolis, puts the following "sticker" on every package sent out from his store:

"It is always wise to consult your family physician.

Avoid patent medicines and fakers.

"40 YEARS' EXPERIENCE."

That is manly and courageous, and as there is no "patent" on the "sticker," we commend it to all druggists seeking the patronage of physicians and the respect of the public and of themselves.—*Northwestern Lancet*.

We Always Did Like This Story.

Diogenes, lantern in hand, entered the village drug store. "Say, have you anything that will cure a cold?" he asked. "No, sir; I have not," answered the pill compiler. "Give me your hand!" exclaimed Diogenes, dropping his lantern. "I have at last found an honest man!"—(Source unknown.)

To Supervise Nostrums in British Columbia.

The *British and Colonial Druggist* states that the provincial government has appointed a commission to investigate the sale of patent medicines containing harmful ingredients, with a view to legislation to protect consumers against the evil consequences of using these remedies. The step is the outcome of the recent death of an infant, which was poisoned by laudanum contained in a patent medicine.

Correspondence

Oregon and Organization.

PORTLAND, OREGON, Dec. 29, 1905.

To the Editor:—In your issue of Dec. 9, 1905, appears an article by J. N. McCormack, M.D., which, among other unwarranted statements about the medical profession in Oregon, contains this: "There was evidence on every hand that the schools of Oregon do not have high standards of requirements." In commenting on this article editorially, you write: "The average of the profession is low and the medical schools are weak."

By a strange coincidence, THE JOURNAL for December 9, containing these slurs, did not reach me in my mail, so I did not see it until a few days ago, when a copy was handed to me by a medical friend; otherwise I would have replied sooner.

As there are but two medical schools in Oregon, and the medical department of the University of Oregon is one of them, it is fair to assume that that school was included in the general libel on Oregon schools.

As dean of that school since its organization, almost twenty years ago, permit me to say that the statements regarding it made by Dr. McCormack are unjust and without proper foundation.

When the school was organized in 1887, it was what nearly all medical schools in the United States were at that time, a two-year course school. Shortly after that it became a three-year-course school, and in 1895 adopted the four-year graded course requirement. It has always kept at least abreast of the requirements laid down from time to time by the Association of American Medical Colleges (of which it has been a member since 1896), and at present requires four courses of lectures of seven and a half months each, with a curriculum in excess of that required by the Association of American Medical Colleges. Its laboratory and clinical facilities are ample, its lecture corps is efficient, its examinations are rigid. Its students who have gone elsewhere have stood high in other colleges. Its alumni furnish successful, prominent and respected practitioners in all parts of this country. The men connected with the school have labored honestly, assiduously and untiringly, in competition with the large and strongly endowed schools and with much self-sacrifice, constantly to elevate its standard, and they have been successful in keeping it on a plane commensurate with the advanced ideas of the times. Not a year has passed that its efficiency has not been increased.

The school does not pretend to approach in equipment the great endowed medical schools where the attendance is so much greater and where specialties are thoroughly taught, but it does maintain an equipment equal to the needs of the numbers in its classes, and its facilities enable us to teach well and thoroughly. It presents an instance of the small unendowed school doing honest, faithful and efficient work, notwithstanding that it is overshadowed and belittled by its great and haughty brother, the endowed school. But the small school has its work to do, and always will have; further, you will find that the small colleges of the country have given as many or more great men to the world as have the great schools. As in all schools, great or small, some poor students gain entrance and even graduate, so exceptionally such cases may have occurred here; but even if so, no fair-minded man would think of making such rarely exceptional cases the standard of worth of the school.

I am surprised that a man occupying the position of chairman of the committee on organization of the American Medical Association should have such a poor conception of justice and equitable rights as to pronounce such judgment as is contained in his scree on Oregon without proper investigation. If his pronouncements on other matters are based on such partial observations and investigations as in the case in point, they are absolutely without value.

Dr. McCormack has done us the gross injustice of publishing to the world, on insufficient and *ex parte* testimony given by prejudiced persons, his conclusions that the schools of Oregon do not have high standards of requirements. Editorially you add insult to injury by stating that this school (it being in-

cluded in the "schools of Oregon") is weak. Evidently Dr. McCormack's mind was poisoned from the lips of those who are jealous of the school and its success, and who vindictively take every opportunity to smirch its good name. Such are to be found in every community which is striving to be or has become a medical center. What was Dr. McCormack's duty before publishing his conclusions regarding this school? Clearly to hear both sides of the question. Had he come to me or to any other member of this faculty for information, it would have been furnished to him gladly. The same remark applies to your own editorial expression. That a great journal should condemn this school as a weakening, on the mere *ipse dixit* of a traveler on organization of the American Medical Association, without notice or opportunity to be heard, is astounding, nay, outrageous.

I met and talked with Dr. McCormack on the evening of his visit and address to the Portland City and County Medical Society, but to me he said never a word about investigating medical schools or reporting on them, nor of wishing information as to what he had heard of them or of their operations.

His strictures on the medical profession of Oregon, and of Portland in particular, founded on half-truths and distorted facts, are unjust and unwarranted, because he has founded a judgment on hasty and superficial investigation of conditions, instead of searching deeply for the whole truth. If he had probed deeper he would have found that those whom he tries to scourge with his rod are the ones who, by effort and loyalty to the medical profession and to the American Medical Association, have been earnest laborers in the work of organization.

S. E. JOSEPH, M.D.

The above letter was referred to Dr. McCormack, who replies as follows:

BOWLING GREEN, KY., Jan. 7, 1906.

To the Editor:—For nearly five years I have been engaged in a critical study of professional conditions, customs and prospects in nearly every section of the country, and in reporting the results of such observations in a manner intended to be both kind and helpful after my visit to each state. Charged with important duties, I have been forced to say unpalatable things, but, being without either the motive or inclination to do any section or individual injustice, and my work being entirely in the interest of harmony and well-being of the profession of the state or locality visited, Dr. Josephi is the only one who has ever questioned the accuracy of any statement made by me.

I have had numbers of letters from the leading physicians of Oregon expressing regret for the necessity of saying these plain things, but cordially indorsing what I had written, as well as the spirit in which it was done. Without further reference to these, or to the fact that my criticisms were based on personal observation and inquiry in almost every section of the state, I am going to put Dr. Josephi on the stand and prove by him that I might have said much more along the same lines and still be well within the bounds of truth. I said that the schools of Oregon did not have high standards of requirements, and the editorial comment was that they were weak. I quote Dr. Josephi on the same point, so far as his school is concerned: "The school does not pretend to approach in equipment the great endowed schools where the attendance is so much greater and where specialties are thoroughly taught," and, to my surprise, he evinces the unfortunate spirit found so abundantly there, which I had been informed he did not possess, when he says again, "notwithstanding that it is overshadowed and belittled by its great and haughty brother, the endowed school."

I said again, in substance, that personal and factional jealousy dominated the profession of his city. Dr. Josephi makes this appear very mild when he says, in the light of his long experience as a practitioner and teacher there, "Evidently Dr. McCormack's mind was poisoned from the lips of those who are jealous of the school and its success, and who vindictively take every opportunity to besmirch its good name." I submit that neither my article nor the editorial complained of contain anything, in substance or spirit, so conclusive as these quotations.

I am doing this work very reluctantly, and would not do it at all if I could not discuss the results of my investigations with the utmost frankness. The fundamental evils which

form the basis of my criticism were freely admitted to exist in my presence by leaders of the profession, publicly and privately, and knowledge of them is common property in Oregon. I was informed that Dr. Josephi was fitted by both temperament and training to lead in such a movement as would raise the schools, societies and profession above just criticism, and I trust that he will do so. When he reads my article again, after he is restored to his natural good temper, he will find that every line breathes the spirit of kindness, and that every unpalatable truth is told with regret. I quote my concluding paragraph: "My personal experience in Oregon was most pleasant. . . . If a profession with such leaders could only be unified, everything would be possible to it, and it is the hope of arousing them to this duty that I have hesitatingly and reluctantly expressed these criticisms."

J. N. McCORMACK, M.D.

Teaching Nursing by Correspondence.

TOLEDO, OHIO, JAN. 3, 1906.

To the Editor:—The committee on public health and legislation of the Academy of Medicine of Toledo ask for information based on experience which any of your readers may have as to the advisability of teaching nursing by correspondence courses. We wish especially to procure actual experiences which physicians may have had with such nurses. We do not care for arguments as to the logical possibility of such course, but whether in actual practice such nurses are satisfactory, and we wish replies from those who have tried them. These replies will be considered confidential if the writer requests it.

The replies may be sent to the undersigned, the secretary of the society.

WALTER H. SNYDER, M.D.

211 Ontario Street.

Association News

NEW MEMBERS.

List of new members of the American Medical Association for the month of December, 1905:

- ARIZONA.**
Slayton, F. H., Clifton.
- ARKANSAS.**
Ball, C. C., Ravenden.
Bradsher, R. E., Marmaduke.
Grammer, J. B., Searcy.
Jamison, O. A., Elgin.
Jumper, C. E., Dermott.
Morton, J. T., Lexa.
Hassenger, J. W., Booneville.
Rightor, H. H., Helena.
- CALIFORNIA.**
Armstrong, E. C., Pomona.
Ball, J. D., San Juan.
Crees, Robert, Santa Maria.
Crump, J. M., Santa Rosa.
Duncan, A. M., Los Angeles.
Fricke, Richard, Oakland.
Grady, Edward, Eldridge.
Lytle, Annie G., San Francisco.
Myle, L. L., Valjejo.
Mills, L. A., Fendale.
Mills, J. M., Larkspur.
Posee, A. C., San Jose.
Radabaugh, J. M., Pasadena.
Reckers, W. A., Placerville.
Schwartz, Jacob, San Francisco.
Wilson, W. L., San Mateo.
- COLORADO.**
Baker, W. T. H., Pueblo.
Dymenberger, Noa, Rifle.
Ewing, G. F., Vernon.
Hassenger, W. F., Fiddle Creek.
Herr, Ida S., Boulder.
Holmes, R. E., Canon City.
Howe, A. L., Vray.
Kahn, Mauric, Leadville.
Libby, G. F., Denver.
McKibbin, Samuel, Amethyst.
Miller, J. K., Greeley.
Rimbo, J. W., Florence.
- CONNECTICUT.**
Bradley, M. S., Hartford.
Chambers, T. F., New Haven.
Darling, A. E., Killingly.
Dwyer, P. J., Waterbury.
Griggs, J. B., Stamford.
Holbrook, C. W., E. Haven.
Spier, S. L., New Haven.
Wright, G. H., New Milford.
- DELAWARE.**
Black, J. J., New Castle.
Nickerson, H. A., Magnolia.
- DISTRICT OF COLUMBIA.**
Bartsch, Anna, Washington.
Bigges, J. H., Washington.
C. K. Kelley, J. P., Jr., Washington.
Mitchell, J. E., Washington.
Pentliss, E. C., Washington.
Repetti, J. J., Washington.
Snowden, E., Washington.
Sobon, Frederick, Washington.
- FLORIDA.**
Garner, J. E., Wauchula.
Huddleston, R. H., Miami.
- GEORGIA.**
Andrews, C. K., Atlanta.
Edie, J. G., Beach.
Fleming, A., Atlanta.
Port, J. G., La Grange.
Foster, J. J., College Park.
Goldsmith, J. M., Atlanta.
Johnson, M. M., Vancross.
Krayon, J. M., Weston.
McCleary, H. L., Royston.
Rogers, F. S., Coleman.
Riley, B. F., Jr., Thomson.
- IDAHO.**
Ross, H. P., Nampa.
Thompson, R. S., Moscow.
- ILLINOIS.**
Bruce, W. W., Casey.
Baker, W. E., Chicago.
Brawley, F. E., Chicago.
Brouillett, R. J., Chicago.
Bumstead, C. M., Monticello.
Bowe, Edward, Jacksonville.
Cochran, A. M., Danville.
Cunningham, W. S., Des Plaines.
Colehour, S. P., Carroll.
Darling, U. G., Chicago.
Donaldson, C. O., Dwight.
Edredred, E. L., Frankfort.
Fitzhugh, P. H., Fithian.
Feingold, Leon, Chicago.
Fitzgibbon, G., Chicago.
Hend, H. W., White Hall.
Hale, J. L., Anna.
Hogan, T. A., Chicago.

- Headland, J. Galva.
Hohmann, W. D., Kewanee.
Katz, B. W., Chicago.
Marr, W. W., Patoka.
Murfin, J. W., Vernon.
Mai, H., Chicago.
Mackechnie, H. L., Chicago.
Morton, C. E., Ridgefarm.
McCabe, L. C., Chicago.
Palera, Edward, Chicago.
Parks, C. H., Chicago.
Kaiser, Salem.
Redmond, T. B., Danville.
Rezanka, G. W., Chicago.
Roos, O. H., Ozen.
Stuppel, M. J., Chicago.
Stackable, W. H., Chicago.
Smalley, N. J., Chicago.
Talen, J. D., Piper City.
Tunnicliff, Ruth, Chicago.
Walker, H. W., Grantsburg.
- INDIANA.**
Aikman, E. A., Clinton.
Blount, R. T., Homer.
Blossom, J. C., Mt. Summit.
Boor, M. A., Terre Haute.
Bushaw, B. E., Marengo.
Combs, M. R., Terre Haute.
Evans, C. S., Union City.
Fox, H. A., Gosport.
Schoon, P. H., New Middletown.
Gibbs, J. C., Crown Point.
Green, C. B., Greensburg.
Hall, M. L., Newport.
Howes, J. M., Bowling Green.
Kethart, M. L., Columbia City.
McFadden, W. C., Sheberville.
O'Brien, W. M., Danville.
Powell, E. U., Greentown.
Ross, W. H., Veversburg.
Schoon, P. H., New Middletown.
Staley, T. M., Bicknell.
Tomlinson, C. H., Clero.
- INDIAN TERRITORY.**
Garrett, G. H., Sapulpa.
- IOWA.**
Arthur, S. H., Scranton.
Dennison, J. C., Bellevue.
Hofstetter, George, Lyons.
Lovelady, J. M., Sidney.
Moore, W. E., Derby.
Oshana, Aphasia, Crystal Lake.
Parker, R. H., Storm Lake.
Poore, A. B., Cedar Rapids.
- KANSAS.**
Emley, S. C., Lawrence.
Hale, R. L., Neal.
Huff, W. D., Westphalia.
Harper, F. A., Pittsburg.
Haning, W. P., Bellevue.
Jarrett, M. F., Fort Scott.
Justice, H., Hutchinson.
Kirkwood, J. W., Wichita.
McClmonds, R. C., Walton.
Mumler, R. S., N. Toneyka.
Warren, D., Clearwater.
Weaver, C. D., Galva.
Welch, James, Tampa.
Yankey, J. W., Esbon.
- KENTUCKY.**
Gillespie, R. G., Berry.
Jenkins, W. A., Louisville.
Rhea, R. B., Morganfield.
Smith, L. L., Paducah.
Swope, H. S., Ashland.
Thompson, Z. A., Pikeville.
Walters, W., Pikeville.
- LOUISIANA.**
Dossman, R. S., Ville Platte.
Moise, A. B., New Orleans.
- MAINE.**
Combs, G. H., Waldoboro.
Cowes, L. M., Enfield.
Sullivan, P., Calais.
Wing, E. M., North Anson.
Weeks, A. H., Portland.
- MARYLAND.**
Barnes, W. M., Baltimore.
Chambers, J. W., Baltimore.
Davis, S. G., Baltimore.
Fisher, D. E., Denton.
White, E. H., Cumberland.
- MASSACHUSETTS.**
Brown, E. M., Springfield.
Rundy, F. E., Boston.
Crofts, N. M., North Adams.
Brett, E. A., Boston.
Charteris, M. A., Worcester.
Day, H. P., Boston.
Dav, C. C., Newburyport.
Dutton, Charles, Wakefield.
Francis, C. S., Brookline.
Farlow, J. W., Boston.
Gates, G. W., Boston.
Hare, C. H., Boston.
Jordan, J. F., Peabody.
Jones, P. E., Boston.
Kirby, J. E., Clinton.
- MICHIGAN.**
Hodcroft, W. E., Detroit.
Campbell, E. H., Newburg.
Chiley, E. O., Conklin.
Cobb, L. R., Bellevue.
Dorzer, H. A., Albion.
Hartman, G. J., Muskegon.
Hughes, G. A., Cassopolis.
Harris, R. H., Battle Creek.
King, L. A., Baroda.
MacKenzie, Joseph, Cheesee.
McCutcheon, W. C., Cassopolis.
McClelland, L. N., French, Ben.
ton Harbor.
Nicholson, J. L., Hart.
Oakman, C. S., Detroit.
Planck, E. A., Union.
Post, H. I., Bellevue.
Russett, C. B., Detroit.
Thompson, A. E., St. Clair.
Whitten, W. D., Baltic.
- MINNESOTA.**
Gosslee, J. L., Wabasso.
Hynes, G. E., Minneapolis.
Jensen, M. J., Minneapolis.
Judd, E. S., Rochester.
Zimbeck, R. D., Montevideo.
- MISSISSIPPI.**
Clarke, N. L., Meridian.
Elliot, H. R., Shuford.
Hand, R. M., Shubuta.
- MISSOURI.**
Aufderheide, W. D., St. Louis.
Bond, H. W., St. Louis.
Blair, V. P., St. Louis.
Coffelt, T. A., Springfield.
Howink, J. J., St. Louis.
Martin, J. C., Kansas City.
Patterson, W. L., Springfield.
Stutler, W. K., Oakridge.
Thulsoke, M. C., St. Louis.
- MONTANA.**
Leavitt, E. D., Butte.
Stokes, R. L., Lewistown.
- NEVADA.**
Hinzmann, W. H., Austin.
- NEBRASKA.**
Angle, E. J., Lincoln.
Bartlett, W. C., Alma.
Bishop, J. C., Omaha.
Gadhois, A. E., Humphrey.
Hoffman, J. W., Omaha.
Koutsky, J. W., South Omaha.
Lueschen, A. G., Columbus.
Patchin, F. J., Nelson.
- NEW HAMPSHIRE.**
Fernald, Fred, Nottingham.
- NEW JERSEY.**
Heron, A. M., Lakewood.
Knidlich, W. T., Hoboken.
Werst, N. B., Egg Harbor City.
- NEW MEXICO.**
Lane, B. E., Las Cruces.
Raschbaum, L. B., Roswell.
Van Arsdale, E. B., Alamogordo.
- NEW YORK.**
Colly, F. R., Highland Falls.
Danzl, Emanuel, New York City.
Finney, F. W., Buffalo.
Hutchinson, J. L., Jamestown.
Higgins, R. P., Cortland.
Threll, M. L., New York City.
Trevelt, Ira H., West Seneca.
- NORTH DAKOTA.**
Arzt, B. G., Balfour.
Bailey, R. B., Fargo.
Ede, J. W., Harvey.
Johns, S. M., Velva.
Lindstrom, J. S., Orono.
Nelson, F. W., Granden.
Paulson, A. J., Flaxton.
Skelsey, A. W., Fargo.
Windell, H. C., Kenmore.
- OHIO.**
Bown, H. H., Pleasant City.
Belle, A. M., Columbus.

Blue, N. S., Defiance.
 Bouse, G. M., Columbus.
 Calkins, T. J., Cleveland.
 Dannels, R. P., Toledo.
 Exline, C. E., Canton.
 Gilliam, C. F., Columbus.
 Hantley, J. H., Lima.
 Hentlick, A. G., Gallipolis.
 Hilton, W. S., Pleasant Bend.
 Kinaman, C. L., Cleveland.
 Henderson, L. M., Marysville.
 Hedrick, J. S., Dunkirk.
 Keyser, John, Cincinnati.
 Love, G. R., Toledo.
 Lisle, L. M., Columbus.
 Lidsworth, A. W., Mt. Victory.
 Marshall, George, Idell Roy.
 Miller, A. T., Shanesville.
 Moertz, Charles, Cincinnati.
 McRay, Orville, Miamisburg.
 McQueen, D. W., Camden.
 Powell, O. J., Ashland.
 Podesie, J., Cincinnati.
 Pritchard, A. L., Nelsonville.
 Rife, Josephine, Chillicothe.
 Rose, F. W., Port William.
 Stiles, L. B., Marietta.
 Stevens, E. S., Lebanon.
 Stanbery, H., Cincinnati.
 Schmidt, T. J., Cleveland.
 Sellick, S. J., Cleveland.
 Sanger, D. M., Dayton.
 Sipov, A. F., Akron.
 Tidball, A. H., Garrettsville.
 Weckert, B. M., Cincinnati.
 Ward, E. F., Penabasco.
 Walton, A. L., Sycamore.
 Whitwham, G. P., Toledo.

OKLAHOMA.

Duke, J. W., Guthrie.
 Fizzell, J. T., Butler.
 Friedemann, Paul, Kiel.
 Miller, J. W., Denver.
 Mullins, Ira, Hominy.
 Overstreet, J. A., Kingfisher.
 Stephens, J. M., Hastings, O.
 Sexton, C. E., Perkins.

OREGON.

Johnson W. S., Bonanza.

PENNSYLVANIA.

Blair, T. S., Harrisburg.
 Chisler, C. H., Erie.
 Evans, E. E., McKeesport.
 Fisher, M. M., Jenkintown.
 Glenn, J. E., Fairfield.
 Githens, T. S., Philadelphia.
 Ladholtz, Edward, Philadelphia.
 Lowry, R. S., Butler.
 Moore, E. H., Huntington.
 Moore, F. S., Pittsburgh.
 Seiffer, M. K., Wyndale.
 Robison, C. E., Altoona.
 Strayer, J. P., Oil City.
 Schrade, Anna M., Erie.
 Sturzon, S. D., New Galilee.
 Vaux, C. J., Pittsburgh.
 Ward, J. M., Oil City.
 Wells, J. F., Philadelphia.
 Walker, W. J., Greensburg.

RHODE ISLAND.

Carpenter, E. G., East Greenwich.
 Fletcher, William, Providence.
 Hinchey, J. D., Providence.
 Kelley, J. S., Providence.
 Smith, E. B., Providence.
 Sullivan, W. G., Providence.

SOUTH CAROLINA.

Black, W. C., Greenville.
 Kemp, S. C., Camden.

SOUTH DAKOTA.

Heinemann, A. A., Menno.
 McNamee, J. E., Canova.
 Parsons, A. W., Sioux Falls.
 Wendt, C. L., Canton.

TENNESSEE.

Black, J. M., Knoxville.
 Lewis, W. L., Iola.
 Mayer, George, Wartburg.

TEXAS.

Anderson, W. B., Brownwood.
 Black, R. G., South Sulphur.
 Carman, E. M., Red Oak.
 Carter, J. T., Leland.
 Cole, W. M., Longview.
 Cline, W. B., Arvin.
 Dörbandt, Thomas, Lampasas.
 Fuller, J. E., Sumner.
 Foster, J. D., Riesel.
 Milner, P. J., Greenville.
 Mullendix, A. J., Ft. Worth.
 Pendergrass, J. J., Leonard.
 Thomas, G. T., Rogers.
 Thornton, Z. N., Fort Worth.
 Thompson, W. R., Ft. Worth.
 Wallace, B. C., La Rue.
 Ward, E. D., Blum.

UTAH.

Bardsley, W. J., Park City.

VERMONT.

Brown, E. T., Montzomery Center.
 Cohara, I. S., Milton.
 Church, W. G., Burlington.
 Jackson, J. W., Barre.
 Kenney, C. C., Sharon.
 Weston, H. K., Windsor.

VIRGINIA.

Hackley, J. B., Purcellville, Va.
 Hill, E. G., Manchester.
 Mason, H. N., Petersburg.
 Pinkerton, A. A., Abercane.
 Rice, S. D., Richmond.
 Turman, G. F., Richmond.

WASHINGTON.

Kellogg, W. R. M., Seattle.
 Mount, H. A., Wauitsburg.

WEST VIRGINIA.

Allen, J. J., Wheeling.
 Alkire, J. P., Everson.
 Barrows, J. L., Greenswood.
 Bailey, W. F., Terra Alta.
 Davis, J. R., Moundsville.
 Jude, J. N., Petersburg.
 McElfresh, E., Point Pleasant.
 Pickering, W. D., Topias Grove.
 Peters, A. L., Rievesville.
 Peters, E. F., Switchback.
 Wilson, T. L., Piedmont.

WISCONSIN.

Broche, H. L., Oshkosh.
 Harlow, G. A., Milwaukee.
 Jerminal, H. F., Milwaukee.
 Luce, J. E., Chilton.
 North, C. F., Benner Dam.
 Nichols, W. T., Milwaukee.
 Stoltz, H., Milwaukee.
 Vernon, S. G., Madison.
 Young, G. H., Elkhoru.

JAPAN.

Pleadwell, F. L., Yokohama.

OSCAR J. HURTH, M.D., to Miss Nora Jochem, both of Cedarburg, Wis., December 11.

WARD J. MACNEAL, M.D., to Miss Mable Perry, both of Ann Arbor, Mich., December 28.

JOSEPH E. MACNEILL, M.D., to Mrs. Louisa A. Bloor, both of Denver, Colo., December 20.

FRANCIS DUNCAN, M.D., Chicago, to Miss Ida Estella Utley of Oak Park, Ill., December 24.

JOHN A. MCCULLOCH, M.D., to Miss Grace Badgett, both of Maryville, Tenn., December 27.

FREDERICK A. RHOADS, M.D., to Miss Amy Howard Blumer, both of Pittsburgh, December 21.

PIERRE WILSON, M.D., Dallas, Texas, to Mrs. Daisy Hibbard of Denison, Texas, December 25.

O. H. SWOPE, M.D., Iaeger, W. Va., to Miss Emma F. Kleykamp of St. Louis, December 27.

JOHN H. WEBER, M.D., Akron, Ohio, to Miss Eleanor Smith of Willoughby, Ohio, January 3.

CHARLES S. SKAGGS, M.D., to Miss Nellie E. Dare, both of East St. Louis, Ill., December 24.

WILLIAM M. CHANNELL, M.D., to Miss Florence M. Douglas, both of Oakland, Cal., December 12.

ANDREW P. OVERGAARD, M.D., to Miss Gertrude Freming, both of Fremont, Neb., December 25.

WILLIAM C. VOORSANGER, M.D., to Miss Maude Ackerman, both of San Francisco, December 23.

W. P. STOLTENBERG, M.D., New Liberty, Iowa, to Miss Lovell E. Waite of Iowa City, December 28.

EDMUND M. VAN BUREKIR, M.D., to Miss Louise Schwartz, both of Fort Wayne, Ind., January 10.

MARK LEWIS EMERSON, M.D., Oakland, Cal., to Miss Alice Folger of Sebastopol, Cal., December 22.

GAINES WORLEY, M.D., St. Augustine, Fla., to Miss Gertrude Ansel of Charleston, S. C., December 20.

EDWARD ANTOINE RICH, M.D., Brigham, Utah, to Miss Ethelwyn Innis of St. Paul, Minn., January 1.

HENRY TERRILL HATRISSE, M.D., Madison, Ga., to Miss Lonsie Simmons of Sandersville, Ga., January 4.

CARL H. LUND, M.D., Oklahoma City, Okla., to Miss Elizabeth Clark of Ironton, Ohio, December 27.

JACOB E. LONGACRE, M.D., Weaversville, Pa., to Miss Annie K. Beitel of Catasauqua, Pa., January 3.

HARRY F. HUTCHINSON, M.D., Hulburton, N. Y., to Miss Loda Blass of Spencerport, N. Y., December 21.

JOHN CROCKETT NEWTON, M.D., to Miss Frances May Sanborn, both of San Francisco, December 26.

GIDEON M. FREEMAN, M.D., Seattle, Wash., to Miss Violet Lang of Walla Walla, Wash., December 26.

ALBERT R. RITCHIE, M.D., Dunkerton, Iowa, to Miss Dolora E. Everett of Iowa City, Iowa, December 24.

FRANK A. SWEZEY, M.D., Wakonda, S. D., to Miss Antonia Huelsman of Sioux City, Iowa, December 25.

HAROLD N. SIMPSON, M.D., Harbor Beach, Mich., to Miss Mildred Lane of Ann Arbor, Mich., December 27.

CORNELIUS A. FRAME, M.D., Cambridge, Ohio, to Miss Helen Mae Espie of Caledonia, N. Y., December 27.

W. EDGAR SHALENBARGER, M.D., Chicago, to Miss Elizabeth McIntyre, at Bloomington, Ill., December 21.

LEWIS CASS SCHUTT, M.D., Toledo, Ohio, to Miss Elizabeth Bennett Bailey of Detroit, Mich., December 19.

CLARENCE A. REVELLE, M.D., Lutesville, Mo., to Miss Althea Kallmeyer, at New Florence, Mo., December 23.

ROSS MCCURE CHAPMAN, M.D., Watertown, N. Y., to Miss Harriet Corwell of Ann Arbor, Mich., January 2.

JACOB WINSLOW LONGFELLOW, M.D., Machias, Maine, to Miss Agnes A. Weingartner of Philadelphia, January 1.

JACOB S. SHOEMAKER, M.D., New Lothrop, Mich., to Miss Helena Mae Spear of Corunna, Mich., December 20.

FREDERICK HAZELWOOD, M.D., Parkin, Ark., to Miss Antoinette Grace Van Wormer of Vassar, Mich., recently.

FLOYD PALMER, M.D., Fishkill-on-Hudson, N. Y., to Miss Mary Louise Newman of Amenia, N. Y., December 20.

JAMES W. RICHARDS, M.D., Mechanicsville, Iowa, to Miss Julia Maye Brainard of Wyoming, Iowa, December 27.

THOMAS K. SLAUGHTER, M.D., Belleview, Fla., to Miss Eunice Newton of Guthrie, Ky., at Sutherland, Fla., December 23.

Marriages

WILLIAM E. HASTINGS, M.D., Mount Vernon, Ind., recently.
 LOYD H. FEICK, M.D., to Miss Ida Boyer, both of Reading, Pa., December 28.

CHARLES M. ALT, M.D., Baltimore, Ohio, to Miss Minnie De Vaux, December 23.

FRANCIS F. JOHNSON, M.D., to Mrs. Ada Bradley, both of San Francisco, December 10.

JOHN ADAMS MISKEY, M.D., to Miss Esther Allen, both of Philadelphia, January 2.

G. B. FULLER, M.D., to Miss Helen B. Stitzel, both of Loudonville, Ohio, December 27.

WILLIAM W. DUDIN, M.D., to Miss Daisy Sherrill of Columbus, Miss., December 27.

RICHARD LIGHTBURN SUTTON, assistant surgeon U. S. Navy (retired), to Miss Magdalena Izgel, at Leavenworth, Kan., January 3.

Deaths

August F. Lemke, M.D. Medical Department of the University of Illinois, Chicago, 1895, of Chicago, a member of the American Medical Association, Illinois State Medical Society, Illinois Association of Military Surgeons, Chicago Medical Society, Chicago Pathological Society and other scientific organizations; interne in Cook County Hospital in 1895-1896; pathologist to the Illinois Eastern Hospital for the Insane Hospital until 1898; assistant surgeon of the Third Illinois Infantry, U. S. V., in the Spanish-American War; and afterward captain and assistant surgeon Ill. N. G., assigned to Third Infantry; associate professor of medicine in the College of Physicians and Surgeons, Chicago; at times on the staff of Cook County Hospital, Mercy Hospital and other institutions, a pathologist of great promise, who was obliged to leave Chicago on account of ill health in October, 1904, died at his home in Pasadena, Cal., January 6, from sarcoma of the face and neck, aged 32.

Lehman H. Dunning, M.D. Rush Medical College, Chicago, 1872; member of the American Medical Association and chairman of the Section on Obstetrics and Diseases of Women in 1904; member of the Indiana State Medical Society, and president of the Marion County Medical Society; member of the American Association of Obstetricians and Gynecologists; delegate to the Ninth International Medical Congress; professor of diseases of women in the Medical College of Indiana; consulting surgeon to the Indianapolis City Hospital and City Dispensary; chief of staff of and gynecologist to the Deaconess Hospital, Indianapolis, died at his home in that city, January 4, from heart disease, at the age of 55.



Robert Bruce Stover, M.D. Jefferson Medical College, Philadelphia, 1858, of Richmond, Va., died December 31, in Williamsburg, Va. He served two years as assistant surgeon in the Confederate service. In 1879 he went through a severe epidemic of yellow fever in Memphis. In 1883 he moved to Richmond and established himself in practice, where he lived up to a few months of his death. He was associate editor of the *Atlantic Journal of Medicine*, surgeon to Lee Camp, Confederate Veterans, and to the Confederate Soldiers' Home.

Thomas Y. Aby, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1866; for several years assistant quarantine officer of Louisiana at Quarantine, at the mouth of the Mississippi; assistant surgeon of the Washington Artillery in the Confederate service during the Civil War; acting assistant surgeon, U. S. Army, in the Spanish-American War, and on duty with the Twentieth Infantry at Santiago; twice state senator, died at his home in New Orleans, December 24, from cerebral hemorrhage, after an illness of a year, aged 65.

Orlando Sampson Strange, M.D. New York University, New York City, 1849; member of the College of Physicians and Surgeons of Ontario, 1860; licentiate of the Medical Board of Upper Canada, 1850; mayor of Kingston in 1859 and 1860; alderman for several years; a member of the Ontario Medical Council from 1872 to 1875; surgeon at the penitentiary for 11 years, died at his home in Kingston, Ont., January 2, after a long illness, aged 80.

Thomas Warfield Simmons, M.D. Jefferson Medical College, Philadelphia, 1861; a member of the Medical and Chirurgical Faculty of Maryland; president of the Washington County Medical Society in 1894; county physician from 1892 to 1896; health officer of Hagerstown for several years, died December 30 from uremia two days after an operation for intestinal obstruction, at the Washington County Hospital, Hagerstown, aged 69.

James Frazier Davis, M.D. Hospital College of Medicine, Louisville, Ky., 1880, formerly of Louisville, was found dead, December 24, in Long Lick Creek, near his home in Bardstown

Junction, Ky., aged 51. It is supposed that his horse walked over a bluff, dragging the buggy, and that the fatal injuries were received as a result of the fall, as the creek at the point where the body was found was only 18 inches deep.

William R. Blue, M.D. University of Louisville Medical Department, 1888; a member of the American Medical Association; for several years professor of genitourinary and skin diseases in the Hospital College of Medicine, Louisville; a prominent specialist in these departments in Louisville, died at the home of his sister in Rome, Ga., January 1, from paralysis, after an illness of a year, aged 40.

John C. Campbell, M.D. University of the State of Missouri Medical School, Columbia, 1874; a practitioner for 65 years; formerly of Nebraska City, Neb.; some-time member of the territorial legislature, of the territorial council and of the state constitutional convention; for six years a member of the board of education, died at the home of his daughter in Asheville, N. C., December 12, aged 90.

John Hodges Drake, M.D. Medical College of Alabama, Mobile, 1891; formerly of Opelika, Ala., but for six years past, on account of lung disease, a resident of Asheville, N. C.; a member of the American Medical Association; and a specialist in diseases of the eye, ear, nose and throat, died at his home in Asheville, December 13, from pneumonia, after an illness of a few days, aged 36.

Christopher C. Clements, M.D. Jefferson Medical College, Philadelphia, 1864; captain and later brigade surgeon during the Civil War; some-time president of the Greene County (Mo.) Medical Society; president of the Springfield Board of Health, and member of the city council, died at his home in Springfield, December 20, after a long illness, aged 67.

George H. Granger, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1867; a veteran of the Civil War; representative in the Michigan legislature from 1879 to 1882; president of the Bay City board of education for three terms, died at his home in Bay City, December 22, from diabetes, after a lingering illness, aged 64.

George F. Chalmers, M.D. Cooper Medical College, San Francisco, 1894, of Niles, Cal.; health officer of that place for seven years; district surgeon for the Southern Pacific System, and temporary superintendent of the Masonic Home, Decoto, died at the Railroad Hospital, San Francisco, December 26, four days after an operation for appendicitis, aged 37.

Silas Proctor Emes, M.D. University of the Victoria College, Coburg, Ont., 1862; member of the College of Physicians and Surgeons of Ontario, 1866; some-time coroner of Welland County, died at his home in Niagara Falls, Ont., from nephritis, December 26, aged 67.

Thomas P. Coleman, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1859; one of the oldest practitioners of Northern Mississippi, died at his home in Oxford, December 27, from injuries received in a railway accident five days before.

Francis Duncan, M.D. Rush Medical College, Chicago, 1900, a member of the American Medical Association and a promising young physician of Chicago, died suddenly from heart disease at San Diego, Cal., January 2, aged 30. He had been married only ten days before.

Joseph Carbert, M.D. University of the Victoria College, Coburg, Ont., 1856; licentiate of the Medical Board of Upper Canada, 1852; member of the College of Physicians and Surgeons of Ontario, 1886, died at his residence in Toronto, Ontario, January 2, aged 79.

Thomas Garth, M.D. Cincinnati, 1864; a veteran of the Civil War; justice of the peace for eight years; coroner of Wright County, Iowa, for 16 years; mayor of Clarion, Iowa, for one term, died from abscess of the liver at his home in Clarion, December 19, aged 70.

Walter R. Francis, M.D. University of Buffalo Medical Department, 1876, of Marion, Ind.; a member of the Grant County Medical Society; once health officer of Grant County, died from paralysis at the home of his son in Buffalo, N. Y., December 28, aged 52.

Theodore Edward Beard, Jr., M.D. Yale University Medical Department, New Haven, Conn., 1897, a member of the American Medical Association and of the Connecticut Medical Society, died at his home in New Haven, January 1, aged 41.

Julius Alexander Caldwell, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1854, a prominent practitioner of Salisbury, N. C., died suddenly at his home in that city, from heart disease, December 21, aged 75.

George W. Corbett, M.D. College of Physicians and Surgeons of Chicago, 1901, died at his home in Plymouth, Wis., December 16, about one day after a runaway accident in which he sustained a severe concussion of the brain, aged 38.

Robert Mitchell, M.D. University of Edinburgh, Scotland, 1839, L.R.C.S. Edinburgh, 1859; for 21 years surgeon to the Dorchester (N. B.) penitentiary, died at his home in Amherst, N. S., December 27, after a brief illness, aged 73.

Arthur Guy Beazley, M.D. Atlanta (Ga.) Medical College, 1866, private and later assistant surgeon in the Confederate service during the Civil War, died at his home in Crawfordville, Ga., December 25, after a long illness, aged 69.

John Henry McFaul, M.D., C.M. University of Trinity College, Toronto, member of the College of Physicians and Surgeons, Ontario, 1888, died suddenly from angina pectoris at his home in Toronto, Ont., December 23, aged 62.

J. A. Sabourin, M.D. Laval University Medical Department, Quebec, 1902, of Point St. Charles, P. Q., died at the Hôtel Dieu, Montreal, December 28, from typhoid fever, after an illness of three weeks, aged 30.

Theophilus Grenier, M.D. Laval University Medical Department, Quebec, P. Q., 1879, health officer of Newton Township, Mackinac County, Mich., died at his home in Gould City, Mich., December 20, aged 54.

D. H. Brewer, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1886, died at his home in Brenham, Texas, December 19, after an illness of nearly four years, from tuberculosis, aged 45.

John R. Atkinson, M.D. University of Nashville Medical Department, 1869, a Confederate veteran, died at his home in Lavinia, Tenn., December 29, from tuberculosis, after a long illness, aged 65.

Thomas A. Brown, M.D. Jefferson Medical College, Philadelphia, 1873, for several years a practitioner of Wilmington, Del., died on his farm near Frederica, Del., December 28, after a long illness, aged 57.

George W. Doane, M.D. Harvard University Medical School, Boston, 1844, for more than 60 years a practitioner of Barnstable County, Mass., died at his home in Hyannis, December 20, aged 81.

Hilary D. Bruce, M.D. Atlanta (Ga.) Medical College, 1882, a practitioner for 45 years, died suddenly at his home in Waverly, Ala., December 17, from heart disease, aged 74.

Travis L. Cooper, M.D. Memphis Hospital Medical College, 1902, died at his home in Caloga, Miss., December 26, from tuberculosis, after an illness of two years.

Daniel Booher, M.D. Medical College of Ohio, Cincinnati, 1894, died from tuberculosis at his home in Elizabeth, Colo., December 20, after an illness of four years.

Rollin B. Carter, M.D. Ohio, 1884, of Akron, Ohio, died at a sanitarium in Cleveland, December 23, from sciatica, after a long illness, aged 47.

John J. Cronin, M.D. College of Physicians and Surgeons in the City of New York, 1893, died at his home in New York City, December 3.

DeForrest W. Chase, M.D. Medical School of Maine of Bowdoin College, Brunswick, 1889, died at his home in Boston, December 19.

David R. Davis, M.D. University of Pennsylvania Department of Medicine, 1893, died at his home in Lansford, Pa., January 5.

Charles E. Wentz, M.D. Medico-Chirurgical College, Philadelphia, died at his home at New Providence, Pa., January 3, aged 28.

W. T. Roney, M.D. Medical College of Georgia, Augusta, 1891, died December 16, at his home in Spread, Ga.

George L. Buck, M.D. Marion, Ind., 1889, died at his home in Star City, Ind., December 14, after a long illness, aged 52.

Miscellany

Deaths in India from Wild Animals. Over 2,000 deaths directly ascribable to wild animals have occurred in India in one year. In addition, 21,880 deaths were entered as caused by snake bites. The official figures show that 88,206 cattle were destroyed by wild animals, 10,736 by snakes. While the government of India makes strenuous efforts to reduce the mortality due to wild animals, only 16,122 were killed in the year.

The people of India apparently make little effort to better this condition [owing to religious scruples].—*Medical Age*.

Arsenic in Animals.—An address was read by the Prince of Monaco before a recent meeting of the Paris Société de l'Internat., describing some of the results of his voyages to Arctic regions and other remote parts of the oceans. Arsenic was detected in fish from depths of nine to twelve thousand feet, and also in fish and animals in the Arctic regions, and in animals at altitudes of six thousand feet and more on lonely islands in unrequented seas. The speaker referred also to scientific findings registered by instruments sent up on kites or balloons from his vessel in ocean wilds. They rose to an altitude of 16,300 meters or nearly 10 miles. He usually has several scientists as guests on his vessel, the *Princess Alice*, which is lavishly equipped for scientific research. His "ocean museum" is one of the sights of the Rivera.

Paget's Disease of the Bones.—Menetrier and Rubens-Duval report (*Bull. et Mém. de la Soc. Méd. des Hôpitaux*, June 1) a case of Paget's disease of the bones treated with antisyphilitic remedies with success, an arrest of the process being produced. This case confirms the view expressed by M. M. Lannelongue and Fournier as to the hereditary syphilitic nature of the disorder, but seems to prove that acquired syphilis may also be its cause. They refer to another similar case reported by Gaucher in which Paget's disease was materially benefited by hypodermic injections of benzoate of mercury, and still another one reported by Frechon (*Thèse de Paris*, 1903). They conclude that Paget's disease is not only dependent on syphilis, but that its lesions themselves are syphilitic.

Tuberculous Meningitis.—Claisse and Abrami (*Bull. et Mém. Soc. Médicale des Hôpitaux*, May 18), report a case of tuberculous meningitis, verified by inoculation experiments, as well as clinically, terminating in apparent perfect recovery. They consider, therefore, that the absolutely fatal prognosis of this disease must be somewhat modified. At the following seance of the society M. M. Vaquez et Digue reported another case which, if not cured, was very greatly improved and the patient returned to his work. The inoculation, with liquid from lumbar puncture, experiments on a guinea-pig in the earlier course of the disease produced numerous tuberculous lesions and demonstrated bacilli. Six weeks later similar inoculations on two guinea-pigs failed to produce any symptoms, thus indicating that the infection was not as virulent at that time as on the former occasion.

In Memory of Carrion, the Peruvian Martyr to Science.—The local medical society of Lima, Peru, always devotes the 5th of October to the memory of Dr. Daniel Carrion. This year was the twentieth anniversary of his death, and the story of his devotion to science was again related. He was convinced that Peruvian verruga and Oroya fever were one and the same disease, although apparently so different in their manifestations. This assumption was confirmed by experiments on animals, but they did not convince the medical world. To decide the matter once for all, he inoculated himself with the virus of the verruga, and as the resulting "Oroya fever" developed he wrote a graphic record of the disease as observed in himself. Scheube regards the disease as a severe form of yaws, modified perhaps by the high altitude of the regions in South America where only it occurs, and possibly by malaria.

Poisoning by External Application of Resorcinol.—Kaiser (*Therap. Monatsh.*, October, 1905, p. 540), reports a case in which a patient affected with lupus vulgaris was ordered to apply to the back a resorcinol plaster, 600 sq. cm. (about 10 inches square). Two days later an application was made of 100 gm. (about 3 ounces) of a 50 per cent. resorcinol-zinc oxid ointment. Very soon a severe burning pain was produced, with profuse sweating. The application was removed within an hour, by which time the patient was apparently unconscious, but shrieked furiously and had clonic spasms. The pulse and respiration were much accelerated. These conditions lasted ten minutes, when opisthotonos supervened. Spasms and relaxations occurred every twenty or thirty seconds. After the fortieth spasm the patient went into a quiet unconscious state. In about an hour from the beginning of the convulsive state, the pulse and respirations improved, the reflexes reappeared, and consciousness slowly returned. The urine, voided three

and one-half hours after the application of the paste, was greenish and soon became black on exposure to air. Phenol was detected, but no albumin. In a few days the patient apparently had fully recovered.

Arsenic in Diabetes.—H. Verdaile (*Arch. Gén. de Méd.* No. 23, June 6), concludes, from a series of clinical observations which he publishes, that treatment of diabetes by arsenical chlorinated soda water is very effective, most so in the hyperhepatic form described by Gilbert. It affects both the glycosuria and the urea output, the former often disappearing entirely and the latter tending to return to the normal figure. The other elements of the urine are hardly affected. The general condition is markedly and durably improved and sometimes cure is complete. In every form of diabetes this amelioration is pronounced, and in no case did he observe any accidents imputable to the treatments.

Poisoning by Atoxyl (Arseno-anilid).—Bornemann (*Munch. med. Wochsft.*, No. 22, p. 1043), reports the case of a patient suffering from a widely-diffused lichen ruber planus, who was treated by local application of a tar-sulphur ointment and injection of a 20 per cent. solution of atoxyl, beginning with 0.5 c.c. (7.5 minims) and increasing to 2 c.c. (30 minims). The injections were repeated three times a week. The first symptoms appeared after the treatment had continued for two months. They were debility, cardiac weakness, dryness of the throat and enteritis. The patient interrupted the treatment for a short time and then began to use 1 c.c. (15 minims) of the remedy twice a week. In the course of three weeks the following symptoms were manifested: Partial deafness, buzzing noises, burning sensation in the feet at night, mist before the eyes, diminished vision and, finally, amaurosis. The dose was increased to 2 c.c. (30 minims) three times a week, when swelling of the hands, feet and face occurred. After a total of 27 grams of atoxyl had been taken in the course of three months the patient was removed to a hospital and the drug entirely suspended. By the application of zinc ointment the edema was reduced, and the original affection (lichen) cured by the employment of salicylated vaselin, chrysarobin, carbolsulphate and, finally, by the use of x-rays. The amaurosis remained. The ophthalmoscope showed atrophy of the optic nerve. A sensation to light was all that could be perceived, but the pupils reacted well.

Official Medical Fees in Case of Industrial Accidents in France.—*The Presse Médicale* of October 25 gives the full text of the new decree regulating the fees for medical attendance for workmen injured while at work. The patient is allowed to choose his own physician and druggist, but the proprietor of the industrial establishment is not held responsible for a sum above the fees officially established. These fees are 40 cents (2 francs) for each visit to the house when the patient is unable to come to the doctor's office or it is inconvenient for any reason. This fee is increased to 50 cents at places where the usual fee was this amount or more before 1901; in small places of less than 5,000 inhabitants it is reduced to 30 cents. This fee is reduced by 10 cents when the patient goes to the doctor's office. It includes the price of a simple dressing or aseptic bandage. The fee is doubled when the doctor's visit has to be made at a specified hour, and tripled when it is required between 9 p. m. and 6 a. m. When the visit has to be followed by prolonged oversight in the eventuality of complications threatening life, each additional half-hour, to a maximum of five, is counted as a separate visit. Mileage is also allowed the physician when the visit has to be made at a specified hour or at a place where the physician has no regular office, the amount ranging from 20 centimes per kilometer by railroad to 40 centimes by other conveyance (this is about 7 to 14 cents a mile). A special fee of 40 cents is allowed for the first medical certificate, or, in case the lesions are multiple, the fee may be \$1. The same amount is allowed, also, for the final descriptive certificate when the patient is dismissed.

The rates for dressings and for minor operations are given as corresponding to the fee for one visit for pulling a tooth, massaging a hand or foot, etc., up to a fee as for ten visits for general anesthesia, puncture of a cavity, allowed or not by injections, reduction of luxations not yielding to gentle measures (wrist, lower jaw and knee), reduction of simple fractures of body of humerus, forearm, radius or clavicle, reduction of simple fracture of the lower jaw, amputation of a finger or toe, and extirpation of a

hematoma, encysted foreign body or small inflamed bursa. The fees for more extensive surgical operations are graduated as follows: For vaginal hematocle, reduction of fractures of the fibula and for ligature of the radial, ulnar, facial or temporal artery, the fee is from \$4 to \$7 according to the local rate for visits. For curetting the uterus; tenotomy with suture of the superficial tendon of wrist, ankle, hand or foot; perineorrhaphy not including the sphincter of the anus; simple trephining of the skull; reduction of fractures of wrist or bones of face in or near a joint, the fee ranges from \$5 to \$8, according to the local rate for visits. The fee for vaginal operation is \$1 for external or internal urethrotomy; uncomplicated traumatic macerations of the fingers of the carpus, wrist, ankle, foot, knee or elbow; for ligature of the tibial or peroneal, popliteal, femoral, lingual, carotid, palmar or plantar arteries, and for simple empyema. The fee is \$8, \$11 or \$15, according to the local visit rate, for reduction of a fracture of the body of femur or tibia, knee, ankle, patella, spine or pelvis; amputation of the arm; ligature of the subclavian or axillary arteries. The fee is \$12, \$15 or \$20 for uncomplicated tracheotomy or celiotomy operation on kidney, injury to stomach of the organ; reduction of fracture of both bones of the leg; arthrotrotomy of shoulder or hip joint; disarticulation of the foot or ankle, knee or elbow; amputation of the forearm, or leg and for exploratory laparotomy. The fee for disarticulation of the shoulder or ligature of the external iliac is \$15, \$20 or \$26, according to the local visit rate. For disarticulation of the hip or amputation of the thigh the fee is \$22, \$30 or \$40. A sliding scale of fees is given for the following operations: amputation of the scapula and scapula bone, \$5 to \$8; evulsion and trephining bone, \$5 to \$8; cutting and suturing nerves and tendons aside from those mentioned in the first sections of the decree, \$8 to \$15; retroterine hematocle, \$8 to \$15; reduction of fractures of the radius, \$8 to \$15; reduction of luxations requiring apparatus or force, \$8 to \$15; large phlegmons and deep abscesses, \$11 to \$15; empyema requiring resection of ribs, \$11 to \$20; autoplastie operations, \$11 to \$20; reduction of fractures of the elbow, \$11 to \$20; amputation of the arm, after rupture of the uterus, \$11 to \$20; articular resections of foot, ankle, knee or elbow, \$15 to \$20; complicated tracheotomy, \$15 to \$25; laparotomy followed by operations on abdominal viscera, \$15 to \$20; celiotomy with complications (artificial anus, resection of intestine, etc.), \$15 to \$20; perineorrhaphy after resection of intestine, etc., \$15 to \$30; resection of the elbow or hip, \$15 to \$30; Eslander operation, \$20 to \$30; complicated quiring force and casts and involving elbow or hip, \$15 to \$30. The fees for specialists are also established as follows: An ophthalmologist's examination and simple dressing, 60c; removal of foreign body and dressing, \$1; removal of foreign body in cornea, with keratitis and four dressings, \$1; operation of average importance and four dressings, \$7, and serious operations, for traumatic cataract, extraction of foreign body in vitreous, of the lens, excision, excision, iridectomy, etc., and four dressings, \$15. Every dressing at a rate of the fifth is counted as a maximum of twenty dressings. The fee for examination by an ophthalmologist is \$1, including a simple dressing; thorough examination of the eye, \$2; anterior tamponing of nasal fossa, \$1; anterior posterior tamponing of nasal fossa, \$4; reduction of a foreign body in ear, nasal fossa or pharynx, without operation, 50c; removal of foreign body in larynx, by endolaryngeal route, \$4; surgical removal of foreign body in ear, nose (by the bougie or a similar operation), \$12; surgical removal of foreign body in larynx, requiring laryngotomy, tracheotomy or trephining of the mastoid process, \$15.

The account presented by the physician should include the name and address of the physician and also of the patient and of the proprietor of the factory, the date of the accident, a chronologic statement as to all the examinations, certificates, consultations, operations and circumstances which might affect the price, such as night calls, mileage, etc., and the exact denomination of the operations, according to the above tariff, with the sum total of the fees. The medical assistants during a major operation are to be paid at the rate of one-fourth of the fee allowed for the operation, the total thus allowed not to be more than half the fee, no matter how many assistants may have been present. The application of the first dressing or cast is included in the fee. In changing the French franc into dollars and cents, it has been estimated at twenty cents; in reality, it is half a cent less.

Book Notices

METHODS OF ORGANIC ANALYSIS. By H. C. Sherman, Ph.D. (1904, Pp. 245. Price, \$1.75. New York: The MacMillan Co., 1905.

The fact that the greater part of this book is devoted to quantitative methods for analysis of foods and related substances makes the work especially desirable. These methods have been taken largely from official publications and are, therefore, standard. Because of its small volume the book will be convenient.

MATERIA MEDICA AND PHARMACY. By R. W. Wilcox, M.A., M.D., LL.D. Sixth Edition. Cloth. Pp. 424. Price, \$2.50 net. Philadelphia: P. Blakiston's Son & Co., 1905.

The revision of the United States Pharmacopoeia, with many changes and additions necessitated the rewriting of this book, long so popular as "White and Wilcox," and division of the subject in two parts. There is consequently to be a second

volume to be known as "Pharmacology and Therapeutics." Since matters medicinal are now receiving much attention this well-known work will no doubt be appreciated. Its utility as a text-book, especially owing to its condensed form, has long been recognized.

CLINICAL TREATISES ON THE PATHOLOGY AND THERAPY OF DISORDERS OF METABOLISM AND NUTRITION. By C. von Noorden, Part vii. Translated by P. Buchanan, D.Sc., and L. W. Hall, M.D. (cloth, 1p. 211. Price, \$1.50. New York: E. B. Treat & Co., 1905.

This little book of 210 pages is a most interesting collection and review of recent contributions to our knowledge of this subject. It is also valuable for the commentary of its illustrious author. His own views and the results of studies coming from his laboratory are fully explained, but properly balanced in his exposition of the work of others. The symptoms and course of the disease are not considered in detail. The first 80 pages are devoted to a review of the various theories which have been propounded to account for the disease. This is undoubtedly the most interesting part of the book. The next chapter is on acetone-bodies, their source, grouping, conditions necessary for their appearance, and the dangers of acetonuria. A chapter on other changes in metabolism and three on general course and prognosis follow. The final chapter deals with treatment, and is a clear and full exposition, the author's great experience enabling him to give the details in a practical manner.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by J. A. Hare, M.D.; assisted by H. R. M. Landis, M.D., vol. IV. December, 1905. Diseases of the Digestive Tract and Allied Organs: Liver, Pancreas and Peritoneum—Anesthetics, Fractures, Dislocations, Amputations, Surgery of the Extremities and Orthopedics—Genito-Urinary Diseases—Diseases of the Kidneys—Practical Therapeutic Referendum. Paper, 1p. 337. Price, \$5.00 per annum. Philadelphia: Lea Brothers & Co., 1905.

The excellency of this volume is in keeping with those previously issued. It is written by thoroughly qualified men who have the requisite clinical experience to enable them to take from the literature all there is of practical value and present in a readily accessible and interesting manner. Dr. J. Dutton Steele writes on the diseases of the digestive tract and peritoneum; Dr. W. T. Belfield discusses genitourinary diseases; Dr. J. R. Bradford writes on the diseases of the kidneys, and Dr. J. C. Bloodgood discusses anesthetics, fractures, dislocations, amputations, surgery of the extremities and orthopedics. Under the title Practical Therapeutic Referendum, Dr. H. R. M. Landis writes on new remedies and agents used for medicinal purposes.

Queries and Minor Notes

RECIPROCITY.

To the Editor:—1. Does Georgia accept a Pennsylvania state license without further examination? 2. Whom shall I address regarding registration in Georgia? INQUIRE.

ANSWER:—Regarding both matters write to Dr. E. R. Anthony, Griffin, Ga.

State Boards of Registration

COMING EXAMINATIONS.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, January 18-20. Secretary, J. A. Egan, Springfield.

NEW YORK State Boards of Medical Examiners, Albany, January 30-February 2. Secretary, Charles P. Wheelock, Albany.

NEBRASKA State Board of Health, State House, Lincoln, February 1-8. Secretary, George H. Brash, Beatrice.

Rules Governing Reciprocity Between New York and New Jersey.

In accordance with the resolution passed at the conference held Oct. 16, 1905, between the educational and medical representatives of the states of New York and New Jersey, the committee appointed for the purpose met Nov. 11, 1905, and formulated the following rules and regulations to govern reciprocity in medical licensure between the states mentioned, on and after Jan. 1, 1906:

1. The basis on which reciprocity shall obtain between the states of New Jersey and New York shall be a license earned on examination in either one of the states.

2. A candidate for indorsement of a medical license must present credentials from the officials of the state board of medical examiners which licensed him showing that at the time of such application for indorsement he is a reputable practitioner of medicine and in good standing in the profession and in the community.

3. When an applicant presents his papers for indorsement to the board of one state and this board has reasonable doubts of the qualifications of the applicant, either personal or professional, said board shall return the certificate of indorsement, together with its reasons, to the board which issued it and ask for a reconsideration of the certification. Where an applicant presents a license issued prior to the establishment of reciprocity, the board to which the application is made may require for its consideration the original papers on which the license was granted, or a certified copy thereof. The original state license only can be indorsed by either board. No application for indorsement of other indorsements will be considered.

4. No person who has been rejected for license by the New York or the New Jersey board shall be privileged to have a license indorsed by either state unless a period of at least six months shall have elapsed since such rejection occurred. Candidates licensed by the New Jersey State Board of Medical Examiners in the years 1907, 1908 and 1909 must have five years of experience subsequent to the earning of their medical degree, before obtaining a consideration of their request by the New York authorities for the indorsement of their New Jersey licenses. This shall not apply to New Jersey graduates of the years mentioned who fully meet the requirements exacted by the New York State medical laws at that time.

5. The preliminary education required for admission to medical schools shall be the same for both states and the certification of the education department of either state as to the standards maintained by secondary schools or high schools in either state shall be accepted by the education department of the other state. The standards to be required of secondary schools and academies within the states of New York and New Jersey shall be fully equivalent to those required of the schools within those states and the schools to be registered as maintaining such equivalent standards shall be determined in joint conference between the educational departments of New York and New Jersey.

6. The recognized medical schools registered as maintaining the required standard shall be those on the "approved list" of the education department of the state of New York.

7. The board of each state shall be given by the board of each state to the examinations held by the board of the other state.

The committee also recommended that efforts be made to amend the laws of one or both states to annul a number of minor differences which at present in some instances render reciprocity difficult.

California Revocations.—The State Board of Medical Examiners recently revoked the licenses of O. C. Josselyn, H. McGregor Wilson, and L. H. Meadows (alias Weston), who were convicted in the United States District Court of sending matter regarding criminal malpractice through the mails.

Illinois October Report.—Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, Oct. 18-20, 1905. The number of subjects examined in was 16; total number of questions asked, 160; percentage required to pass, 75. The total number of candidates examined was 61, of whom 52 passed and 6 failed, including 2 not rated and 1 who withdrew. The following colleges were represented:

| College. | PASSED. | Year. | Per Cent. |
|---|--------------|--------------|--------------|
| Chicago Homeo. Med. Coll. | (1890) | 76 | |
| College of P. and S., Chicago | (1904) 83.6; | (1905) 80.4, | 85.6 |
| George Washington University | (1905) | 88.3 | |
| Hahnemann Med. Coll., Chicago | (1889) | 75 | |
| Harvard University, (1898) 77.6; | (1899) 88.2; | (1904) | 85.3 |
| Harvey Med. Coll., Chicago | (1905) | 89.7 | |
| Howard University | (1905) | 77.4 | |
| Illinois Med. Coll. | (1905) 78.1, | 79.6, | 81.5, |
| Jefferson Med. Coll., Philadelphia | (1904) | 85.3 | |
| Jenner Med. Coll., Chicago | (1905) 81.3, | 82.4, | 86.1 |
| Kentucky School of Medicine | (1905) | 80.2 | |
| Marion-Sims-Beaumont Med. Coll. (1900) 91; | (1903) 87.3; | (1904) | 81.1 |
| McGill University, Toronto | (1905) | 82.5 | |
| National Med. Coll., Chicago | (1904) 79.7; | (1905) 75.6, | 78.6, |
| Northwestern University | (1905) | 88.1 | |
| Queen's University, Kingston, Ont. (1904) 77.6; | (1905) 84.9; | (1906) 80.4; | |
| Rush Med. Coll., Chicago | (1892) 75; | (1903) 84.9; | (1904) 80.4; |
| (1905) 84.4, | 84.6, | 84.8, | 85.3, |
| 85.9, | 86.7, | 87, | 87.4, |
| 87.9, | 88, | 88.3, | 90.4, |
| 90.4, | 95. | | |
| Western Med. Coll., Ont. | (1904) | 83.1 | |
| Western Reserve Coll., Cleveland | (1897) | 79.3 | |
| University of Iowa | (1898) | 86.4 | |
| University of Louisville | (1905) | 81.5 | |
| University of Maryland | (1903) | 86.2 | |

| College. | PASSED. | Year. | Per Cent. |
|---|---------|-------|-----------|
| American Coll. of Med. and Surg., Chicago | (1905) | 70 | |
| College of P. and S., Keokuk | (1884) | 46.1 | |
| Eclectic Med. Inst., Cincinnati | (1903) | 73 | |
| Illinois Med. Coll., Chicago | (1905) | 70.6 | |
| Jenner Med. Coll., Chicago | (1905) | 74.6 | |
| Keokuk Med. Coll. P. and S., Chicago | (1905) | 67 | |

Missouri.—At the examination held by the State Board of Health at Kansas City, Dec. 19-21, 1905, the following questions were asked:

ANATOMY.
1. Describe the stomach. 2. Describe the liver. 3. Describe the pancreas. 4. Name the so-called ductless glands. 5. Describe the spleen. 6. Describe the thyroid gland. 7. What is the abdomen? 8. Name the boundaries of the abdomen. 9. Name the regions of the abdomen. 10. What parts are included in each region?

The Public Service

PHYSIOLOGY.

1. What is the function of the cerebellum? 2. How many refracting surfaces does a ray of light pass through on its way to the retina? What are they? 3. What is the office of the spleen? 4. Give steps in digestion of proteids. 5. Give fetal circulation.

CHEMISTRY.

1. What is a molecule? 2. What is an element, and how many are there? Give illustration. 3. What would be antidotes for combined antimal and strychnine poisoning? 4. Give difference between chronic and acute form of lead poisoning. What are the sources of each? 5. Give (chemically) steps in manufacture of alcohol. 6. Give chemistry of respiration. 7. What is the chemical composition of milk? 8. Give antidote for phosphorus; also treatment for phosphorus poisoning. 9. Give properties of hydrogen gas. 10. What are the constituents of urine? Give normal specific gravity.

BACTERIOLOGY.

1. Describe *Bacillus pseudotuberculosis*. 2. Give description of Lustgarten's bacillus. 3. Differentiate (bacteriologically) between diphtheria and follicular tonsillitis. 4. What is the method ordinarily used in detecting zoonocoe? Also culture characteristics. 5. What is a mixed infection? Give example.

PATHOLOGY.

1. Give the structural changes that occur in tuberculous joints. 2. Describe the blood changes in pernicious anemia. 3. Give the pathology of the second and third stages of lobar pneumonia. 4. Discuss cheesy degeneration. 5. Discuss metastatic abscess formation.

MEDICAL PRACTICE.

1. Locate the (normal) apex beat of the heart. 2. What conditions increase the area of heart dullness? 3. Describe and locate the pain in (a) appendicitis, (b) renal calculus, (c) gallstones. 4. Give some of the chief characteristics that differentiate an acute from a chronic form of disease. 5. What is collapse? Mention two frequent conditions in typhoid fever that are attended with collapse and indicate treatment in each instance. 6. Describe (a) an intermittent pulse, (b) an irregular pulse. 7. 8. 9 and 10. Give a brief description of each of the following diseases, embracing etiology, symptoms and general management: typhoid fever, tetanus, empyema, cystitis.

SURGERY.

1. Define shock and how you would treat it? 2. How would you treat a fracture of the shaft of the femur? 3. How would you treat a Colles' fracture? Describe fracture and treatment fully. 4. Describe an operation for popliteal aneurism. 5. Give symptoms for stone in the bladder of a male. How would you treat it? 6. Give the method and mode of adopt to remove a kidney. 8. Name the luxations of the shoulder joint; symptoms of each and how reduced. 9. Describe erysipelas: (a) simple; (b) phlegmonous, and treatment. 10. How would you perform external perineal urethrotomy?

OBSTETRICS.

1. Name all the female reproductive organs. 2. Describe the uterus, and give its nerve and blood supply. 3. Name all the signs of pregnancy at the end of second month. What is Braxton-Hick's sign? 4. Name some of the more important diseases of the fetus in utero. 5. What is ballottement? When is it available and how is it performed? 6. How many vertex presentations can we have? Tell how to make the diagnosis in vertex presentations. 7. What is cephalic version? When is it necessary and how is it performed? 8. What is an impacted breech presentation? Give diagnosis and explain method of delivery. 9. Under what circumstances would you suggest podalic version? How is it performed? 10. Describe in full your management of (a) normal labor; (a) as relates to mother; (b) as relates to child.

GYNECOLOGY.

1. What is subinvolution? Give the results of subinvolution of the uterus. What is its treatment? 2. When is intrauterine irritation justifiable? Describe the technique of its use. 3. When is ventrofixation of the uterus justifiable? Describe the operation. 4. Give the etiology, symptoms, causes and give treatment. 5. Define (a) anemia and give treatment, (b) chlorosis and give treatment.

THERAPEUTICS.

1. What causes autotoxemia? Give treatment. 2. What is nocturnal sweating? Give treatment. 3. Give physical signs and treatment of pericarditis. 4. Give therapeutics of acetic acid. 5. Define anthrax. Give its etiology and treatment. 6. Define styptics and hemostatics. Mention two of each. 7. Mention the sequelae of influenza or grip. Give treatment. 8. Give symptoms and treatment of acute pleurisy. 9. Give treatment of a case of renal colic. 10. Give treatment of a case of acute gout.

HYGIENE.

1. What are the elementary principles necessary to man's existence? 2. What is the physiologic effect of alcohol (a) on the nerve centers; (b) on the elements of life? 3. Why is it necessary to possess a knowledge of the physical and chemical condition of soil? 4. What is the distinction between non-putrefactive decomposition or decay and putrefaction? 5. How do disease germs produce their characteristic effects on the system?

MEDICAL JURISPRUDENCE.

1. What are the symptoms of poisoning by wood alcohol? 2. How would you distinguish between a male and a female skeleton? 3. Differentiate between infantile paralysis and idiocy. 4. What mental conditions render a testator incapable of making a will? 5. What is pederasty?

New Secretary in Ohio.—The new secretary of the Ohio State Board of Medical Registration and Examination, Dr. David N. Kinsman, Columbus, assumed his new office January 1.

Illegal Practitioner in Wisconsin.—The Wisconsin State Board of Medical Examiners has caused the arrest of Dr. J. L. Barber of Kaukauna for practicing medicine without a license. The complaint was that Barber purchased his diploma for \$25 from the Illinois Health University of Chicago.

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending January 6, 1906:

- Manly, C. J., asst.-surgeon, leave of absence extended thirty days.
- Mahee, James I., asst.-surgeon, assigned to duty at surgeon of the transport *Sheridan* during the next voyage to Manila.
- Greenleaf, Henry S., asst.-surgeon, assigned to duty as surgeon of the transport *Sheridan* during the next voyage to Manila.
- Reynolds, F. P., surgeon, ordered to Headquarters Department of the Columbia, Vancouver Barracks, Washington, for temporary duty as acting chief surgeon.
- Collin, J. M., asst.-surgeon, leave of absence extended fifteen days.
- Talbot, E. M., asst.-surgeon, leave of absence extended thirty days.
- Leavis, Wm. B., deputy surgeon general, leave of absence extended two months.
- Brooks, Wm. H., asst.-surgeon, advanced from grade of first lieutenant to that of captain January 1, 1906.
- Page, Henry, asst.-surgeon, relieved from duty in Philippines Division about March 5, 1905, and will proceed to San Francisco, Cal., where he will report to the Military Secretary for further orders.
- Williams, A. W., asst.-surgeon, assigned to duty as surgeon of the U. S. Army transport *Meade* during the next voyage to Manila.
- Kuhn, Charles F., contract surgeon, returned to Fort Lawton, Washington, from leave of absence, ordered to Fort William H. Seward, Alaska, for temporary duty.
- Rietz, Hugo C., dental surgeon, granted leave of absence for twelve days from Fort Sheridan, Ill.
- Bernheim, Julien R., dental surgeon, left Fort Porter, N. Y., for Plattsmouth Barracks, N. Y., for duty.
- Henderson, John L., contract surgeon, left Fort Sam Houston, Texas, on leave of absence for ten days.
- Carpenter, Alden, dental surgeon, left Fort Flagler, Washington, and arrived at Vancouver Barracks, Washington, for duty.
- Daywalt, George W., contract surgeon, reported for duty at his new station, Fort De Soto, Fla., after leave of absence.
- Wertebaker, Clark I., contract surgeon, left Madison Barracks, N. Y., on leave of absence for one month.
- Henderson, John L., contract surgeon, relieved from further duty in the Philippines Division, and ordered to Fort Moultrie, S. C., for duty, at the expiration of his present leave of absence.
- Jones, George H., contract surgeon, ordered to Fort Moultrie, S. C., for duty, at the expiration of his present leave of absence.
- Smith, George H., contract surgeon, ordered to Fort Moultrie, S. C., revoked: at expiration of present sick leave of absence, will proceed home, Toledo, Ohio, for annulment of contract.
- Piquard, Joseph, contract surgeon, left Fort Leavenworth, Kan., on leave of absence for ten days.

Navy Changes.

Changes in the Medical Corps U. S. Navy, for the week ending January 6:

- Campbell, R. A., acting asst.-surgeon, appointed acting assistant surgeon from January 9.
- Hart, G. G., acting asst.-surgeon, appointed acting assistant surgeon from January 10.
- Block, W. H., acting asst.-surgeon, appointed acting assistant surgeon from January 12.
- Henderson, C. G., medical inspector, having been examined by a retiring board and found incapacitated for active service on account of disability incident thereto, is retired from active service, from December 15, 1905, under provision of Section 1453, Revised Statutes.
- Murphy, J. F., asst.-surgeon, ordered to the naval recruiting station, Omaha.
- Miller, C. K., acting asst.-surgeon, detached from the naval recruiting station, Omaha, Jan. 24, and ordered to the naval hospital, Washington.
- Miller, J. T., acting asst.-surgeon, appointed acting assistant surgeon from January 9.
- Schekel, L. O., pharmacist, appointed pharmacist December 27, 1905.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending January 3:

- Wilson, K. L., P. A. surgeon, bureau letter of Dec. 1, 1905, granting P. A. Surgeon Wilson fifteen days' leave of absence answered Jan. 3.
- Wahl, C. K., asst.-surgeon, leave only.
- Berry, T. D., P. A. surgeon, directed to proceed to Tampa Bay quarantine, Mullet Key, Fla., and assume command of the service, relieving Asst.-Surgeon K. E. Ebersole.
- Lloyd, B. J., asst.-surgeon, assigned to duty in the office of the United States consulate at Guayaquil, Ecuador.
- Wrightman, W. M., asst.-surgeon, relieved from duty at San Francisco Quarantine Station, and directed to proceed to Callao, Peru, for duty in the office of the United States Consulate.
- Neves, R., acting asst.-surgeon, granted three days' leave of absence from Dec. 26, 1905, under Paragraph 210, Regulations.
- Neves, George, pharmacist, granted leave of absence for nineteen days from Jan. 1, 1906.

BOARD CONVENED.

A board of officers was to meet at the Bureau, Dec. 28, 1905, for the purpose of making a physical examination of an officer of the Revenue Cutter Service. Detail for the board: Asst.-Surgeon-General J. W. Kerr, Chairman; Asst.-Surgeon J. W. Trask, Recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended January 6:

SMALLPOX—UNITED STATES.

California: San Francisco, Dec. 16-23, 3 cases.
Florida: Jacksonville, Dec. 23-30, 5 cases.
Kentucky: Covington, Dec. 23-30, 1 case.
Louisiana: New Orleans, Dec. 23-30, 6 cases; Shreveport, 1 case.
Maryland: Baltimore, Dec. 23-30, 11 cases.
Missouri: St. Louis, Dec. 23-30, 1 case.
New York: Niagara Falls, Dec. 23-30, 1 case.
Ohio: Dayton, Dec. 23-30, 1 case.
Pennsylvania: Lancaster, Dec. 2-9, 1 case.
Wisconsin: Milwaukee, Dec. 2-9, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, Nov. 11-18, 2 cases.
Chile: Antofagasta, Nov. 12-26, 42 cases, 9 deaths; Coquimbo, Nov. 9-23, 15 cases, 4 deaths; Iquique, Nov. 26-Dec. 2, 10 cases, 6 deaths; Valparaiso, Nov. 15-22, 100 cases, 25 deaths.
China: Shanghai, Nov. 30, present.
France: Paris, Dec. 2-16, 48 cases, 5 deaths.
Gibraltar: Dec. 10-17, 1 case.
Great Britain and Ireland: Drogheda, Dec. 2-9, 1 case; Hull, 4 cases.

India: Bombay, Nov. 28-Dec. 5, 1 death; Calcutta, Nov. 18-25, 4 deaths; Karachi, Nov. 26-Dec. 3, 1 case; Madras, Nov. 25-Dec. 1, 7 cases.
Italy: General, Nov. 30-Dec. 14, 36 cases; Catania, Dec. 7-14, 1 death.
Mexico: Tuxpam, Dec. 19-26, 2 deaths.
Russia: Odessa, Dec. 2-9, 12 cases, 7 deaths; St. Petersburg, Nov. 18-Dec. 2, 7 cases.
Spain: Cadix, Nov. 1-30, 1 death; Santander, Dec. 10-17, 4 cases; Seville, Nov. 1-30, 1 death.

YELLOW FEVER.

Cuba: Habana, Dec. 27-29, 2 cases, 1 death.
Mexico: Merida, Dec. 17-23, 1 case, 1 death.
Panama: Colon, Dec. 7-14, 1 case.

CHOLERA—INSULAR.

Philippine Islands: Manila, Nov. 31-18, 8 cases, 10 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Nov. 18-25, 86 deaths; Madras, Nov. 25-Dec. 1, 6 deaths.
Russia: Government of Lomza, Nov. 23-Dec. 6, 12 cases, 3 deaths; Government of Siedlen, Nov. 20-26, 7 cases, 2 deaths.

PLAGUE—FOREIGN.

Africa: Cape Colony, Port Elizabeth, Nov. 11-18, 1 case.
China: Hongkong, Nov. 18-25, 1 case, 1 death; Niuschwang, Nov. 30, present.
Japan: Fomosa, Nov. 1-30, 2 cases, 2 deaths.
India: General, Oct. 28-Nov. 4, 4,356 cases, 3,090 deaths; Bombay, Nov. 28-Dec. 5, 7 deaths; Calcutta, Nov. 18-25, 22 deaths.
Peru: Antofagasta, Nov. 12-26, 9 cases, 5 deaths.

Medical Organization

What Can the County Society Do?

(Continued from page 61.)

II. MEETINGS TO WHICH THE PUBLIC IS INVITED.

A number of societies have of late derived great benefit from meetings to which were invited the lawyers, the ministers, public officials, the women, or the public in general. At the meetings arranged for Dr. McCormack in Texas and other states this plan has frequently been followed. The public should know of every reason for the organization of the medical profession. There is nothing to conceal. The objects are all, either directly or indirectly, calculated to promote the public welfare. It is wise to take the public fully into our confidence. Physicians are not combining to raise fees or to take advantage of the layman. The public should be taught at these meetings that good medical fees mean good physicians. When the physician is well paid his *clientele* should insist that he continue his medical education by some form of postgraduate work occasionally. If the fees are too small the physician can not pursue his studies adequately.

At such meetings—and several can be profitably held during a year—another pertinent topic would be a full discussion of patent medicines, their evils and dangers. The material gathered by *THE JOURNAL*, the Council on Pharmacy and Chemistry, by *Collier's* and other lay journals can be drawn on for papers to open the discussion. Meetings of this sort, including appeals to the public to aid in securing the passage of good pure food and drug laws, would be timely this winter just as soon as they can be arranged. At such meetings there can be reference to the plan to have a federal department of health and really effective state sanitary organizations. Epidemics can profitably be considered, especially with reference to modes of conveyance of infections. There is hardly a community in which water supply would not be a timely subject,

and everywhere there is need to spread our knowledge of the benefits of scientific ventilation of houses and of the surpassing value of fresh air. Few physicians are yet prepared to discuss cooking in a way to impart needed information, but wherever there is one he can do a world of good, and it is certain that physicians are to be compelled to study methods of cooking and of preparing all manner of foods if they are to come up to the new standards of usefulness.

At one such joint meeting it will in most places be beneficial to consider at length the subject of medical ethics. The public will welcome information as to the relations of medical men to each other and to the public. Other topics will suggest themselves. It is important to note that if the society, through its "Committee on Relations with the Press," has previously brought the editors to sympathize with its purposes, these public meetings will have an extended influence through the reports of them that the papers will gladly publish if considerably approached.

III. PROPRIETARY MEDICINES.

An important and timely subject of discussion is that of proprietary medicines, their hidden composition, and the fraudulent claims made for them. A good text for the discussion would be a sentence by Samuel Hopkins Adams in one of his *Collier's* articles: "Ignorance and credulous hope make the market for most proprietary remedies." He wrote of the public and of patent medicines, but recent exposures in *THE JOURNAL* show that the observation finds only too ready application to the medical profession. In each society there should be full discussion of remedies whose real formulas are concealed and which physicians are asked to prescribe because some one says they are good. The opening paper might recount the work of the Council on Pharmacy and Chemistry on the acetanilid compounds and Mr. Adams' record of the dangers of their use. The discussion would naturally include reference to the misleading "literature" of proprietary manufacturers.

Of course, the practical object of such a meeting would be the arousing of a strong sentiment against prescribing drugs that are fraudulent or that are "boosted" by false claims. Agreement should be reached to refuse to prescribe any remedies that are anywhere advertised to the public or preparations whose container or wrapper contains full directions for the public's use.

As a co-ordinate topic one member might present a paper on methods of writing prescriptions of simple pharmacopoeial remedies that will fully meet all the indications of the proprietary articles and of the various imitations of them that crowd the market.

(To be continued.)

Society Proceedings

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, held in Kansas City, Mo., Dec. 28-29, 1905.

The President, DR. H. D. NILES, Salt Lake City, Utah, in the Chair.

Officers.

The following officers were elected for the ensuing year: President, Dr. Malcolm L. Harris, Chicago; first vice-pres., Dr. A. L. Wright, Carroll, Iowa; second vice-pres., Dr. C. Lester Hall, Kansas City, Mo.; secretary-treasurer, Dr. Arthur T. Mann, Minneapolis, Minn.

Salt Lake City, Utah, was selected as the place for the next annual meeting.

Transvesical Operation for Prostatism in Aged Males.

DR. CHARLES E. BOWERS, Wichita, Kan., said that more conservative and rational operations on these patients would yield better results and lower the mortality per cent. An exact diagnosis in many cases can only be made on suprapubic exposure of the vesical outlet. The suprapubic operation can be done with greater exactness and will yield better results than the infrapubic in morbid conditions in the male, as has been

the case in the female pelvis. The suprapubic route is as rationally indicated for the relief of prostatic obstruction at the urinary outlet as it is in vesical calculus. The perineal operation offers only 30 per cent. of cures, with a mortality of 7 per cent., and a 50 per cent. chance of having exchanged one urinary difficulty for another, and not infrequently a lesser for a greater one. The transvesical operation entirely relieves all who survive it of their urinary trouble, if it is due to obstruction in and about the vesical outlet, except when they are carcinomatous in character, without sequelæ, and with the improved operative technic of to-day no greater mortality.

DISCUSSION.

DR. HENRY T. BYFORD, Chicago, thinks hypertrophy of the prostate is due to some irritation; that it can not come entirely from age alone or from sclerotic changes which occur with age. In some cases of enlarged prostate he thinks there is a gouty diathesis, and that, perhaps, the treatment recommended by Fletcher, reducing the calories from 3,000 to 1,500 and dieting the patient a little, might obviate the necessity of suprapubic cystotomy in some cases.

DR. JAMES E. MOORE, Minneapolis, did his first prostatectomy suprapubically twenty years ago, and as it was done at that time it was a bloody, blind and unsatisfactory operation. When perineal prostatectomy was suggested and practiced so successfully a few years ago, he took it up and has been advocating it ever since. He maintains that there are certain cases that can be operated better by the suprapubic route as it is done at the present time. However, in his judgment, a surgeon is not broad-gauged, he does not do the best work he can do, until he performs both operations. He believes the perineal route is the choice in the vast majority of cases.

DR. W. W. GRANT, Denver, maintains that in the average case the perineal operation is the more suitable one. In cases in which there is pus, hyaline and granular casts the perineal route is indicated. The dirty cases can be better and more safely operated through the perineum; the clean cases by suprapubic cystotomy by modern methods.

DR. J. W. ANDREWS, Mankato, Minn., believes there are selected cases which should be operated by the transvesical route, but in the majority of instances he thinks the perineal route is the better. He has operated 11 times, with one death. One of the operations was done suprapubically. He found it difficult, unclean, and was unable to get good drainage. Lack of drainage is one objection to the suprapubic route, as it is not and could not be as good as it is through the perineum.

DR. M. L. HARRIS, Chicago, said that when one attempts to generalize from a few cases in surgery, the generalizations are always wrong. The essayist generalized from 12 cases that the suprapubic route is the only one to adopt, consequently he thinks he is wrong. There are many cases in which a good and thorough operation can not be done suprapubically. There are also many cases in which the best operations can only be done suprapubically; consequently, the surgeon must select the best operation for the particular case. Every case of prostatism should be diagnosed accurately before an attempt is made to select the method of operation, and the surgeon can only make such a diagnosis when he employs all the means at his command, and one of these is a thorough cystoscopic examination.

Observations on Renal Surgery.

DR. D. W. BASHAM, Wichita, Kan., said the methods of Jacobson and Edenhöls, give permanent results, so far as anchoring the kidney is concerned, but the kidney is fixed too low in the loin, too far from the center of the vertebral column, and too near the anterior wall of the abdomen. There are many operations which anchor the kidney permanently, but which are open to objection from the standpoint that the organ is not held in the natural position. Surgeons do too many nephropexies without making a thorough and painstaking effort to ascertain the conditions of the kidney, its pelvis and the upper part of the ureter.

DISCUSSION.

DR. WILLIAM JEPSON, Sioux City, Iowa, believes there exists a range of mobility of nearly an inch by every kidney that is normally placed. Each case of movable kidney has to

be considered by itself. A certain number of them have to be fixed. He is not a firm believer in decapsulation of the kidney, for the reason that it has been demonstrated experimentally that if a kidney is decapsulated a new capsule is formed in the course of three or four months, and the amount of blood supply the kidney receives from the new source during the time it exists is not sufficient probably to maintain vitality.

DR. A. W. ABBOTT, Minneapolis, Minn., said that in a series of over 2,000 examinations only a very small number of kidneys were felt beyond the limits described in text-books, but this is not in accord with clinical experience. Very few of these patients present any symptoms referable to the position of their kidneys, largely due to the fact, he believes, that the upper part of the ureter falls with the falling of the kidney.

DR. C. W. OVIATT, Oshkosh, Wis., said that occasionally it is necessary to operate on cases of movable kidney. If an operation is undertaken, surgeons should profit by the teaching of Harris of obliterating the space beneath the kidney rather than trying to suspend the organ alone either by the fibrous or fatty capsule. If one simply suspends it, undoubtedly there will be a recurrence of the displacement.

DR. A. E. BENJAMIN, Minneapolis, laid down rules for fixing the kidney. One is, when it shows evidence of hydronephrosis due to a faulty position of the kidney or to a faulty position or kinking of the ureter, fix but do not allow free drainage. Another is, where there is an enlarged kidney, congested or dilated, and where it is tender, fix the kidney. Another condition which calls for fixation is where the kidney seems to produce obstruction of the alimentary canal, either of the colon or duodenum and accessory organs, such as gall-bladder apparatus, the common bile duct, etc. In such cases the kidney is prolapsed, adherent down in the pelvis, and the patients are troubled with obstipation, and by putting the kidney in position and relieving the adhesions the symptoms will partially or entirely disappear. Patients with a dilated condition of the stomach and a diseased condition of the gall bladder, when apparently due to loose kidney, are sometimes benefited if their cases are taken early.

Carcinoma of Descending Colon.

DR. W. W. GRANT, Denver, said that the rectum is the most frequent seat of intestinal cancer. The descending colon is next in order. Cancer of the colon is more common in men; it is not common under 30 years of age. It is primary and circumscribed. Metastasis and constriction are late occurrences. Chronic indigestion, occasional diarrhea and mucous discharges are suspicious symptoms. Ulceration is a late occurrence. Floating kidney and membranous colitis may exist a long time without producing marked symptoms or seriously disturbing the health. It is less malignant than the same disease of the stomach or rectum. It is not painful until late. Stenosis is not attended with striking symptoms until obstruction is complete. Mild malignancy and late infection demand radical operation. More care is necessary in examination at an early period, in order to detect disease.

DISCUSSION.

DR. I. B. PERKINS, Denver, narrated the case of a woman, 62 years of age, in whom there was a tumor in the region of the cecum, supposed by the physician who had charge of the case to be an appendiceal abscess. It was very hard. There was vomiting of fecal matter and had been for twenty-four hours. He made a long incision in the right rectus, and on examination found a hard tumor, but no pus. The appendix was caught in the mass, also the ileocecal valve and a portion of the cecum. He resected the intestine and closed the end of the colon by the Connell suture, then implanted the ileum into the upper portion of the wound. The patient did well, except that there was a slight leakage at the outer and upper portion of the anastomosis and a very small fecal fistula.

DR. A. W. ABBOTT, Minneapolis, has seen three cases of intussusception. He thinks intussusception occurs in cancer of the large intestine oftener than in the small. He has never seen a case in the small intestine, but has no doubt it may occur. He thinks it is wrong to make an immediate anastomosis in these cases. A colostomy should first be made, be-

cause the condition about the cancerous area is so extreme that the parts will not unite if one attempts to sew them.

DR. J. E. SUMMERS, Omaha, said that he had found cancer everywhere in the large intestine, except at the hepatic flexure. In dealing with carcinoma of the transverse colon it is necessary to manipulate the gastrocolic omentum, and unless this is done with the greatest gentleness one is apt to have a complication following the operation which may be serious, namely, hemorrhage into the stomach. His attention was first directed to this complication some years ago following an operation for incarcerated umbilical hernia, in which it was necessary to remove considerable portions of the omentum, and the manipulations were rather rough. The operation was proceeded with without any special difficulty, but it was followed in two hours by profuse hemorrhage from the stomach, from which the patient died.

Choice of Ligature and Suture Material in the Surgery of the Peritoneum.

DR. H. G. WETHERILL, Denver, no longer uses non-absorbable ligature or suture material for purely serous surfaces. The absolute sterilization of catgut is no longer difficult, and it is now realized that so-called catgut infections usually have their origin in a contamination of the gut through handling or in allowing it to come in contact with unclean surfaces or substances in or about the wound. The chronicizing process prolongs the life of even the smaller strands to any desired time, providing the mucous surfaces or secretions are not in contact with it. These features make of catgut an ideal suture and ligature material for intraperitoneal use, and all that becomes necessary is the exercise of due care and skill in the selection of the catgut and the application of sutures and ligatures and the making of knots. So far he has never had a secondary hemorrhage or other accident from the use of catgut, either in the way of a slipping knot or a too rapid absorption, and he believes this immunity from accident to have been due to the exercise of extreme care in its application.

For about three years he has had great satisfaction in using the Downes electro-thermic cautery clamp in selected cases, thus doing away with all ligature and suture materials around pedicles. For vaginal hysterectomy, particularly in cancer of the uterus, it is ideal. It promotes rapidity and safety in the work, and gives much greater security against the danger of recurrence in early cases. Patients operated on with the Downes clamp by either the vaginal or abdominal route have smoother and more rapid recoveries, and noticeable freedom from the intense pain and backache so common after all pelvic operations when the terminal nerves of this region are left for days or weeks in the light of a securely tied ligature or closely applied suture. He has had one or two experiences with the Downes clamp, however, which lead him to believe that there is increased danger from thrombosis and embolism after its use, occurring occasionally several weeks after operation, and until this doubt is settled he would exercise great care in the selection of the cases on which it is to be used.

A New Technic for Breast Amputation.

DR. JABEZ N. JACKSON, Kansas City, Mo., described a new technic for use in radical operation for carcinoma of the breast. His experience is limited to eight cases. He emphasizes the following advantages: (1) The flap forms a covering for the chest defect, as a rule, without any tension, and thus almost entirely obviates the necessity of grafting, which is so frequent in other methods. He has not found any case operated on by his method that requires grafting. This is not intended to cover cases where there has been extensive previous ulceration or where one can not get healthy tissue for a flap of any character. (2) The drawing of the skin up to the arm does away with the fossa axillaris, and thus with the large space which nature would have to obliterate by the formation of scar tissue with the resultant pressure on the axillary vessels and nerves. (3) The ligation of all vessels at their nearest point of origin does away with the use of a large number of hemostatic forceps, which cause loss of time, to say nothing of the inconvenience of having a large number of instruments in one's way. He has in no instance used more than one dozen forceps in this operation, and can

usually do the work with about six. The operation is thus shortened, so that, as a rule, he finds that to complete it requires from forty minutes to one hour or thereabouts. In fact, personally, he has never run beyond one hour, even doing the operation slowly, as he has in most cases, for the purpose of demonstrating this new technic, and he has done the operation in a period of time as short as forty minutes. (4) The most noticeable feature to the onlooker, when the operation is done, is the marked absence of hemorrhage, so that it can almost be called a bloodless operation. (5) The entire technical portion of the operation is completed before the chest is exposed by the removal of the breast; therefore, long exposure of an enormous area of raw chest surface, with the attendant shock, is done away with. As soon as the breast is removed, the surgeon is ready to close the wound.

Fractures About the Elbow Joint.

DR. W. D. HAINES, Cincinnati, Ohio, said that the open method of treatment is to be commended in all cases of extensive joint involvement. After freely exploring the joint cavity, freeing it from clot, removing detached spicula, and fixing the fractured fragments, a strip of fascia from the arm may be inserted between the joint surfaces after the method of Murphy in excision, or the Mosetig bone filling may be used, with a view to preventing adhesions until sufficient repair has taken place to permit of passive motion. The operation is completed by suturing the capsule, fascia, nerves and skin with ample provision for drainage. The arm should be dressed in the fully extended position, placed on an incline and a light weight applied. This position and dressing should be changed at the end of one week. After light massage the arm is redressed at a slight angle, and permitted to remain for four or five days, when it is changed to as nearly a right angle as possible without pain to the patient too severely. Subsequent treatment consists of massage and passive motion every third day for a period of three weeks. The author gives precedence to local pain and tenderness over crepitus in diagnosis. The use of weights to overcome muscular rigidity permits of infiltration, diminished elasticity, interfering rather than assisting in the reduction of these fractures. The proper treatment of pain and swelling accompanying fracture is early reduction and the application of extension, i.e., or other adjuncts deemed advisable. Immediate amputation is reserved for those extensive crushing injuries, such as bumper wounds, in which the circulation and joint are so badly damaged as to be beyond all hope of repair. The author expressed the opinion that fractures about the elbow joint have been over-treated in the past.

Treatment of Varicose Veins.

DR. C. H. MAYO, Rochester, Minn., said that the various operations in use at the present time are necessary from the diverse conditions and symptoms manifested by the disease. The condition is probably from a defect in the vein walls, valves or enervation. The Trendelenburg operation is deservedly popular, especially for cases of vicious venous circle of the deep and superficial veins of the thigh. Enucleation of the veins in a subcutaneous manner through several short incisions is a satisfactory treatment for the majority of cases. The subcutaneous removal of the internal saphenous from above at the side of and below the knee, by destroying the main superficial channel and deep communicating branches, is the best method, accomplishing in one operation all that can be obtained by either the Trendelenburg above or the Schede below. Goerlich's report shows 84 per cent. of operations as satisfactory, and 16 per cent. as failures. From experience in 184 cases this seemed a fair statement of the late results from the various methods employed at present, except in the percentage of failures. Dr. Mayo thinks 16 per cent. is too high, as many of those not satisfactory are much improved over their former condition.

Undescended Testicle.

DR. A. E. BENJAMIN, Minneapolis, said that the causes of undescended testicle may be due to improper development of the organ, to a rudimentary vaginal process, to peritoneal adhesions between the testicle and bladder or intestine, and to obstruction of the canal. The testicle may be found any-

where along its course of descent to a point just outside the external ring. Hernia is a common complication of this condition. The organ will not develop as well when located at any point above the scrotum. The possible sterility of the erythrochid and the frequency of malignant, tubercular and traumatic disturbances, complicating this condition, all argue for an early operation to place the gland in its proper location. The operation for undescended testicle has been perfected in the last few years. It has been demonstrated that by careful dissection and an occasional sacrifice of the spermatic vessels the organ will remain in the scrotum.

The Free Interval in Meningeal Hemorrhage.

DR. F. GREGORY CONNELL, Salida, Colo., reported two cases, one of which he said was quite usual, with an interval of two hours, in which recovery followed operation. The other was one in which the patient retired for the night, five hours after a slight trauma, and was found dead in the morning. Autopsy revealed a fracture, with a large extradural clot from the lateral sinus. This second case was not very rare; but in 80 cases collected by the writer only 2 similar instances were encountered. The free interval is defined as a practically symptomless period of consciousness, which follows a primary, transitory unconsciousness; and precedes a secondary, increasing and permanent loss of consciousness. This condition is usually found in association with a head injury. The cause of the bleeding is usually traumatism, with or without fracture. The length of the free interval is studied, in an analysis of the 80 cases, the average length being thirty-five hours. The typical train of events in a meningeal hemorrhage is (1) trauma; (2) concussion, unconsciousness; (3) consciousness, free interval; (4) compression, unconsciousness, but this may be variously modified. In the diagnosis the focal signs are of more value than evidence of injury. The occurrence of collateral hemiplegia must be remembered. Fracture of limbs, previous paralysis or congenital attachment of the iris has caused confusion in diagnosis. Contusion or laceration of the brain, abscess, fat embolism and other conditions may closely resemble meningeal hemorrhage.

In the 80 cases collected, 52 were operated on and 28 were not. After operation there were 39 recoveries and 13 deaths. Without operative interference, 4 recovered and 24 died.

Effects of Osmic Acid Injections.

DR. JOSEPH RILUS EASTMAN, Indianapolis, Ind., said that the injection of ten drops of osmic acid in a 2 per cent. solution into sensory nerve trunks is safe. The likelihood of irritation of the kidney, however, should not be forgotten in cases exhibiting kidney lesions. Injections into the inferior dental or other nerves should not be made through the mouth, as infection of the wound and necrosis may result, with consequent failure in the action of the acid. Immediate relief should not always be expected, notwithstanding that the cases of Bennett and Murphy were all immediately relieved. None of the writer's cases, even those in which the acid was accurately injected into the nerve trunks and into the perineural fat, was promptly relieved, relief coming in from one to two weeks.

There is very little doubt but that the stretching of the nerve trunk incident to the injection is productive of good, supplementing, as it does, the action of the acid. There is no good reason why the stretching should intentionally be avoided, except, perhaps, for experimentation. In the case of small nerves, it will be found exceedingly difficult to inject directly into the nerve trunk, that is, the needle eye will pass to the distal side of the thread-like nerve, or perhaps not enter the nerve substance at all, or, notwithstanding the utmost care used, the fibers may be teased apart by the needle point so that the fluid will simply be spilt about the nerve. In such a case, in order to bring the acid in contact with all of the fibers, it is wise to clip the nerve so that the end may be bathed in the fluids. A general anesthetic should be administered so that neurectomy or section of the nerve may be practiced, if desired.

Eastman's experiments have shown no other changes in the nerve tissues as the result of injections of osmic acid than the disintegration of fat and oil globules in the perineural space and in the white matter of Schwann. The degenerations ap-

pearing in the nerve itself are only such as may be attributed to nutritional changes and exposure, the indirect result of the selective action of osmic acid of destroying fat. There is no reason why this fat should not be restored, and the nerve again become capable of transmitting sensation, that is, theoretically the neuralgia may return after injection of osmic acid. Osmic acid injections are uncertain in effect as to the cure or relief of neuralgia. A large percentage of cases of neuralgia may be relieved for months by osmic acid injections. The injection of osmic acid for the relief of tic douloureux is quite justifiable, even if it should become necessary to repeat the injections at intervals of a few months, particularly in view of the unfavorable results of the so-called radical operation. The local irritation produced by the acid and the remote toxic and irritant effects are not serious in their consequences and have no meaning as to the effect of the osmic acid in relieving neuralgia. The solution of osmic acid should be made fresh for each operation, as deterioration is rapid.

Twentieth Century Surgical Problems.

DR. H. D. NILES, Salt Lake City, Utah, selected this subject for his presidential address. No one who has kept in touch with recent experiences in the surgery of the brain, lungs, pancreas, spleen, peritoneum and other organs can escape the conviction that, with a clear, definite idea of the physiology of these parts, the result of surgical endeavors will be infinitely more satisfactory than we are able to obtain with present knowledge. In brain surgery many failures can not be charged to lack of operative skill, but to inability to locate the pathology early enough to insure safe removal or correction. The same may be said of the morbid conditions of the spleen, pancreas, and, in a degree, of the stomach. Until we are better informed by the physiologist of the normal functions of these organs, we can not hope always to differentiate between the normal and the abnormal. The evidence that points to the one and excludes the other can only come to us through concentrated specialized efforts which the average surgeon is technically unfitted to undertake.

The line that divides surgical from non-surgical diseases is still somewhat vague and indistinct, and one of the most common sources of error in the treatment arises from the fact that we are often in doubt as to when and how far we may safely trust to the reparative resources of nature, and under what conditions prompt operative interference should be resorted to. Thus far success in surgery has been measured largely by the ability to cope with advanced disease after it has become an immediate menace to life and health. But the time can not be far distant when the importance of recognizing the antecedent pathology of cancer, ulcer, surgical kidney, pus tubes, prostatitis, and many other grave lesions, will be impressed on the profession, and the public will be educated to choose preventive rather than last-resort surgery. If we are ever to solve the problems that baffle our endeavors to-day, and place surgery on a much higher plane than it now occupies, scientific workers must become more practical, practical workers must become more scientific, and physicians and surgeons must become more nearly united in their ideas of pathology and treatment. And this can only be accomplished by an organized movement, tending to bring all workers in closer touch and sympathy with one another.

Chylous Cysts of the Mesentery.

DR. MILES F. PORTER, Fort Wayne, Ind., said that these cysts are very rare, more so than are serous cysts. The origin of chylous cysts must be regarded as manifold. They may be single or multiple, unilocular or multilocular, and multiple cysts may become multilocular single cysts and later unilocular by pressure absorption. There is nothing distinctive in chylous cysts save their contents and location. An exact diagnosis is neither possible nor necessary. A centrally located movable tumor crossed by bowel will be almost diagnostic of mesenteric cyst. Puncture for diagnostic purposes is condemned. Abdominal pain is a common symptom, and recurrent attacks of pain, accompanied by vomiting and other symptoms of bowel obstruction, are very significant. Chronic increasing constipation is a frequent symptom. A history of trauma is common. The treatment is surgical and the technic

depends on the findings in each case. The fear of permanent chylous fistula in cases treated by drainage is unfounded.

Treatment of General Peritonitis.

DR. DONALD MACRAE, JR., Council Bluffs, Iowa, advocated the Fowler position in all suspected peritoneal infections; also the institution of free drainage at the time of the operation by means of large-sized rubber tubing only. Drainage of the most dependent part of the pelvic peritoneal pocket is imperative. He urges the removal of the primary pathologic factors when possible and advises against the use of gauze and flushing. He said the drainage tubes should be sucked at frequent intervals.

Appendicitis.

DR. I. B. PERKINS, Denver, favors early operation in all cases, including the interval cases. Fatalities are usually chargeable to delay.

(To be continued.)

AMERICAN SOCIETY OF TROPICAL MEDICINE.

Meeting held at Philadelphia, Dec. 8, 1905.

Mosquito Work in Relation to Yellow Fever on the Isthmus of Panama.

COL. WILLIAM C. GORGAS, U. S. A., in charge of the sanitation of the Canal Zone, spoke more particularly with reference to yellow fever and malaria, which two diseases had caused the principal mortality during the building of the railroad and in the attempted construction of the canal by the French. The conditions were much the same as had been encountered in Cuba, except that in Panama mosquitoes breed as readily in January as in July. During the French occupancy the heavy mortality was a potent factor in the failure of the canal work. From his investigations he believes that the French statistics represent not more than half the actual mortality. Under the United States government authority for doing sanitary work was granted in February, 1905. All cases of yellow fever were required to be reported to the American health authorities, and in addition all cases of fever of any kind occurring in an American were also required to be reported. Cases were, therefore, received within the first day or two of the disease. The general mortality was about 25 per cent. of all cases; the mortality of Americans treated in the hospitals was not more than 10 per cent. The suspected patient was placed in a thoroughly screened ward. In the yellow fever wards the additional precaution is taken of putting each new patient in a wire cage just large enough to cover his bed until the infectious period of the disease has been passed. Also these wards are fumigated every two weeks, so that if a mosquito should get in and bite a patient she would not have time to become infected herself, for from twelve to fifteen days' time is necessary for infection and ability of the mosquito to carry it. The house from which the patient is removed and the contiguous houses are likewise fumigated.

The stegomyia was described as a very domestic mosquito which generally does not leave the house where she is born and bred, and severely the room in which she has lived. The fumigating squads are composed of an experienced foreman and twenty men. The material generally used is sulphur, although in many stores and in the better class of residences many articles are ruined by its employment. Persian insect powder, pyrethrum, is sometimes substituted for sulphur. If a patient elects to be treated at home, the central office is informed, and the patient is thoroughly protected by screens. Only one exit is left to the room and a guard is stationed there, who keeps the key and admits only those who are authorized by the doctor. The fumigation of the rest of the house is carried out and the screened room fumigated when the case has terminated. The stegomyia breeds principally in clean rain water, and in Panama the people have depended largely on rain water for domestic purposes. All receptacles for the water are, therefore, covered, and an inspector appointed for each district, concerning the conditions of which he is obliged to report at least twice a week. At the time of the first inspection, about the first of March, 4,000 breeding places were reported; in

October, about the time Colonel Gorgas left Panama, there were less than 400. In the city of Panama it is estimated that 90 per cent. of the mosquitoes were stegomyia, while in Havana they constituted only 5 per cent. of the mosquitoes. The results of the work are seen in the apparent elimination of yellow fever. In June there were 67 cases; in July about 40; in August about 27; in September about 7; in October 3; none in November; none so far in December. In the town of Colon the last case occurred July 23. Colonel Gorgas believes, however, that it is necessary to allow at least two months to pass without a case before it can be said with certainty that yellow fever has been eliminated.

Detailed descriptions of the measures against malaria were not given, but they were the same as those carried out in Havana, and now used in the United States generally, principally superficial ditching. The results have been satisfactory. Colonel Gorgas thought it safe to say that the canal is being dug with as little trouble from sickness as would obtain in a similar project between Philadelphia and Baltimore, and he believes that further improvement can yet be secured.

SAN BERNARDINO COUNTY MEDICAL SOCIETY.

Annual Session, held Dec. 13, 1905, at Arrowhead Hot Springs, San Bernardino, Cal.

The President, DR. HOELL TYLER, Redlands, in the Chair, and DR. J. M. HURLEY, Secretary.

DR. G. W. TAPE, medical director of the Arrowhead Hot Springs, delivered the address of welcome, which was responded to by Dr. Hoell Tyler.

Officers.

The following officers were elected for the ensuing year: President, Dr. Thomas M. Blythe, Redlands; first vice-pres., Dr. Joseph A. Champion, Colton; second vice-pres., Dr. Charles E. Ide, Redlands; secretary, Dr. D. C. Strong, San Bernardino; treasurer, Dr. John H. Evans, Highlands.

Importance of a Proper Dietary in the Treatment of Disease.

DR. FRANK W. THOMAS, Claremont, took the ground that a careful and intelligent study of dietetics is the keynote of the medicine of the future. Drugs, while both useful and necessary in emergencies, can not produce the permanent alterations of nutrition which can be obtained by an intelligent selection of foods. In nearly all chronic diseases, such as gout, rheumatism, nephritis and diabetes, an intelligent regulation of the diet and habits of the patient is far the most potent means of arresting the progress of the disease. He referred to the brilliant researches of Pawloff on the different strengths of digestive juices called out by different classes of food, illustrating the exquisite adjustment of the alimentary canal to its work, and also the changes which can be produced by an intelligent selection of the different classes of foodstuffs.

DISCUSSION.

DR. WOODS HUTCHINSON, Redlands, believes that a new era is opening up in this most important realm, and that some of the old landmarks are going down to oblivion. Among them is the old three-fold classification of foods of Liebig and Voit, into the flesh-formers or proteids, the fat-formers and the heat producers. It is important to recognize that any class of food can serve any of these functions, and that all food taken into the body is broken down into its simplest molecules, and built up again into the tissues, giving out energy in the process. Secondly, it is doubtful whether the food elements which can be built up into the body tissue pass through the form of peptone. Certainly, a considerable percentage of the peptone formed in the alimentary canal is on its way to the formation of creatin and creatinin and finally other waste products. Therefore, the administration of predigested foods, peptones and peptonoids, is of exceeding doubtful value, nor is the giving of pepsin itself of much greater utility, inasmuch as all gastric analyses show abundance of this ferment present in all cases where acidity is anywhere near normal. The researches of Pawloff have shown that an attractive taste on the part of food is absolutely necessary to stimulate the flow of gastric juice.

DR. GEORGE K. ABBOTT commented on the delicacy and accuracy of the modern tests of digestive power, and the importance of finding out whether lactase is present in the gastric juice before putting the patient on a milk diet.

DR. GEORGE L. COLE, Los Angeles, said that while he thoroughly agreed with Dr. Thomas as to the great importance of dietetics, he had no sympathy with the therapeutic nihilism which derides all use of drugs. The man who has no confidence in drugs should resign from the profession. He agreed with Dr. Hutchinson that the patient should be encouraged to take a wide variety of foods, and that Nature knows how to take care of an excess better than she does of a deficiency. He believes that pepsin and other digestives are sometimes useful in assisting patients who either can not, or imagine they can not, digest certain foods. He believes with Dr. Hutchinson that most patients are underfed rather than overfed.

DR. F. C. E. MATTISON, Pasadena, stated that the more he studies the diet of his patients the less frequently he finds it necessary to give medicine in the chronic disturbances of nutrition. He believes in going into considerable detail with his patients as to what and how much they are eating, making them give him, as nearly as possible, a complete list of the articles they have eaten during the last six or eight meals. He frequently finds in this the secret of at least part of their condition. He agreed that more patients are underfed than overfed, especially among women and children, and that many who attempt to regulate their diet have done so at the expense of some of the elements of which they were most in need, particularly in the line of meats and fats.

DR. NORMAN BRIDGE, Los Angeles, sounded a note of warning against the too strictly regulated diet. In diabetes, for instance, the tastes are in a state of carbo-hydrate hunger, and the deprivation of carbohydrate might re-educate them to the combustion of sugars. An absolute starch-free diet is practically impossible to obtain, and when approximately reached would ultimately injure the general nutrition if long persisted in. He agreed that a wide range of foodstuffs is absolutely necessary to health, and that patients should be encouraged to increase their food-range rather than to diminish it; that the majority of patients are underfed rather than overfed; that the senses of taste and smell are necessary to aid digestion and produce a flow of Pawloff's appetite juice, and that attractive cooking is of great importance in dietetics. Our ideas of digestibility of a food are too exclusively based on the length of time it takes the food to leave the stomach, forgetting that the real digestion is in the small intestine, and that so long as the stomach can empty itself in a reasonable length of time and pass it on to the small intestine, a patient's nutrition can be well kept up to an indefinite period.

DR. JOHN HAYNES, Los Angeles said that in his experience a large majority of patients, particularly of successful business men over the age of 40, eat too much and suffered severely in consequence. He believes that the mere thought of savory food is sufficient, sometimes, to start a flow of gastric juice.

DR. LEMOYNE WILLS, Los Angeles, believes that we should encourage our patients to depend less on the artificial flavors of the cook and to relish their food in its natural state. That the use of milk, raw eggs, nuts and fresh vegetables form a valuable stimulus to the jaded appetite, and call into play both the muscles of mastication and the digestive secretions of the stomach and pancreas in a way that stewed, baked and boiled food does not. He believes that animals living in the open air and eating food in its natural state, are more vigorous and less subject to disease than man.

DR. C. C. BROWNING thinks that a full and rich diet range is necessary in a great majority of cases, both to sustain nutrition and to provide a sufficient amount of waste material to properly stimulate the colon. This is well understood by farmers and stock men who know that horses and cattle fed on grain alone rapidly lose their appetite and become diseased. He called attention to the fact that it is necessary to not only ingest an abundance of food, but to create an appetite for it, and one of the best ways in which this can be done is living in the open air, with exercise, if possible, but where fever exists, as in the case of the consumptive, without it. One of the great advantages of the open-air treatment of consump-

tives lies in the appetite it gives and the large amount of food the patient can consume without becoming bilious. Get patients out of the delusion that drafts are harmful. Teach them to sleep every night with a current of fresh air blowing across the face and half their dyspepsia will disappear.

Shall We Open the Abdomen in the Presence of Acute Inflammation of the Peritoneum?

DR. C. VAN ZWALENBURG, Riverside, held that an intelligent conservatism in this class of cases is productive of best results. He stated that during his practice he has treated 35 cases of appendicitis without operation, all of which recovered. He has also found that many cases of peritonitis, due to various causes, including tuberculosis, recovered by a policy of letting alone. He finds great satisfaction in the Ochsner method of treating appendicitis.

The Conservative Surgery of the Tubes and Ovaries.

DR. A. W. LOBINGIER referred to stricture of the isthmus of the tubes, and methods of operating for this condition. His experience with grafting of the ovary has not been a favorable one. He deprecates radical and unnecessary interference with organs or inflammatory adhesions, and particularly emphasized the importance of limiting the handling and exposure of the viscera to the smallest extent possible, and the avoidance of poisonous or irritating antiseptics and flushes in the peritoneal cavity. He described several original procedures for reducing interference and exposure to a minimum, at the same time providing for the free escape of pus and serum.

DISCUSSION.

DR. C. D. LOCKWOOD, Los Angeles, called attention to the necessity of perfect drainage in abdominal surgery. He agreed with Dr. Lobingier that the pendulum of surgery is swinging back again in the direction of conservatism, and the reduction of removal and interference to only what is absolutely necessary.

DR. LAMOYNE WILLS referred to the admirable original work done by the late Dr. J. McCone of Los Angeles in experimental transplantation of the ovary, stating that his success in this operation had been really remarkable anticipating the results of European experimenters.

DR. BEARDSLEY agreed with Dr. Van Zwalenburg that there has been entirely too much rash and unnecessary surgery of the abdomen. He has had most satisfactory experience in a number of cases of appendicitis with the Ochsner or starvation method of treatment. He also spoke highly of Murphy's system of drainage of the peritoneum, making an opening only sufficiently large to admit the drainage tube and closing up the wound close around the tube.

DR. D. C. STRONG, San Bernardino, thinks that while the Ochsner treatment is excellent in its place, it is being used in an unintelligent manner to a dangerous degree as a substitute for operation in appendicitis. This is not Ochsner's intention or method, as it is only used in cases seen forty-eight hours or more after commencement of the attack, or such as are from various causes unsuitable for immediate operation.

DR. W. W. BECKETT, Los Angeles, believes that in early cases the ideal procedure is to open at once, reserving the Ochsner method for cases too late for operation.

In the evening the society members were guests of the Arrowhead at a fine banquet, which was followed by toasts.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Regular Meeting, held Nov. 2, 1905.

The President, DR. R. C. NORRIS, in the Chair.

Control of Postpartum Hemorrhage.

DR. J. S. RAUBENHUSH said that the treatment must be directly or indirectly hemostatic, and the measures employed depend on the cause, existing conditions and the fact that the hemorrhage may be brought on, accompanied, or followed by shock, syncope or anemia. To check the hemorrhage and overcome its effects one must (a) induce uterine contractions, (b) stimulate the various organs of the body to their respective functions, and (c) supply fluid to the heart and brain. Ergot

should be given when the uterus is empty as a preventative of hemorrhage, and to prevent the free accumulation of blood clots. Aseptic ergot given hypodermically will show its effect almost immediately, and its use is imperative in serious cases. Strychnin is of value in cases due to extravasation and inertia uteri. It should be given in doses of gr. 1/40 to 1/20, and repeated as indicated. It may be combined with ergot or digitalis, or with morphin where cerebral anemia exists. It is wrong to over-stimulate because the uterine muscles will become exhausted. Digitalis is given hypodermically in doses of m. x-xxx, or digitalin, gr. 1/100 to 1.50. It is well to combine it with strychnin since its effect will continue for a longer time. It lessens the heart beats, contracts blood vessels, and it acts on the uterine muscles. Adrenalin is useful when the hemorrhage is not too severe, or to prevent secondary postpartum hemorrhage. It is the best drug for shock. Calcium chlorid and gelatin produce coagulation of the blood. The commercial gelatin, which contains 0.6 per cent. of calcium chlorid, frequently contains albumoses which prevent hemostatic action. He has never employed it in this condition. As stimulants he favors strychnin and digitalis. Nitroglycerin should not be used, unless for syncope and shock. Caffein citrate is excellent as a cardiac and cerebral stimulant in syncope. Strophanthus, quinin and camphor are not indicated. Alcohol (whisky or brandy) can be of no service in severe cases, but may be of real harm. Ether, hypodermically, is useful to stimulate a flagging heart. Ammonium carbonate may be given per rectum when shock is present. Turpentine is of value when purpura hemorrhagica and hemophilia are the causes. Atropin is invaluable for shock and can be combined with morphin. Normal salt solution, administered by enteroclysis, hypodermoclysis or venaclysis, acts as a mechanical stimulant and should be used whenever collapse, shock or anemia follow the hemorrhage.

The best prophylactic and therapeutic measure for postpartum hemorrhage is massage and compression of the uterus. It is effectual, an external method, free from the dangers of infection, and the manipulating hand is able to detect the exact state of the uterus. The hand is kept on the uterus for a half-hour or hour after delivery. In this way no concealed postpartum hemorrhage can occur. First apply uterine massage, then give hypodermics. If not effectual, then give also hot intrauterine injections. Compression of the abdominal aorta is also free from the dangers of infection, prevents flow of blood to uterus, sending it to the heart and brain. Elevation of feet, lowering the head, and ice to the abdomen are of great value to check, control or prevent hemorrhage. Fritsch's "rational bandage." The empty uterus is flexed over the pubic bone, and pads are placed in the abdominal depression back of the uterus and fixed by bandages. The uterine cavity obliterated, immediate hemostasis, no internal manipulations, nothing need be done for twelve or twenty-four hours. Bandaging the arms and legs to send the blood to the heart and brain may be injurious; venaclysis is far better. Abdominal binder, as a preventive, should be applied in all cases of labor, also after hemorrhage when it has been checked. Flagellation of the abdomen is dangerous in cases of shock. Heat to the body and extremities may be tried when shock is present. Electricity should not be used because it increases liability of infection. Inhalations of fresh air, oxygen, camphor and ammonia may be of value whenever "air hunger," syncope or shock are complications.

Within the uterus, hot water irrigations may be given when uterine massage and hypodermics fail. Temperature of water 115 to 120 F.; must be hot to be styptic. Intrauterine manipulations are unavoidable when the placenta is adherent, and are sometimes necessary for removal of clots and to irritate the uterus to contract. It is well to have simultaneously hot-water irrigations. Vinegar is very effective. When more aseptic measures are wanted it may be injected or carried in on a saturated cloth and squeezed over the inner uterine surface. Ice within uterus may be of value when hot water fails. Astringent acids are condemned. Iodin has been used, but cleaner and more effectual measures are available. Iron in the form of Monsell's solution is unclean, injures lining of uterus,

the formed clots are liable to become dislodged and favor secondary hemorrhage. It is almost certain to lead to infection and should not be employed. Tampons are very difficult to effectually pack in a flabby uterus, in fact, quite impossible; much time is required; sepsis is common, and secondary hemorrhage is apt to occur when packing is removed. They favor concealed hemorrhage. Operation is seldom necessary. During second stage of labor, version, forceps, Cesarean section or, perhaps, craniotomy may be necessary. After delivery, correction of displacements, repairs, clamping of vessels, laparotomy, curettage may have to be done.

DISCUSSION.

DR. JOHN B. SHOBER has used extract of mammary gland extensively in cases of hemorrhage due to subinvolution of the uterus following labor, miscarriages, etc. It has entirely taken the place of ergot in that class of cases in his practice. It has a direct influence on the uterine muscle, is a stimulant to the circulation, and has no untoward systemic effect, even when used in large doses.

DR. DANIEL LONGAKER believes that the routine use of ergot after the emptying of the uterus will go a long way toward preventing hemorrhage. Ergot should be used after the uterus is completely emptied. He has never seen the symptom of "air hunger" except as a precursor of a fatal termination in several cases of rupture of the uterus. Little can be done when this symptom develops. He thinks that there are cases, especially those which occur occasionally in placenta previa, with marked tendency to continuation of bleeding, in which the gauze pack, sterile or iodoform, is of great value. Nor would he limit the use of the gauze in this class, for in postpartum hemorrhage, where the placenta has been above the zone of danger, the gauze pack may be safely used. Of the routine measures, the compression of the uterus, the employment of hot water of the temperature of 115, the use of gauze and ergot, using a sterile preparation hypodermically, are the remedial agents on which he relies.

DR. RICHARD C. NORRIS thinks there are many men who fail to understand the application of Credé's method of placental expression and, therefore, fail to apply it in the proper way. He believes that the important fault in employing this method for the delivery of the placenta, in the conduct of the third stage of labor, is that the majority of men attempt the expulsion of the placenta too soon, before the clots in the uterine sinus have had opportunity to form and become reasonably firm. In the absence of bleeding it is his custom to wait ten or fifteen minutes before an attempt is made to expel the placenta by the Credé method. He has never been able to convince himself that ergot did any harm. He invariably administers a dose of ergot as soon as the baby is born, even before an attempt is made to extract or deliver the afterbirth. The theoretical objection to ergot, that it is apt to cause the so-called hourglass contraction of the uterus, he thinks, is a fallacy. The muscles of the lower segment of the uterus are over-stretched, and perhaps paralyzed for several hours, and the action of the ergot for that time is on the upper segment. The administration of ergot from a prophylactic standpoint is a good plan, and the administration earlier than the completion of the third stage has in his hands not been a disadvantage. Furthermore, it helps to promote firm uterine contraction during the first two or three days and perhaps, in a measure, prevents absorption of toxic products that might find entrance to the circulation through the lymphatic or blood vessels.

As to the manual manipulation, he saved a patient's life once by being familiar with Fritsch's method, and in conjunction with it, compressing the abdominal aorta with the ulnar side of the hand, utilizing the other hand in the vagina by holding the posterior against the anterior lip of the cervix and crowding it also against the symphysis pubis. When in need of appliances for an emergency, such as a hot douche, a gauze tampon, a hypodermic, etc., instead of trying to help to get these things, the cool, deliberate obstetrician will direct the frightened assistants while he temporarily controls the hemorrhage by holding the uterus in his grasp. This will stop the bleeding for the time being and give one not only a chance to

regain his own equilibrium, but the assistants to get any appliances that may be required. The method is of extreme value in the emergency or serious postpartum hemorrhage. He has saved life by the intrauterine tamponade. Where the hot douche fails, external and internal manipulation fail, and the woman is rapidly dying, the one thing to do is to promptly tampon the interior of the uterus from fundus to vagina. He does not use iodoform gauze if he can help it. After twenty-four hours the gauze is gradually taken out.

He thinks that adrenalin solution has not been demonstrated to be more valuable than ergot. He has frequently employed it in shock in conjunction with salt solution by hypodermoclysis and has found it of value. In conditions of shock independent of postpartum hemorrhage, he would also not hesitate to use it. A tampon saturated with adrenalin solution and packed in the uterine cavity would probably have some effect in promoting firm contraction and the formation of thrombi. He is not satisfied, however, that its action on the musculature of the uterus can equal that of ergot. Every obstetrician in the daily routine of his practice should have ready for use iodoform or some other gauze for tamponing the uterus. He also urged the men who see these few cases of real postpartum hemorrhage to bear in mind the importance of Fritsch's method.

DR. WILLIAM R. NICHOLSON agreed with Dr. Norris relative to the rarity of true cases of postpartum hemorrhage. The obstetrician's duty is to place his hand on the abdomen over the uterus as soon as the child has been born and to keep it there until the placenta is delivered. If this is carried out as a prophylactic measure there will be many less cases of moderate bleeding following deliveries. The treatment with the mammary gland may be of value in such cases as Dr. Norris made mention of, which oozed to death. In the treatment of hemorrhage the two methods of most value are the method of Fritsch and tamponing the uterus with gauze. He recalled one case of postpartum hemorrhage in which appendectomy had been performed about a year before, and in this case there was no other appreciable cause than the adhesions that had formed. He believes that as the removal of the appendix during pregnancy is becoming more and more frequent, it is well for a man attending a case with such an operative history to be especially on his guard against postpartum hemorrhage. In the case referred to the adhesions probably were the cause of the bleeding.

Embolism Following Abdominal Section.

DR. WILMER KRUSEN reported five cases, four of which ended fatally, occurring in twelve years of gynecologic practice. The symptoms in all these cases, as nearly as could be observed, were very similar. The attack was characterized by precordial distress, severe pain and dyspnea associated with quickened pulse. The patient has an extremely anxious expression, gasps for breath with the aid of all the auxiliary respiratory muscles; the face becomes cyanosed; cold, clammy sweat occurs; the mind remains clear, as a rule, and death occurs in a few minutes in spite of energetic stimulation. The fifth case reported manifested all these symptoms and yet recovered.

When these accidents occur the surgeon feels powerless because there is practically no treatment for the severe cases. It is probably possible, by a careful study of the blood before operation and the avoidance of excessive loss of blood during the procedure and the use of saline infusions after the procedure, to diminish the number of these cases. In anemic cases a longer rest in the absolutely recumbent position, with the avoidance of all exertion or straining for a longer period than is customary, is also to be advised.

DISCUSSION.

DR. WILLIAM R. NICHOLSON has noticed that many of these cases of embolism occur in the simplest form of cases and that the retractors pressing on the internal abdominal vessels give rise to the condition. This was the conclusion reached in our investigations.

DR. COLLIN FOULKROD said that in cases of great anemia and cases which, after operation, show great shock, there is

a pronounced tendency to thrombosis or emboli. The puerperal embolism is quite common and usually occurs from some exertion of the patient, either rising in bed, vomiting, turning over immediately after labor or in the puerperal stage. In one case of hysterectomy which he watched die from pulmonary embolism and heart clot, in which there was no evidence of the slipping of a ligature or of anything being done wrong in the operation, there was a clot not bigger than a filbert in the broad ligament. The postmortem showed undoubted heart clot. In the three cases he has seen of death from embolism, respiration stopped first; the heart beat from one to three minutes after the breathing had stopped, as if there were something plugging up the pulmonary artery and the heart was pumping tumultuously in order to drive that out. The lungs do not expand, because no blood enters them. There is one point which occurred to him in connection with the subject of emboli: the impossibility to tell the exact cause of death in these sudden terminations. One case was that of a man operated on for ulcer of the first part of the duodenum and two days after operation he developed rapid heart and rapid respirations and died within a short time. There was a clot in the heart which, while not exactly the type that you would find postmortem, was one of adherent white fibrin, seemingly antemortem. He apparently had not been able to stand the shock accompanied with the extreme anemia and the coagulability of the blood. He believes that many patients who die suddenly where surgeons do not attribute the death to any form of pulmonary embolism, and in which they have been led astray by the associated symptoms, die from the presence of the heart clot and subsequent embolism.

DR. RAUDENBUSH cited a case following an abdominal operation. The patient seemed to be fairly well for the remainder of the day and the following day, when between thirty and thirty-six hours after the operation she asked for water. She seemed bright and remarked that she was able to help herself. After taking a little of the water the nurse left the room for a few minutes only, when she heard the patient give a gasping and alarming cry, but before the resident physician could be gotten there the woman had died.

DR. R. C. NORRIS said that every case of sudden death should have a very careful autopsy made before a final diagnosis is made. He believes that some of these sudden deaths after operation are sometimes due to myocardial conditions associated with anemia, prolonged anesthesia and a heart that has been doing its best during convalescence suddenly gives out. Careful observations should be made of the clinical histories of these cases, and, while it is not always possible to get an autopsy, we should have some mental reservation as to diagnosis without autopsy findings.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held Dec. 6, 1905.

The President, DR. CHARLES S. BACON, in the Chair.

Radical Removal of Cancer of the Stomach.

DR. WILLIAM J. MAYO, Rochester, Minn., said the medical treatment of carcinoma of the stomach availed little, and cited numerous examples to show the inconsistency of looking for a medical side of this question. The reasons why the medical profession has been so slow to apply surgical methods to the cure of this common malady are: 1. The frightful mortality of early operations which discouraged patient, physician and surgeon. 2. The difficulties and uncertainties of establishing an early diagnosis. In selected cases the Koehner operation is the method of choice. The death rate from early operations is appalling; the average mortality at the time of Billroth's death was over 60 per cent. Steady progress has been made since 1900. Improvements in technique have been so great that the mortality has been reduced to a remarkable degree. The workers in this field have been comparatively few; yet the work has been so quietly carried on that the profession does not seem to realize the enormous strides that have been made. The mortality in operable cases, in the hands of men of experi-

ence, is not above 10 per cent., and in suitable cases it is nearer 5 per cent.

An exploratory incision is the only way an early diagnosis of cancer of the stomach can be established. Prolonged attempts to establish a diagnosis by laboratory methods are provocative of delay and should be discouraged. The most careful, painstaking methods of examination, including laboratory means, should be insisted on, but should not be unduly prolonged. Where there is suspicion of cancer of the stomach, which can not be disproved by the known methods of examination within a reasonable space of time, the conservative practitioner should explain that suspicion to the patient and ask for a surgical consultation. The clinical history, together with chemical examination of the stomach contents, may lead to the suspicion of cancer of the stomach, and it is on this physicians should act, if they would be truly conservative.

DISCUSSION.

DR. A. J. OCHSNER said that the high mortality following operation for carcinoma of the stomach in the early days was due to conditions which no longer obtain, since the methods of operating have been improved by Mayo, Mikulicz, Krönlein, Czerny and Robson. The mortality primarily comes from the fact that many patients can not stand any operation well, and there is a mortality which comes from operation on patients who have a slight power of resistance. Considerable mortality comes from secondary complications, as pneumonia, etc. This is due to unnecessary traumatism and consequent infection along the esophagus. This has been disposed of by simplifying the operation. The surgery of the stomach, as applied to the treatment of ulcer, has cleared up cases which otherwise would have become cancerous, and has placed the surgeon in a position where he can reasonably approach these cases at a time when their successful treatment is a comparatively simple matter. Shock is one of the causes of high mortality, but this has been reduced materially by a more simplified operation. Infection, which was dreaded so much years ago, has been practically eliminated.

DR. ARTHUR DEAN BEVAN said that the more modern work of the last five years has been sufficiently encouraging to urge surgeons to operate more frequently than they have done heretofore on these cases. He thinks the internists have not sufficient confidence in present means of early diagnosis to warrant them in turning patients over to surgeons for an exploratory operation on the ground that they have probably carcinoma. He admits that this is rather a fine line to draw, but it is one that must be drawn by scientific medical men. The cases which hold out the greatest hope are usually the exploratory ones.

DR. E. WYLLYS ANDREWS stated that the justification for the radical in preference to the palliative operation is based on the results obtained and the greatly decreased mortality from the more modern methods. He does not believe, however, that the time will ever come when palliative operations will be abandoned, for he has seen patients whose lives have been prolonged four and six months, and even for one and two years, by such operations.

DR. ALEXANDER HUGH FERGUSON stated that what the essayist said in regard to early operation in cases of cancer of the stomach should be taken to heart by every practitioner of medicine. He looked up 21 cases that he has had in the last three years, in which he simply opened the abdomen and could do nothing for the benefit of these patients, on account of extension of the disease. Those are the cases that come to surgeons for a positive diagnosis. He is frank to admit that in every case, with the exception of one, in which he opened the abdomen, there was a positive diagnosis of carcinoma of the stomach. To accomplish any good, these patients should be operated on earlier. He does not know how to make a diagnosis of carcinoma of the stomach so early that a patient is safe. He has been fortunate enough to operate on one case that has been apparently cured by a pylorotomy, that is, the total removal of the pylorus and the cancer-bearing area. It was an early case, because there was early pyloric obstruction. It would be a fortunate thing for the sufferers from carcinoma of the stomach if obstruction at the pylorus were the first

symptom of the disease; then the vast majority of patients would be saved from an untimely death. This pylorotomy was done in Canada twelve years ago, and the man is alive and well to-day.

DR. FEXTON B. TURCK thinks the keynote of the paper is the importance of directing attention to the one question of determining whether or not a given case is one of carcinoma. Taking a certain group of conditions or symptoms, as mentioned by the essayist, one is justified in assuming at least the possibility of the existence of carcinoma, and if a patient does not recover promptly under appropriate medical treatment adjusted to the case in hand, he would not hesitate to demand, an exploratory incision. He recalled two or three cases of a doubtful character in the last year where, by prompt and timely operations, the lives of those patients have been prolonged.

DR. FRANK BILLINGS said that there is no medical treatment except that of trying to relieve the pain of a patient who has cancer of the stomach. Cancer of the stomach, if it is not palliated by drugs, is a surgical disease. As to diagnosis, there is nothing exact in either our present clinical or laboratory methods. A few years ago physicians looked on the chemical conditions of the stomach contents as important in diagnosis, when, in fact, the chemical reactions of the stomach contents are of minor importance. The motility of the stomach is one important factor in separating medical and surgical cases. When this is disturbed and stagnation occurs, the case is either a medical or surgical one, and the diagnosis will clear up which it is. If it should turn out to be a case of pyloric stenosis, it is surgical; if it turns out to be a case of diminished motility of the stomach, with a large pyloric orifice, it is usually medical, although it may be at any time surgical. Here the diagnostic methods of the laboratory help very materially in clearing that up. A mistake has been made in the past in depending on chemical methods and in keeping patients for a long time under observation, when finally the chemical results were practically of no value.

As to palliative surgical treatment, he has had some experience with patients suffering from cancer of the stomach. He has had many patients on whom gastroenterostomy has been performed. He has seen those patients live for more than a year after that operation; they have been relieved of stagnation; they have been made comfortable; they have gained greatly in weight, in general nutrition, and were happy for the time being. Right here he thinks the medical man has something to say, for the surgeon, after he has performed gastroenterostomy, does not take care of the patient. Medical men have to ease those patients down to the grave. The essayist, he said, has thrown much light on palliative operations, particularly pylorotomy, with removal of as many secondarily infected glands as possible. With this form of operation, as done by the essayist, drainage is established and continues until the death of the patient. Life is thereby longer prolonged than it is by a gastroenterostomy. He is willing to advise his patients to have an exploratory laparotomy made in doubtful cases; and yet one of the greatest surgeons of this city has said to him more than once that a laparotomy for diagnostic purposes should never be performed. In view of the fact that the technic of the operation for cancer of the stomach has been improved so much, so that the mortality, according to Dr. Mayo's figures, is now less than 10 per cent., physicians can turn over their patients to surgeons without the danger of having them killed on the table. A great deal, however, depends on who does the operation.

DR. CARL BECK stated that we have heretofore relied on European authorities, refraining from radical procedures for the removal of cancer of the stomach, and that we have sacrificed too many patients by doing palliative rather than radical operations. This is the first time we have had a report of a large number of cases from an American surgeon, based on true surgical and pathologic knowledge, with authoritative statistics, which can not be questioned, where gastrectomy has been shown to be preferable to any palliative procedure. He has had the opportunity of observing a patient in whom he did a radical operation on the stomach for carcinoma about

five years ago. He has had to do a secondary operation for carcinoma on the same patient in a different region, and during this second operation he examined carefully the stomach region and found it normal. The patient is now well.

Dr. Mayo said he feels confident that the near future will reveal methods of making diagnoses in these cases more easily than can be done now, and that as a consequence a considerable percentage of patients will be sent to surgeons much earlier for operation. The favorable cases of cancer of the stomach he has had to operate on, to a large extent were operated on at the time of ulcer, but in which true cancer was found. It was these early cases that led him to take more and more interest in the surgical side of the subject. Dr. Mayo disclaims any superior knowledge or skill in connection with the operation. He has seen the operation performed in many places in this country and abroad, and he does not believe there is anything in the statements that have been made from time to time crediting him with originality in this regard. He has not claimed any part of the operation as it is developed to-day. True, he has picked up little points here and there in the way of technique and put them together.

Lastly, he said we can not always make a pathologic diagnosis, and he thinks any man who says that we should not operate without a pathologic diagnosis is in error. He does not see how it can be otherwise, because a patient may have the appearance of cancer, when on making a purely exploratory operation there may be found an ulcerated mass or a well-formed tumor. This patient may present cachexia, loss of hydrochloric acid, etc., in which the surgeon may be confident before operation that he is dealing with carcinoma. Fifteen such cases he eliminated from his statistics, because pathologically, as shown by the microscope, they proved to be ulcer rather than carcinoma. Surgeons must occasionally do operations on cases in which the pathology is not clear before they operate; it is not even clear at the operating table, yet there is a condition present which can be relieved surgically.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Infantile Eczema.

In an abstract in the *Amer. Jour. of the Med. Sciences*, G. Clenet regards infantile eczema as a form of autointoxication, with the origin in the gastrointestinal tract. The first indication, therefore, according to this author, is to attempt to regulate the condition of the stomach and intestines by regular feeding, if the child is breast-fed, and by properly modified milk, if the child is bottle-fed. In cases of older children the diet should consist chiefly of milk, with a limited amount of eggs and vegetables. If any meat is given at all, it should be white meat preferably. Coffee, tea and alcohol should be entirely discarded. When there are arthritic tendencies, alkalies should be administered in these cases, and when there is a serofulous condition cod-liver oil, iron or calcium glycerophosphate is recommended, and in children over 5 years of age, in whom the eczema is of a sluggish nature, arsenic may be administered. In those cases in which the dietetic and internal treatment do not suffice, local applications become necessary. The skin must be prepared aseptically by means of a mild non-irritating antiseptic, or by simply washing the affected parts with sterilized water. If crusts are present, Clenet recommends that they be loosened by the application of a poultice of potato starch, followed by an antiseptic powder. In cases of eczema of the scalp, sterile oil containing a small amount of salicylic acid is advisable. General bathing is contraindicated. As ointments he recommends those containing salicylic acid, sulphur, tar, or oil of cade. In some cases the dressings of silver nitrate are of service, followed by the use of

tar or salicylic ointment. In the most stubborn cases weak pastes of pyrogallic acid may be employed.

Treatment of Tapeworm.

Dr. S. L. Spier, in the *Yale Med. Jour.*, recommends in the treatment of tapeworm the use of pomegranate as preferable to male fern. He recommends that a decoction of the pomegranate bark freshly prepared be employed. Sixty grams of the finely powdered bark are placed in about 500 c.c. of water and allowed to simmer down to about 300 c.c. The patient may be placed on his usual diet on the day preceding the employment of the tennafuge, with the exception of the evening meal, which should be omitted or consist only of bread and milk. On the same evening he recommends the administration of a mild cathartic, such as compound licorice powder or the compound cathartic pill, on retiring. As soon as there is a free movement of the bowels the next morning, about one-half of the decoction (150 c.c.) should be given the patient, followed in fifteen minutes by a cup of hot black coffee, keeping the patient in bed, flat on his back. It is noted that the decoction easily produces nausea and, therefore, he recommends the sucking of lemons or the application of cold cloths about the neck to prevent this occurring. In about half an hour the remaining portion of the decoction of pomegranate may be given, followed in an hour or so by a large dose of Epsom salts or magnesium citrate. When the parasite starts to make its exit it may be found necessary to introduce a pint of warm saline solution into the bowel in order to assist in its expulsion. In unsuccessful attempts with this method after the lapse of six or eight weeks, when the parasite will have developed sufficiently, he recommends the administration of 150 c.c. of the pomegranate decoction, to which is added one or two drops of croton oil, when the most tenacious tapeworm will usually be dislodged. [In the administration of croton oil one must be certain of the patient's physical condition, especially as to the condition of the arteries and the heart, on account of the violent purging which this preparation is liable to produce in some cases.]

Liquor Ammonii Acetatis.

As a reliable diaphoretic and diuretic, Beasley recommends liquor ammonii acetatis in the following combinations:

As a diaphoretic in a simple cold:

| | | |
|-------------------------------|-------|----|
| R. Liq. ammonii acetatis..... | 3ii | 8 |
| Tinct. aconiti..... | m. ii | 12 |
| Vini ipecacuanhæ..... | m. v | 30 |
| Aq. chloroformi q. s. ad..... | 3i | 30 |

M. Sig.: To be taken at one dose. Or:

| | | |
|-------------------------------|------|----|
| R. Liq. ammonii acetatis..... | 3iii | 12 |
| Syr. toluani..... | 3ss | 2 |
| Aq. camphoræ q. s. ad..... | 3i | 30 |

M. Sig.: At one dose, diluted in water, and taken at bedtime.

In cases of acute rheumatism the following combination is recommended:

| | | |
|------------------------------|-------|----|
| R. Liq. ammon. acetatis..... | 3iii | 12 |
| Vini antimoni | | |
| Tinct. opii, āā..... | m. xv | 1 |
| Aq. camphoræ q. s. ad..... | 3i | 30 |

M. Sig.: At one draught, to be taken at bedtime.

[The amount of opium must be regulated to suit the individual case.]

In cases of bronchitis the following combination is advised:

| | | |
|------------------------------|-------|----|
| R. Liq. ammon. acetatis..... | 3iss | 6 |
| Spts. etheris nitrosi | | |
| Vini antimonalis, āā..... | m. xv | 1 |
| Syr. toluani..... | 5ss | 2 |
| Mist. amygdale..... | 3ii | 8 |
| Aque camphoræ q. s. ad..... | 3i | 30 |

M. Ft. mistura. Sig.: One such dose to be taken every four hours.

In cases of acute nephritis the following is useful:

| | | |
|--------------------------------|-------|----|
| R. Liq. ammon. acetatis..... | 3ii | 8 |
| Ammon. benzoatis..... | gr. x | 65 |
| Tinct. hyoscyami..... | 3ss | 2 |
| Decoct. scoparii q. s. ad..... | 3i | 30 |

M. Sig.: One-half the amount taken in a little water and repeated in four hours.

The Administration of Mercury in Syphilis.

In outlining the treatment for syphilis, Otto Lerch, in *Amer. Med.*, recommends that the ulcer be extirpated to modify the general infection, and perhaps in some cases to prevent it entirely. After the appearance of constitutional symptoms, such as enlargements of the glands, skin eruptions, and so forth, he recommends that the mercurial treatment be commenced. It may be given by inunction in doses ranging from grains xlv to ʒii (3.00 to 8.00), of the blue ointment in each twenty-four hours. The patient should be instructed, according to this author, to divide the amount into two equal parts, using one part for each leg over the inside, and applying it with vigorous massage. He emphasizes the importance of rubbing for fifteen minutes over each side to cause the absorption, controlling the time by the watch, as the process is very tedious and the patient is too often liable to shorten the time. The following day the process should be repeated over the inside of the thighs in a similar manner, and the third day the inside of the arms; the fourth day the chest and abdomen; the fifth day the back may be similarly treated, and on the sixth day a full warm bath should be administered for cleansing purposes.

It is recommended that the patients use this inunction just before retiring, especially in the winter time, to prevent colds. Thirty inunctions generally constitute a full treatment.

In some cases he recommends that the unguentum belladonna be added to the mercurial ointment to make it more pliable, and for its action on the salivary glands. The signs that the treatment is bearing good results are that the patient feels better and gains in weight. If a mercurial eczema should occur, as may be the case in some instances, the inunctions may have to be discontinued for a few days, and the eruption treated with the paste of zinc oxid. The treatment may have to be repeated for at least two years, giving one treatment every six months. Iodin in some form is a necessary adjunct to effective cure. The mercurial treatment may be alternated with the iodid medication, separated by short intervals.

Anal Fissure.

T. Chittenden Hill, in an article in the *Boston Med. and Surg. Jour.*, recommends as a palliative treatment in uncomplicated cases of anal fissure, in which the ulcer is shallow and the sphincters have not become hypertrophied and spasmodic, that a palliative course of treatment be tried and is usually effective. Careful attention must be given to diet and to regulation of the bowels. An ounce of olive oil must be given by the bowel at night, and the patient instructed to retain it until morning. This will produce both a local beneficial effect and will secure a soft movement of the bowels. Next in importance in the treatment is the necessity of observing strict cleanliness by local bathing night and morning with hot water. The parts should afterward be dried with a piece of sterilized gauze and a pad of the same material applied, and kept in position by means of a T bandage. Nitrate of silver in various strengths, even to the use of a pure stick, may be of value in these cases, as it acts by destroying the unhealthy granulations and the exposed nerve endings, as well as affording a protective covering by means of the formation of an albuminate of silver. The author recommends, however, the application of pure ichthyol to the fissure by means of a cotton swab two or three times a week, as of much greater value than nitrate of silver. (Cohnheim, of Berlin, states that he uses ichthyol locally, together with the olive oil treatment in all such cases, with great benefit.) This preparation locally allays the pain and it does not require but few applications to produce the desired effect. Whether using the nitrate of silver or ichthyol, it is probably best first to anesthetize the fissure by means of a local application of a strong solution of cocaine (10 per cent.). When these patients are discharged they should be instructed that if their constipation is not attended to and the parts are not kept clean, their trouble is very liable to recur. In those cases in which palliative treatment does not produce the proper response, or in which there is much hypertrophy and spasm of the external sphincter, the operative treatment is indicated. The operative procedures, as recommended by this writer, are stretching of the sphincters under general anesthesia, or a complete or partial division of the external sphincter under local anesthesia.

Medicolegal

Unregistered Practitioners Must Get Certificates.

The Supreme Court of Michigan says that in the case of *Hooper vs. Batdorff* attention was called to the fact that the act of 1899 required all persons engaged in or who wished to begin the practice of medicine and surgery to make application for a certificate, while the amendatory act of 1903 omits the former class, thus apparently limiting the laws to cases of beginners in practice. But the court thinks this inconsistent with the legislation on the subject, which began as early as 1883. It says that, considering the several acts, it is reasonable to believe that in 1903 the legislature took it for granted that practitioners then engaged in business had complied with the law of 1899, and that it was not the design to compel them to make application again. The court can not believe that it deliberately intended to offer a premium to law breakers, which is the effect of the first stated contention. It is more reasonable to say that a man practicing medicine in violation of law prior to the taking effect of the act of 1903 is a beginner for the purpose of making such application, not being already a lawful practitioner.

Temporary Certificates Abolished.

The Supreme Court of Nevada holds, in the case of *State vs. Lee*, that that portion of the act of 1899 providing for the issuance of temporary certificates of the secretary of the State Board of Medical Examiners has no longer any force as a part of the law of that state regulating the practice of medicine and surgery. It was argued that for several reasons there had been no repeal of the 1899 provision by the act of 1905. But, taking the act of 1905 as a whole, the court thinks it clearly manifest that it was the intention of the legislature to provide that no one should be permitted to practice medicine, surgery or obstetrics in the state, except after obtaining a license so to do from the State Board of Medical Examiners. Lastly, it says that it was argued that, as only two regular meetings of the board are provided for per annum, a construction of the statute as here given would impose a great hardship on those seeking to enter the practice between such regular meetings, and to impute such intention to the legislature would be unfair to that body. Doubtless the legislature in the passage of the act of 1905 was considering the public good, rather than the convenience of private individuals; but the legislature also doubtless intended to obviate the inconvenience that applicants to practice might experience from being unable to longer obtain temporary certificates by the provision, not found in the act of 1899, permitting special meetings of the board to be held at the call of the president of the board on two weeks' published notice.

Walking Before Jury to Illustrate Injury.

The Supreme Court of Alabama says, in *Birmingham Railway, Light and Power Co. vs. Rutledge*, a personal injury case brought by the latter party, that it, of course, could not know precisely what figure the plaintiff put when told by his counsel and allowed by the trial court, against the defendant's objection, "to walk the best he could before the jury." It would be difficult, if not impossible, to reduce the result of that experiment intelligibly to paper, and no effort to that end was made. So this court was not advised whether he did "his best" in the way of walking, or, to the contrary, did his best in the way of impressing the jury that his powers of locomotion had been greatly impaired. Certainly there was temptation toward the latter course; and it would seem impracticable by any sort of "cross-exercise" so to say, to test the good faith of his gait. Ethically speaking, there was grave doubt whether this man's physical organism should have been exposed to this temptation and to the strain necessarily incident to yielding to it, if he did yield. But on legal principle the evidence was on the same plane as that afforded the jury by a view of his person in repose, or by having him stand before them to show that one leg was longer than the other, were the shortening or elongation of a leg the thing complained of, or by exposing an arm to the jury on invocation to do his best in bending it at the joints, the claim being that it was stiffened, and therefore

ineapable of normal use, and the like; and this court is not prepared to say that the lower court erred in allowing this walking illustration of the plaintiff's alleged injuries.

Presumptions as to Sanity and Suicide.

The Court of Appeals of Kentucky says, in *Masonic Life Association vs. Pollard's Guardian*, that the law presumes every man to be sane until the contrary is shown. Likewise the law indulges a presumption against suicide as being unnatural and immoral. But presumptions of this nature are indulged necessarily in the absence of proof. When the evidence shows and the fact is that the act of suicide was committed when the person was in sound mind, no presumption whatever can be indulged. It ceases to be a presumption and becomes a proven fact. Where the dead body is discovered in the presence of the implement of death, and the surroundings are such as admit of the conclusion either that it was self-inflicted or not, or was intentionally done or not, the evidence being wholly circumstantial, then the presumption against suicide, that is, intentional self-destruction, applies. Where, however, there are eye-witnesses to the occurrence whose testimony establishes the fact to be that the act was intentional, that the person was in a normal condition of mind, that he was not insane, that the motive probably influencing his action was the fear of disgrace, or of punishment for some past act, about to be disclosed or which had been recently discovered, then it would be illogical and contrary to the judgment and observation of mankind to say that the act was to be presumed in law to have been unintentional or the result of that insanity which deprives the mind of its knowledge of the probable effect of the act on life. Again, the court says, that the law is that if the insured intentionally took his own life, at a time when his mind was so far gone as to render him unconscious that he was taking his life, the act will not be deemed his, but will be regarded in law as an accidental killing. The converse is equally true—that although his mind may have been deranged, still if he had mind enough to know that the act would probably result in his death, and if he inflicts it with that intention, it is his act in law.

Surgeon's Claim Not Excepted from Exemption Law.

The Second Appellate Division of the Supreme Court of New York says that the practical question presented in the case of *Taylor vs. Barker* was whether the plaintiff, whose claim was based on personal services rendered by a surgeon to the defendant's wife, was entitled to an execution against the wages or income of the defendant under the provisions of section 1391 of the code of civil procedure. The plaintiff claimed, and he supported his claim by a long line of authorities, that words of the statute, "where a judgment has been recovered wholly for necessities sold," was broad enough to cover the professional services of a surgeon rendered at the request of the defendant. But the difficulty was that, if it be conceded that these words might, under certain circumstances, cover this case, such construction was made impossible by that higher rule of statutory interpretation which commands the court to read the entire statute, and to give force and effect to the legislative intent. The language of the act is that "where a judgment has been recovered wholly for necessities sold, or work performed in a family as a domestic, or for services rendered for salary owing to an employe of the judgment debtor, and where an execution issued on said judgment has been returned wholly or partly unsatisfied, and where any wages," etc., "are due and owing to the judgment debtor," the court may afford the relief from the exemption law provided in the statute. Whatever might be spelled out of the words "necessaries sold" under other circumstances, it must be entirely plain that the legislature by using the words "or for work performed in a family as a domestic," etc., intended to limit the scope of the statute to goods and chattels of the kind known as "necessaries" and to the special kinds of service mentioned in the act. The rule is as old as the common law that the express mention of one thing implies the exclusion of another, and it can not be doubted that this rule should be applied in the present case in arriving at the legislative intent. Hence the question presented in this case must be answered in the negative.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

December 30.

- 1 *Unconscious Value of Careful Clinical Examination of Patients. L. F. Bishop, New York.
- 2 *Transplantation of Veins and Organs. A. Carrel and C. C. Guthrie, Chicago.
- 3 Eucalin Lactate as an Anesthetic for Operations in the Nose and Throat. T. J. Harris, New York.
- 4 A Plea for the Convict Insane. H. Phillips, Philadelphia.
- 5 Malarial Infection in Kurdistan. H. L. Underwood, Erzurum, Turkey.
- 6 Relations of Mind Rhythm to Nervousness. T. T. Evans, Philadelphia.
- 7 Indications and Contraindications to the Use of the Obstetric Forceps. J. T. Scheel, Philadelphia.

1. Unconscious Value of Careful Clinical Examination of Patients.—Bishop emphasizes the fact that the careful clinical examination of a patient, carried on while the judgment is suspended, gives the opportunity for the subconscious development of a valuable opinion. This is entirely lost when the investigation is curtailed in time or details, and when the premature judgment is allowed to be formed. Therefore, it is most important that in every case in which a physician seriously undertakes the treatment, to make a very complete investigation into the history, the physical signs, and the laboratory findings, and, only after collecting these, to form a judgment as to the best course of treatment for that particular patient. The physician who is to give the opinion should, so far as possible, keep his mind free from conclusions until his final opinion is given on the case. It is the subconscious mental activity that produces those results that are considered so valuable in all professional work.

2. Transplantation of Veins and Organs.—Carrel and Guthrie obtained the reversal of the circulation in the jugular vein, in the carotid artery, in the arteries and veins of a limb. Important anatomic changes of a transplanted venous wall soon occur under the stimulus of the increased pressure. The thigh of a dog was completely amputated and afterward replanted by suturing the vessels, the nerves, the bones, the muscles, the aponeuroses and the skin. The pulsations of the popliteal and the posterior tibial arteries immediately became normal, and the femoral vein filled with dark blood. A kidney was extirpated and transplanted by anastomosis of the renal artery to the carotid artery, of the renal vein to the jugular, and the ureter was made to open into the lumen of the esophagus. On the third day after the operation the kidney was directly examined. Its circulation was found normal. A good excretion of urine was going on. The thyroid gland was extirpated and replanted with reversal of the circulation. On the ninety-fourth day after the operation, the gland was found to have a good circulation.

Medical News, New York.

December 30.

- 8 *Essentials of Successful Roentgen Ray Therapy. C. L. Leonard, Philadelphia.
- 9 *Clinical and Bacteriologic Study of the Communicability of Cerebrospinal Meningitis and the Probable Source of Contagion. (Continued.) C. Bolduan and M. E. Goodwin, New York.
- 10 Thiosinamine in the Treatment of Tinitus Aurium. S. McCullagh, New York.
- 11 Observations on Leucoderma (Addison's Keloid). F. Robbins, New York.
- 12 Medical Department of Billbid Prison and Some of the Diseases Among the Prisoners. W. R. Moulton, Billbid, P. I.
- 13 Infection of the Gall Bladder in Typhoid Fever. S. P. Kramer, Cincinnati.

8. Essentials of Successful Roentgen Ray Therapy.—Leonard says that the Roentgen ray is a complex agent, produced by complicated apparatus, having varying qualities that must be adapted to the individual morbid process. Not only must the quality of the ray be adapted, but also its manner of application, so that its effective energy will be absorbed in the diseased area wherever situated in the body. It is so powerful an agent that it can do severe injury rather than good; so varied in its effects that timidity in its application will make it stimulate rather than retard the disease; so different in its qualities that it can be applied for long periods without producing benefit, if the quality appropriate to the lesion is not employed. Sound clinical judgment must determine the qual-

ity and dose to be used according to physiologic action required. Treatment must be carried forward with energy and judgment, especially in the treatment of malignant disease. This is essential to success, and to do it the operator must often approach close to the point where healthy tissue is devitalized, for in no other way can the energy of growth of the malignant cells be injured and their absorption secured. The effect produced on normal tissue, i. e., the skin, is the guide. That effect must be so severe as to threaten its vitality, if underlying malignant disease is to be influenced. Very frequently in treating malignant disease an erythema or even a so-called burn are produced. Although it is necessary to push treatment in some cases to a point where a slight burn is produced, it should not be understood that a severe burn is necessary, or that when it is produced with proper therapeutic dosage it is of slight moment compared with the result obtained.

9. **Bacteriologic Study of Cerebrospinal Meningitis.**—According to Bolduan and Goodwin, in the first week of the disease the meningococcus is present in the nasal mucus in fully half the cases; later in the disease it is found in a smaller fraction of cases. It also occurs in the nasal secretion of individuals who are in close contact with cases of cerebrospinal meningitis. In their series this occurred in about 10 per cent. of those examined. The disease seems distinctly communicable in the sense that the organism is transmitted from the nasal secretion of one person to another. The transmission of the organism, however, is not synonymous with transmission of the disease. The susceptibility of the individual is an important factor in the development of the disease. It seems unlikely that infection is frequently due to trauma or the result of overexertion. Cerebrospinal meningitis in other animals seems to have no connection with the disease in man. The subject, however, has not been sufficiently worked out to admit of positive statements. There was no evidence to show that the disease is carried by vermin or insects. The disease in some epidemics affects mostly infants; in others, older children, and sometimes chiefly adults. The reason for this is not at all clear. The period of incubation seems to be short, from one to four days. There was no evidence of the occurrence of "dwelling infections."

Medical Record, New York.

December 30.

- 14 Chronic Discharge in Organic and Functional Disorders of the Deep Urethra. J. M. Thompson, Boston.
- 15 *Epilepsy the Strangest Disease in Human History. W. P. Sprattling, Sonreya, N. Y.
- 16 Bacteria in the Normal Adult Intestine, with Special Reference to the Etiology of Enterotoxism. H. A. Houghton, New York.
- 17 *Osteosculpture: an Original Method for the Study of Osteology. H. C. Gifford, Syracuse, N. Y.
- 18 Dermoid Ovarian Cyst Simulating Floating Kidney. A. E. Isaacs, New York.
- 19 *Alkalinity of the Blood in Febrile Toxemia. F. W. D'Evelyn, San Francisco.

15. **Epilepsy; Strangest Disease.**—Sprattling points out some of the remarkable features of this disease, such as its many types, uncertain etiology, and its occurrence at all ages and in all stations of society. He predicts that when we shall finally come fully to understand the necessity of treating the epileptic bodily and as an individual, as a preliminary step in the more specific treatment of his disease, and after we shall have sufficiently developed our laboratory methods, we will cure epilepsy as often as insanity is cured to-day, that is, in from 25 to 30 per cent. of all cases. He also speaks of the advantages attending the colony treatment of the disease, and urges widespread support of the principles of the National Association for the Study of Epilepsy.

17. **Original Method for Study of Osteology.**—Gifford presents a method of carving models of bones from blocks of plaster of Paris, which is intended to facilitate the study of osteology. A rectangular block of the material, whose dimensions equal those of the bone in question, is prepared, and on its six sides projections of the outlines of the bone are drawn. The plaster is then whittled away in conformity with these lines, thus forming a rough approximation of the bone, which can then be more carefully finished as to details.

19. **Alkalinity of the Blood in Febrile Toxemia.** D'Evelyn's

patient, on the fifth day of a severe pneumonic infection, went into collapse under conditions which seemed to indicate the presence of a fibrinous deposit in the right auricle extending into the adjacent ventricle. Mechanical respiration was maintained for a period of five hours while the medication consisted of three minims of liquor ammonia fortis, and five minims of a 10 per cent. solution of iodine, mixed just at the time of administration, and repeated at longer and longer intervals. Recovery took place, and the author ascribes it largely to the fact that the alteration in the alkalinity of the blood was recognized and corrected.

Boston Medical and Surgical Journal.

December 28.

- 20 *The Muscle-Splitting or McBurney Incision in Acute Appendicitis With or Without Abscess. L. R. G. Crandon and D. D. Scannell, Boston.
- 21 Municipal Control of Tuberculosis. E. O. Otis, Boston.
- 22 *Two Cases of Anatomic Anomaly of the Large Intestine. S. Robinson, Boston.

20. **Muscle-Splitting Incision in Appendicitis.**—Crandon and Scannell discuss 75 consecutive cases in which this incision was employed and conclude that the incision through the right rectus, as well as that through the right linea semilunaris, is undesirable, because (1) it is usually not over the appendix; (2) it is frequently internal to the abscess, therefore giving mechanically inefficient drainage; (3) it offers in cases drained a distinctly greater chance of hernia. The muscle-splitting or McBurney incision is desirable in all cases of appendicitis, unless an abscess is obviously pointing in a remote or unusual situation, because (1) it opens most often directly over the appendix; (2) it can be enlarged by prolonging the split in each muscle-plane to whatever extent is desirable; (3) it can be drained for a short or a long time without danger of hernia.

22. **Anomaly of Large Intestine.**—In the first case reported by Robinson the sigmoid flexure apparently originated at the splenic flexure because the descending colon had not become adherent posteriorly, thus rendering a differentiation between sigmoid and descending colon impossible. From the splenic flexure to the rectum the bowel was freely movable, much distended, and elongated, measuring five feet and six inches. The diameter of the bowel varied from $3\frac{1}{2}$ to 7 inches. The last five or six inches of small intestine adjoining the cecum were adherent to the posterior abdominal wall in a line from the right sacro-iliac synchondrosis to the lower border of the right globe of the liver. The ileum at this portion had lost its posterior peritoneal covering and was consequently subperitoneal. Its position and peritoneal relations then corresponded roughly to those of the normal adult ascending colon. The cecum was found resting at the upper border of the iliac fossa on the iliac crest. It could be moved upward or inward as far as the adherent last portion of ileum would permit it. The ascending colon was very movable. The second case was one of movable cecum. The small intestine is free as in the normal adult. The posterior surface of the mesentery of the ascending colon, however, has not become adherent to the posterior abdominal wall. The ascending gut has consequently no anchorage, and the cecum and appendix can be placed artificially in any part of the abdomen. The descending colon and sigmoid flexure were correspondingly movable, and the mesentery of the entire intestinal tube was free, except for a common median posterior attachment like that of the primitive mesentery of the young embryo.

New York Medical Journal.

December 30.

- 23 Annual Address of the President of the Medical Society of the County of New York. F. M. Crandall, New York.
- 24 Eclampsia. Review of the More Recent Methods of Treatment, with the Results. L. M. Gaines, Wake Forest, N. C.
- 25 Study of Cantagion. (Concluded.) W. S. Cornell, Philadelphia.
- 26 Non-operative Treatment of Prolapsed Uteri. The Schatz Pessary, etc. K. C. Mead, Middletown, Conn.
- 27 Neurasthenia Among Blondes in the Southwest. V. E. Watkins, U. S. A.
- 28 Recognition of Eye Strain by the General Practitioner. C. P. Franklin, Philadelphia.
- 29 *New Drainage Tube. S. H. Kanner, New York.

29. **New Drainage Tube.**—The instrument devised by Kanner is made either of silver or gold and consists of a cannula, the

length of which must be varied with the thickness of the abdominal wall, the cannula being just long enough to enter the peritoneal cavity. The caliber may be varied according to the requirements of the case. Perforations in the side of the cannula help to insure drainage. A thin disc of metal fits against the abdominal wall. The tube is so made that a screw cap closes its outer end tightly. Whenever it is necessary, the screw cap is removed and the fluid drains off. In the intervals the abdominal plate is covered with zinc oxid adhesive plaster, which does not irritate the skin. The cannula is inserted with a trocar. The trocar is removed and the fluid rapidly drains through the cannula. The technic is exactly like that of an ordinary paracentesis performed under strictest surgical asepsis, except that the cannula is left, the screw cap applied, and the abdominal plate covered with zinc oxid adhesive plaster.

Lancet-Clinic, Cincinnati.

December 30.

30 Treatment of Acne Vulgaris. D. Lieberthal, Chicago.

31 *Ovarian Cystomata. L. P. Luckett, Terre Haute, Ind.

32 Where the Bad Did Good. B. S. Horne, Jonesboro, Ind.

31. See abstract in THE JOURNAL, Nov. 4, 1905, page 1435.

American Journal of Medical Sciences, Philadelphia.

November.

33 *Gonorrheal Septicæmia and Endocarditis. W. S. Thayer,

Baltimore.

3314 Case of Pseudomococcus Sepsis. J. S. Thacher, New York.

34 *Intrapleural Lipoma; Acute Pericarditis; Pericardial Exploration. R. H. Fitz, Boston.

35 Treatment of Chronic Obstruction in the Larynx and Trachea.

J. Rogers, New York.

36 Empyema of the Frontal Sinus. R. H. Johnston, Baltimore.

37 Personal Experiences with Empyema of the Frontal Sinus. G. L. Richards, Fall River, Mass.

38 *The Larynx in Typhoid Fever. C. Jackson, Pittsburgh, Pa.

Angioneurotic Edema Involving the Upper Respiratory Tract.

T. H. Halsted, New York.

40 Milk and Scurlatina. A. Hamilton, Chicago.

41 *Cause of Pulsations in Empyema. W. J. Calvert, Columbia, Mo.

42 Investigations of the Influence of Adrenalin Chlorid on Toxic Doses of Cocain. J. M. Berry, Troy, N. Y.

43 Influenza Bacillus in Bronchiectasis. T. R. Boggs, Baltimore.

33. Gonorrheal Septicæmia and Endocarditis.—Thayer cites additional cases in support of his contention that an acute urethritis is by no means infrequently followed by an endocarditis, either of specific gonorrheal nature or due to secondary or mixed infections which have found their portal of entry in the urethritis or have settled later on the primarily infected valves. The last two cases seen by Thayer presented the usual features of an ulcerative endocarditis—irregular, intermittent fever, chills, progressive anemia, and nephritis—developing, on the one hand, in a case of acute gonorrhea with arthritis about five weeks after onset, and in the other during a demonstrable urethritis, which the patient, a colored man, denied. In both of these cases, with a pure aortic lesion, there was a well-marked, presystolic, rumbling murmur, suggestive of mitral involvement. In one of the cases, a diagnosis of mitral disease was made. Cultures made from the blood during life were positive in one case, negative in the other. In both cases pure cultures of the gonococcus were obtained at necropsy from the affected valves. The remaining case, which is regarded as of especial importance, is an instance of gonorrheal septicæmia, with continued fever of seven weeks' duration.

34. Intrapleural Lipoma.—Fitz believes that his case shows that subpleural lipomata may have a medical as well as a surgical interest. The patient, aged 34, always well, with the exception of a "typhopneumonia," was seized with a severe chill, followed by pain across the chest, aggravated on deep inspiration. There was a distressing cough, with rusty sputum and considerable dyspnea. The physical signs indicated consolidation of the left upper lobe. In the lower left axilla, corresponding to the region of the inferior third of the lower lobe of the lung, there were dullness on percussion and absence of respiratory and vocal sounds. The mid-axillary region was occupied by a wedge of normal resonance and respiratory sounds, with its apex in the vicinity of the left nipple. There were dullness, diminished fremitus, and feeble vocal and respiratory sounds in the left back between the angle of the

scapula and the spine. Numerous medium, moist râles were heard at the base of the left lung behind. The left border of cardiac dullness was four and three-quarter inches from the median line, and the right border of dullness was at the right sternal edge. The apex beat was audible in the fifth intercostal space four and one-half inches to the left of the median line. The heart sounds were regular, rapid, and distant, the second sound was strong at the apex. Adventitious sounds were not heard. There were 41,200 leucocytes per cubic millimeter and 80 per cent. of hemoglobin. During the subsequent four days the temperature fell from 104 to 101, near which latter point it persisted. In the same period of time the pulse fell from 145 to 100, near which rate it subsequently remained. The respiration at first was from 50 to 35, but after five days ranged from 25 to 30, until within two days of death, when it rapidly rose to 45. For a few days the patient was mildly delirious; the white count remained high; the signs of consolidation persisted, but on the fifth day the failure to improve and the faintness of the heart sounds suggested the possibility of an acute pericarditis. Attention was constantly directed to the pericardium, as well as to the lungs and pleura, in search of an explanation of the persistent elevation of temperature and the continued leucocytosis. On the twentieth day of the disease it was noted that the signs of consolidation continued in the left lung. The right border of cardiac dullness remained at the right sternal edge, the cardiohepatic angle was obliterated, and the heart sounds were faintly heard. The pulse became paradoxical. Although dullness persisted in the left back between the angle of the scapula and the spinal column, the vocal resonance and fremitus and the respiratory sounds were normal. Repeated tapplings of the pericardium failed to give any result. Death occurred two weeks after entering the hospital. On opening the pericardium a large amount, probably 500 c.c., of yellowish, opaque fluid gushed forth. Attached to the pericardium on the left side and apparently continuous with the fat tissue of the superior mediastinum was a large mass of fat tissue of about the volume of a newborn child's head, divided by delicate connective-tissue septa into larger and smaller lobules. It evidently occupied the inferior and anterior portions of the left pleural cavity, the left lung behind and above it. The large amount of fat tissue was more or less adherent by fibrous adhesions to the diaphragm, to the pericardium, to the parietal pleura, and to the inferior lobe of the left lung. Portions of it were left in the body on removal of the thoracic viscera. So far as could be determined, the shape of the mass of fat tissue was more or less that of a pear, the small extremity being attached most firmly to the external surface of the pericardial sac along a line extending from the anterior mediastinum in the region of the pulmonary artery (where it seemed to be continuous with the fat tissue of the pericardium) downward on the left side toward the posterior mediastinum. The mass of fat tissue appeared to be covered in places by a thin, shiny layer resembling the pleura. The appearances in the section indicated a lobar pneumonia in which resolution had not been thoroughly established. The congenital origin of the lipoma was indicated by the accompanying hypoplasia of the lower lobe of the left lung.

38. Larynx in Typhoid.—From laryngoscopic observations of 360 typhoid fever cases Jackson concludes that serious and fatal lesions of the larynx are much more frequent than is realized. Death may occur from laryngeal stenosis without even the existence of a laryngeal lesion being suspected in the absence of laryngoscopy. If pain and hoarseness be depended on, a diagnosis will seldom be made. Pain is often masked by toxæmia. Cyanosis and dyspnea are rare, apnea is common. Unlike the complications of the exanthemata, ulcerative laryngitis complicating typhoid fever, in the likelihood of its occurrence, its course, and its termination, bears a close relation to the severity of the primary disease. The severity of the laryngeal lesion is in direct proportion to the toxæmia, pyrexia not being in itself a factor, but only an index of the toxæmia. Thrombosis of laryngeal vessels in the mucosa or deeper is probably the most frequent local initial lesion. Mixed pyogenic infections are the rule. Laryngeal lesions due to the

Bacillus typhi abdominalis are exceedingly rare. Prognosis as to life is good as considered apart from the general malady. Not only the life, but the laryngeal vocal and respiratory functions will be saved if a tracheotomy be done early. Death from laryngeal lesion means a death for want of an early tracheotomy. Prophylaxis consists in good ventilation, without draughts, sterile bedding, oral antiseptics, sterile food, and water. Potassium iodid, hydrargyrum biniodid, benzoïn inhalations, and oral antiseptics are the best remedies. Early tracheotomy under local (Schleich solution) anesthesia will effect a cure in almost every case.

41. Cause of Pulsations in Empyema.—While working on cross-sections of a body with pleurisy of the left side, the anatomic relationship of the organs suggested to Calvert an explanation for the pulsating empyema which, on analysis, seems to fulfill all the requirements. He says that the requirements are a firmly fixed pulsating organ; contact of the pleural wall with this pulsating organ; distention of the pleural sac with fluid, air, or solid material, and a collapsed condition of the lung. The first requirement is fulfilled by the thoracic aorta; the second, by the normal relationship of pleural wall to thoracic aorta; the third, by the presence of fluid, pus, or a combination of these with air in the pleural cavity; and the fourth, by the collapsed condition of the lung in pleurisy and empyema. In the normal thorax the pulsations of the aorta are absorbed by the easily compressible lung tissues, consequently are not transmitted. When the fluid is present in the left pleural cavity, the lung is partially or completely collapsed, depending on the amount of fluid. As the fluid increases, the thoracic walls and mediastinum are pushed outward from the cavity of the left pleura and the lung becomes more and more collapsed. Until the lung is completely collapsed it naturally contains more or less air; consequently it is compressible and capable of absorbing, or compensating for, the impulse of the aorta. In time, however, a point is reached when further to compress the lung a pressure-sufficient to expand still more the thoracic wall, more especially the intercostal spaces, is required. The impulse of the aorta transmitted to the pleural effusion will further expand the intercostal spaces or pulsation of the intercostal spaces is present. The pressure in the pleural cavity is transmitted in all directions at right angles to the pleural walls; consequently the aorta is pushed to the right as far as the left intercostal arteries permit and against the vertebral column. The arterial wall expands in all directions. The artery being firmly fixed against the vertebral column and nearly half covered by the parietal pleura, which does not offer a resistance equal to that offered by the vertebral column and stretched left intercostal arteries, the aortic pulsations must be transmitted to the fluid in the pleural cavity. This pulsation of the effusion is transmitted equally in all directions and must be taken up by the elasticity of the mediastinal membranes, diaphragm, and thoracic wall and the compressibility of the lung. Of these structures, the one with the greatest elasticity will absorb the greatest portion of the impulse. As this pulsation is purely hydraulic in principle, the nature of the fluid in the pleural cavity is of little or no importance. Consequently, in pleural effusions pulsation is not a positive sign of empyema. In the literature only three cases of pulsating pleurisy are recorded.

Medicine, Detroit, Mich.

December.

- 44 Case of Achromatoplasia. M. Michael, Chicago.
- 45 Points in the Treatment of Pneumonia. J. M. French, Milford, Mass.
- 46 *Echinococcus Multilocularis. W. R. Smith, Cummston, Boston, Mass.
- 47 Diabetes Insipidus Secondary to Brain Syphilis. E. Bowe, Jacksonville, Ill.
- 49 Epilepsy Treated Successfully by Administration of Nuclein. R. Dewey, Wauwatosa, Wis.
- 50 Influence of Adrenalin on the Circulatory System. J. Pruszyński, Warsaw.

46. *Echinococcus Multilocularis*.—According to Smith, every form of multilocular hydatid hitherto described is found in Australia and may occur in large numbers in animals from certain localities. A "tunneling" form in the liver not previously described is also found. The commonest form occurs

in all parts of the lungs and liver, and consists of a number of "graded" loculi communicating with one another and varying in size from 1 to 10 mm. or more in diameter, with ectocyst and endocyst continuous throughout the loculi, the small loculi being barren, the large fertile, and all inclosed in a common adventitious fibrous capsule, which, with the contained cyst, forms a tumor that can be fairly easily "shelled out" of the organ in which it is found. The calcified pearl tumor, or beaded chain of tumors, is found most commonly at the transverse fissure and near the notch of the liver. A great ramifying hydatid of the lung is described, measuring 2 mm. in diameter, including the capsule, which is undergoing calcification. A three or more locular hydatid of the liver is described, measuring 4 mm. in diameter, including the capsule, which is undergoing calcification. The changes in the tissues of the lung and liver consist of (a) round-cell infiltration; (b) proliferation of the epithelial and connective tissue elements; (c) formation of giant cells in two ways; (d) adenomatous new growth; (e) formation of fibrous capsule by proliferation of the cellular and fibrous tissues of the part of the organ in which the hydatid grows; (f) calcification. Investigation of pathologic changes which occur in the lung in the presence of worms shows that they consist of (a) infiltration, (b) proliferation of the epithelial and connective tissue elements, (c) giant-cell formation, (d) adenomatous new growth, (e) fibrosis, and (f) calcification, and are not distinguishable from those to be observed in the case of hydatid tumors. No satisfactory explanation has been given of why mechanical irritation of one part should cause overgrowth in a part where the irritation does not and can not act mechanically. Hydatid cysts develop in the lumen of the bronchi, and attain the size of a hen's egg or larger, a favorite spot being just beyond the point where the cartilaginous elements cease. This confirms Dr. Dougan Bird's theory that eggs of the tenia may reach the lungs direct by the air passages and there develop. There is a large amount of evidence to show that hydatids reach their positions of further development in the lungs, liver, and elsewhere by the lymphatics, portal vein, and arteries. The thickness and amount of calcification of the fibrous capsule bear no relation to the age, size, position, or mechanical irritation of the tumor. There is an intimate connection between the cuticle (ectocyst) and the adventitious fibrous capsule. In some instances a layer of cells between the two appears to add to the thickness of both. There is evidence that the outer as well as the inner surface of the cuticle is cellular and that both have similar functions. There is no evidence of any causal connection between hydatids and tuberculosis, although the two conditions are very often associated. Suppuration, in healthy animals, of hydatid cysts, if it occurs at all, is extremely rare. Calcification may affect the fibrous capsule, the laminated membrane, and the contents of the cyst, and may occur at any stage in the growth of the tumor. The theory that calcification is a process of degeneration due to the cutting off or diminution of the blood supply consequent on the increasing fibrosis of the capsule is disproved. Spontaneous cure is not uncommon and may occur in any organ of the body apart from any question of the presence of resisting structures. Multilocular hydatids are fertile at a very early stage of their existence. The worms often appear to have more slender necks than those in the unilocular cysts of the human subject. The multilocular form is not dependent on mechanical pressure. A false form may originate from unilocular cysts: (a) By two continuous cysts coalescing; (b) by constriction; (c) by ingrowth of the walls; (d) by pouching or evagination. A typical echinococcus multilocularis is multilocular from almost the earliest recognizable cystic stage, and can not, in the present state of our knowledge, be called merely a variety of any other form of hydatid.

49. *Epilepsy Treated Successfully by Administration of Nuclein*.—Dewey cites the case of an epileptic who was benefited remarkably by nuclein. The disease had existed for about 17 years. The convulsions were typical grand mal of rather severe grade. Because of an inoperable desmoid subserous growth of malignant character situated in the abdominal wall, the use of nuclein was begun in 1896. Hypodermic injections were given daily for about five weeks, in 20-minim doses, in-

creasing to 80 minims. The injections produced indurated lumps in the arms at the sites of injections, and some of these softened and were evacuated; they did not open spontaneously. After the formation of these masses the injections were discontinued and protoneuclein given internally, gr. v, t. i. d., for six weeks or two months. After a month it was noticed that the pain of the tumor and a coincident irritation of the bladder diminished. A slight reduction in size of the tumor was also discernible. Early in 1897 he had increased frequency of convulsions and return of pain in the hypogastrium, and was given bromids and chloral, gr. x, at night, with some improvement. In March, 1897, the 1 per cent. nuclein solution was given (by the mouth) in doses of half a dram at bedtime for some weeks. There was some slight gradual improvement in all symptoms, both of epilepsy and tumor, and in May and June, 1897, the patient again took the hypodermic injections for five weeks, with some improvement in the general condition and no further appearance of indurated nodules, but the tumor was somewhat increased in size. In October, 1898, the patient seemed to be failing physically, and the tumor continued to give much pain. He could take little or no exercise, and mentally was impaired, forgetful, dull and depressed. In December, 1897, daily dram doses of nuclein solution were given hypodermically for some weeks. The nuclein injections were continued on into March, 1898. There was no abatement of the epileptic attacks, but the pain of the tumor was less and there was some retraction in size. In April and May, 1898, the patient took protoneuclein powder for eight weeks. The convulsions continued to occur at the rate of two or three every month till November, 1898. In October the patient ceased the use of all bromids or chloral. He seemed to show physical improvement, became more active mentally and stronger physically, and was able to take more exercise. From this time physical and mental improvement continued. These were, perhaps, attributable in part to cessation of all sedatives and bromids and to the systematic hydrotherapeutic treatment with massage, hygienic regulation of life, etc., at a sanitarium; but these measures scarcely accounted for the recession of the tumor, which from that time up to October, 1905, has ceased to cause any inconvenience. After Nov. 29, 1898, there was no seizure till Feb. 22, 1899—a longer interval of freedom than had occurred for several years. There was no further convulsion until May 6, 1899; another occurred May 25; then there were none until July 16, 1899. Since October, 1898, up to the present time, attacks have occurred about twice in each year. The epilepsy is not cured, but has undergone an unusual amelioration. In 84 months there were ninety attacks, and it is probable many occurred that were not recorded. From November, 1898, to the present month, another period of 84 months, there have been, as nearly as can be ascertained after careful inquiry of patient and his family and friends, fourteen attacks.

American Journal of Obstetrics, New York.

December.

- 51 Fundamental Principles of Immunity. H. T. Ricketts, Chicago.
- 52 Bacteriology of the Puerperal Uterus. H. M. Little, Montreal, Can.
- 53 Case of Congenital Heart Disease: Transposition of the Aorta and Pulmonary Artery. Patient Foramen Ovale and Ductus Arteriosus. A. G. Ellis, Philadelphia.
- 54 Hysterectomy for Fibroids of the Uterus. J. B. Deaver, Philadelphia.
- 55 Congenital Fetal Cysts of the Neck Obstructing Labor. F. J. Tauszig, St. Louis, Mo.
- 56 Hemorrhages in Ectopic Pregnancies. T. J. Watkins, Chicago.
- 57 Hemorrhage of Placenta Previa. A. McDermid, Chicago.
- 58 Sarcomatous Degeneration of a Fibroid Tumor of the Uterus with Repeated Hemorrhages into the Tumor. T. A. Eick, Philadelphia.
52. Bacteriology of the Puerperal Uterus.—In 50 consecutive women in whom the lochia was examined by Little immediately after labor and on the third and seventh days of the puerperium, the uterus was absolutely sterile in 92, 50, and 44 per cent. of the cases, respectively. Counting as negative the cases in which gonococci were present, the figures are 96, 72, and 67 per cent. The puerperium was normal in 40 and febrile in 10 cases. In the former, the percentages of absolute sterility were 92.5, 62.5, and 50 per cent., as compared with 90, 40, and 20 per cent. in the latter; or, counting as negative the gonor-

real cases, the figures 95, 85, and 70 per cent., and 100, 50, and 50 per cent., respectively. The results were considered as positive when bacteria were found only in smear preparations or only in cultures, as well as when present in both. It is probable, therefore, that a certain number of the positive results were due to contamination, and that the uterus is really sterile in a larger proportion of cases than is indicated by the figures. The streptococcus was found but once in the entire series, being present in a febrile case on the third day, but absent on the first and seventh days.

St. Paul Medical Journal.

December.

- 59 *Extirpation of the Fauical Tonsil. F. C. Todd, Minneapolis.
- 60 Difficulties of Diagnosis of Diseases Located in the Epigastric Region. W. Courtney, Brainerd, Minn.
- 61 Cretinism. A. G. Liedloff, Mankato, Minn.
- 62 Thoughts on Longevity. T. G. Stephens, Sidney, Iowa.
59. Extirpation of Fauical Tonsil.—The method which Todd has found most successful and now practices is as follows: In nearly all cases a general anesthetic is administered, and those operations performed under a local anesthetic are on adults or older children, who have good control of the throat. In such cases, the tonsil is anesthetized with a 10 per cent. solution of cocaine, the crypts being cleaned out, the cocaine is swabbed repeatedly into these holes after using a suprarenal preparation, as Todd has found that the contraction of the blood vessels helps to prevent the toxic effect of the cocaine. Even when cocaine is used, certain portions of this operation are apt to be painful. When the patient is under a general anesthetic the head is dropped over the end of the table, and the operator sits on a stool facing the patient's face, which is exactly upside down. Strong direct daylight is used, the mouth gag is inserted, the patient's tongue is held by an assistant standing at the side of the table, the tonsil is grasped with the tonsil forceps, and with tonsil knives the anterior pillar is dissected loose from the tonsil, care being taken not to injure the pillar, for it is from the pillars that most hemorrhages arise, and it is not desirable to injure these muscles if we would secure perfect results. With a pair of slightly curved scissors the tonsil is separated above and below, being all the time pulled out with the forceps, the forceps are then released and the Kratzmüller cold wire snare applied. After placing the loop over the tonsil, this is pulled out with the forceps again and well into the snare, an assistant aids further by exerting pressure from the outside on the neck, thus pushing the tonsil into the snare. By this time the tonsil is only attached by a pedicle, and by rapidly bringing the handles of the snare instrument together the wire is brought into the cannula, and the tonsil is thus peeled out. If the technic is perfect, the entire tonsil is enucleated, the back surface being smooth and covered with membrane. If a portion remains, it should be pulled into the snare and removed, but this should not be necessary if the operator has been careful. There is less hemorrhage than with the tonsillotome or scissors. Todd says that, if the pillar is cut with the knife or scissors (an accident that need not occur), there may be bleeding, and if it is severe it may be stopped by ligating the pillar.

Pennsylvania Medical Journal, Athens.

November.

- 63 *Value of Spinal Anesthesia in Shock. Study in Surgical Physiology. J. M. Wainwright, Scranton.
- 64 *Direct Fixation of Fractures. J. B. Roberts, Philadelphia.
- 65 *Uterine Curettage: Its Indications and Contraindications; Its Technic; the Complications Which May Attend or Follow the Procedure and Their Proper Treatment. E. E. Montgomery, Philadelphia.
- 66 *Significance and Management of Chronic Uterine Hemorrhage. G. E. Shoemaker, Philadelphia.
63. See abstract in THE JOURNAL, Oct. 14, 1905, page 1188.
- 64-66. Id.—Nov. 4, 1905, pages 1437 and 1439.
69. Id.—Oct. 28, 1905, page 1354.

American Journal of Urology, New York.

November.

- 67 Locomotor Ataxia and the Urologist. J. W. Courtney, Boston, Mass.
- 68 Pyelitis. W. Ayres, New York.
- 69 Renal Neoplasms Originating from Aberrant Suprarenal Tissue Germs. F. Peuckert.
- 70 Case of Vesico-Intestinal Fistula. J. Mittag, Wittenberg, Germany.

University of Pennsylvania Medical Bulletin, Philadelphia.

November.

- 71 Development of Modern Medical Education. A. Stengel, Philadelphia.
- 72 Medullary Giant-Cell Sarcoma with Cryst. of the Lower End of the Ulna. G. G. Davis, Philadelphia.
- 73 Collection of an Analysis of the Reported Cases of Osteoarthritis of the Spine (Spondylitis Deformans). D. C. Guffy.

American Journal of Surgery, New York.

November.

- 74 Paraffin in Surgery: a Critical and Clinical Study. W. H. Lockett and F. I. Horn, New York.
- 75 Inguinal Hernia in Early Childhood. Plea for the Radical Treatment of all Cases. E. W. Peterson, New York.
- 76 Hysterectomy or Myomectomy? A. H. Goelet, New York.
- 77 The Suture as a Factor in Primary Union. J. B. Morgan, Augusta, Ga.
- 78 Present Status of the Treatment of Malignant Tumors, with Especial Reference to Radiotherapy. W. E. Deeks, New York.

Journal of Mental Pathology, New York.

November.

- 79 Pathology of the Neurofibrils. U. Cerletti and L. Sambalino, Rome, Italy.
- 80 A Specific Human Energy and Its Economic and Social Significance. L. G. Robinovitch, Paris.

Journal of Experimental Medicine, New York.

November.

- 81 Studies on Calcareous Degeneration. O. Klotz, Montreal.
- 82 Physiology of Heart-Block in Mammals, with Especial Reference to the Causation of Stokes-Adams Disease. J. Erlanger, Baltimore.
- 83 Action of Glycerin on Bacteria in the Presence of Cell Exudates. J. J. Kinyoun, Philadelphia.
- 84 Cytotoxic Serum Produced by the Injection of Nucleoproteids. S. P. Beebe, New York.
- 85 Contribution to the Technique of Making the Eck Fistula. F. C. Herrick, Cleveland.
- 86 Presence in the Bone-Marrow of Enzymes Resembling Those of Leucocytes. E. L. Opie, New York.

Iowa Medical Journal, Des Moines.

November.

- 87 Tuberculous Peritonitis. O. J. Fay, Des Moines.
- 88 Venereal Disease Innocently Acquired. H. B. Young, Burlington.
- 89 Case of Recovery from Tetanus. J. C. Hancock, Dubuque.

Interstate Medical Journal, St. Louis, Mo.

November.

- 90 Blood Vessels of the Lymphatic Gland. W. J. Calvert, Columbia, Mo.
- 91 Reflex of the Tendo Achillis. C. G. Chaddock, St. Louis.
- 92 Study of the Anatomy of Congenital Dislocation of the Hip After Manipulative Reduction. N. Allison, St. Louis.
- 93 William Harvey and Our Debt to Him. E. P. Lyon, St. Louis.

Colorado Medicine, Denver.

November.

- 94 Submucous Window Resection of the Nasal Septum. W. C. Bane, Denver.

Southern California Practitioner, Los Angeles.

November.

- 95 Aims and Methods in Medical Diagnosis. A. Steegel, Philadelphia.
- 96 Relation of County Medical Association to the Public Health of Los Angeles. G. H. Kress, Los Angeles.
- 97 San Jacinto Trails. B. Trask.
- 98 Wine and the Poets—A Critical Study of the Poet's Devotion to the God of Wine. J. Madden, Milwaukee.

Buffalo Medical Journal.

November.

- 99 The Student and the Young Doctor. G. F. Cott, Buffalo.
- 100 *Real Triumph of Japan or the Conquest of the Silent Foe. L. L. Eganman, New York.
- 101 Hygienic and Dietetic Treatment of Gonorrhea. H. G. Spooner, New York.

Journal of the Medical Society of New Jersey, Newark.

November.

- 102 Early Clinical Diagnosis of Pulmonary Tuberculosis. S. A. Knopf, New York, N. Y.
- 103 What the State Is Doing for Her Consumptive Poor. C. J. Kipp, Newark.
- 104 Prevention of Consumption. T. W. Harvey, Orange.
- 105 Treatment of Tuberculosis. I. H. Hance, Lakewood.
- 106 Points in the Diagnosis and Treatment of Pulmonary Tuberculosis. T. Sensesman, Atlantic City.

Journal Missouri State Medical Association, St. Louis.

November.

- 107 Uterine Displacements. A. R. Kleffer, St. Louis.
- 108 Abdominal vs. the Vaginal Route in Pelvic Surgery. C. L. Hall, Kansas City.
- 109 Abortion Followed by Thrombophlebitis and Embolic Pneumonia. F. Ueder, St. Louis.
- 110 Operations for the Relief of Clitoral Orbit. J. M. Ball, St. Louis.
- 111 Substitution of the Organic Silver Preparations for Silver Nitrate in the Treatment of Diseases of the Eye. J. H. Grass, St. Louis.
- 112 Limitation of Rest in the Treatment of Fractures. R. M. Pankhouser, St. Louis.

American Practitioner and News, Louisville.

November.

- 113 Arteriosclerosis. M. M. Pearson, Bristol, Tenn.
- 114 Cancer of the Rectum. F. W. Samuel, Louisville.
- 115 Intestinal Obstruction. I. Abell, Louisville.

Woman's Medical Journal, Toledo, Ohio.

November.

- 116 When to Operate on Uterine Fibromyomata. R. T. Bullard, Los Angeles, Cal.
- 117 Status of the Fetus in Utero. H. Hughes, Mankato, Minn.

Journal of Medical Research, Boston, Mass.

November.

- 118 Micro-Chemical Reactions and Their Value in the Study of Cancer Cells. M. Tracy, New York.
- 119 Structure and Biology of the Yeast Plant. F. Mutchler.
- 120 Etiology and Pathology of Vaccinia in the Rabbit and in Man. W. T. Howard, Jr., and R. G. Perkins, Cleveland, Ohio.
- 121 Production of Active Immunity with the Split Products of the Colon Bacillus. V. C. Vaughan, Jr., Ann Arbor, Mich.
- 122 Study of Epidemic Cerebrospinal Meningitis. W. J. Elser, New York.
- 123 Synthetic Culture Media and the Biochemistry of Bacterial Pigments. M. X. Sullivan, Providence, R. I.
- 124 Observations on Bactericidal Complement. E. Steinhardt, New York.
- 125 Relative Influence of the Blood Fluids and the Bacterial Toxins of Pharyngitis. E. L. Walker, Boston.
- 126 Experimental Production of Glycuronic Acid in Dogs. A. E. Austin, Boston.
- 127 Fermentation Tube in the Study of Anaerobic Bacteria, with Special Reference to Gas Production and the Use of Milk as a Culture Medium. T. Smith, H. R. Brown and E. L. Walker, Boston.

The Laryngoscope, St. Louis, Mo.

November.

- 128 Treatment of Atrophic Rhinitis by Means of an Oro-Nasal Canula. S. Izlaue, Cincinnati.
- 129 Diffuse Infiltration of the Right Side of the Nasopharynx with Paresis of Cranial Nerves. O. T. Freer, Chicago.
- 130 Diseased Faucal Tonsil and its Operative Treatment. W. R. Murray, Minneapolis.
- 131 Formalin in the Treatment of Diseases of the Ear, Nose and Throat. O. J. Stein, Chicago.
- 132 Clinical Significance of Otalgia. P. Fridenberg, New York.
- 133 Epidural Abscess of the Temporal Region and Abscess of the Frontal Lobe; Operation; Recovery. G. Kiaer, Copenhagen, Denmark.
- 134 Case of Laryngeal Tuberculosis. O. J. Stein, Chicago.
- 135 Case of Cyst of the Thyro-Glossus Duct. J. J. Kyle, Indianapolis, Ind.
- 136 Experiments on Animals with Ethyl Chloride. S. H. Large and E. D. Brown, Cleveland, Ohio.
- 137 How Much Attention Should We Give the Middle Turbinate Body in Diseases of the Accessory Sinuses. C. M. Robertson, Chicago.

Wisconsin Medical Journal, Milwaukee.

November.

- 138 Surgery of the Prostate. H. H. Young, Baltimore.
- 139 Infantile Scurvy. A. W. Gray, Milwaukee.
- 140 Early Diagnosis and Early Operative Treatment of Acute Infectious Osteomyelitis. K. W. Doegge, Marshfield, Wis.
- 141 Relation of Bovine Tuberculosis to Public Health. H. E. Scott, Argyle, Wis.

Medical Herald, St. Joseph, Mo.

November.

- 142 Points in the Home Treatment of Pulmonary Tuberculosis. J. W. Kline, Ft. Dodge, Iowa.
- 143 Carelessness in the Use of the Curette. H. E. Coarse, Kansas City.
- 144 Newspaper Press and American Civilization. A. S. Ashmead, New York.
- 145 How to Teach Surgery. T. E. Potter, St. Joseph, Mo.
- 146 How to Teach the Specialties. W. L. Kenney, St. Joseph.
- 147 How Gynecology Should be Taught. O. B. Campbell, St. Joseph.
- 148 Quack Methods and Habit Cures. A. L. Gray, St. Joseph.
- 149 Physician and Consumptive. E. L. Perry, Kirkwood, Mo.

Medical Examiner and Practitioner, New York.

November.

- 150 Physique Standards and Mortuary Statistics. S. T. M. Dermith, Denver.
- 151 Paresis and Its Relation to Life Insurance. G. G. McConnell, Chicago.
- 152 Relation the Medical Examiner Bears to the Applicant. J. Holdom, Detroit, Mich.
- 153 Benefit of Listing Discredited Examiners. S. F. Rose, Port Huron, Mich.
- 154 Crusade Against Tuberculosis. W. K. Harrison, Chicago.
- 155 Medical Examiner—The Ideal and the Real. D. H. Keller, Louisville, Ky.

Journal of Infectious Diseases, Chicago.

November 25.

- 156 Some Artefacts in Mouse Carcinoma. G. N. Calkins and G. H. A. Clowes, Buffalo.
- 157 Antagonism of Bacteria and Their Products to Other Bacteria. H. H. Mettler, New Haven, Conn.
- 158 Relation Between Serum Resistance and Virulence. D. W. Day, Chicago.
- 159 Bacteriologic Examination of a Plague Rat. W. B. Wherry, Manila, P. I.

- 160 Observations on Acute Ascending Paralysis. P. Bassoe, Chicago.
- 161 Studies in Meningococcus Infections. D. J. Davis, Chicago.
- 162 Study of the Dejecta of Normal Children and of Those Suffering from Acute and Subacute Diarrhea with Reference to *B. Dysenteriae*. K. R. Collins, New York.
- 163 Common Mosquitoes of Ilhé and Bailundo Districts, Portuguese West Africa. F. C. Wellman.

Denver Medical Times. November.

- 164 Treatment of Typhoid Fever. C. B. Van Zant, Denver.
- 165 Id. A. D. Atwood, Denver.
- 166 Id. G. M. Edwards, Denver.
- 167 Id. C. G. Hickey, Denver.
- 168 Id. G. D. Crews, Denver.
- 169 Id. H. W. Rorer, Denver.
- 170 Id. M. Kleiner, Denver.
- 171 Prevention of Typhoid. C. E. Cooper, Denver.
- 172 Case of Addison's Disease with Apparent Recovery. F. M. McCartney, Denver.
- 173 Relation of Diagnosis to Life, Accident and Health Insurance. G. W. Miel, Denver.
- 174 Sub-mucous Resection of the Nasal Septum. J. M. Foster, Denver.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

December 16.

- 1 *Carcinoma Is a Parasitic Disease. H. T. Butlin.
- 2 The Heredity of Insanity. A. R. Urquhart.
- 3 Prognosis in Mental Diseases. R. Jones.
- 4 Postmortem Examinations Which Do Not Reveal the Cause of Death. F. J. Smith.

1. **Carcinoma Is a Parasitic Disease.**—Butlin insists that carcinoma is a parasitic disease, not in the limited sense in which this term is sometimes employed, as synonymous with infective, but in the larger and wider sense in which it should be employed, to express the fact of one organism living at the expense of another, each pursuing its otherwise separate and independent existence. He maintains that the carcinoma cell is an independent organism, like many a protozoan; that it lives a life which is wholly independent and proper to itself; and that it lives as a parasite in the body of the animal which is affected with carcinoma, deriving its nourishment from this host and doing nothing to repay the host for sustenance of which it robs him. The biology of the carcinoma cell is discussed at great length. Butlin urges that a careful study be made of the life history of this cell outside the body of the host, and with this end in view repeated attempts should be made to induce the parasite to thrive and to multiply under artificial conditions which will permit the study of every phase of its existence.

2. **Heredity of Insanity.**—During twenty-five years Urquhart has had 1,104 cases under his care, representing 886 patients; 623 of these individuals were hereditarily predisposed to insanity, eccentricity, neuroses, paralysis or alcoholism, while 394 had a distinctly insane heredity. During the last ten years 304 of 375 persons showed a neurotic and insane heredity, while the heredity of insanity occurred in 180 cases.

3. **Prognosis in Mental Diseases.**—Jones has taken the histories of 230 male patients whose fathers or mothers were known to have been insane. In 10 of these cases both parents were insane; 3 of the 10 patients died of general paralysis. Of the total 230 males the high proportion of 27.4 per cent. had previous attacks; 30 patients died from general paralysis, a proportion of 13 per cent., a slightly higher proportion than occurs in the admissions as a whole, and it is thus seen that general paralysis not only may but does present a hereditary history of insanity. The number of deaths was 87, a proportion of 38 per cent., which is abnormally high, and demonstrates that hereditary insanity tends to extinction. The recovery rate is the same, namely, 38 per cent., which is also higher than among the general admissions. Of those who recovered 13.8 per cent. relapsed during the twelve years, again a slightly higher ratio than occurs among the total recovered of all classes (13.2 per cent.). These facts tend to show that patients with a hereditary neurosis (taking an attack of insanity to indicate this) recover quicker, that they relapse sooner, and that the others die sooner. This is epigrammatically foreshadowed by a high authority, who states that heredi-

tary cases are easier broken down but are easier reset, and that as to recovery, "if a man is to become mad, he had better have a mad ancestry," meaning that the prognosis as to recovery is better when a hereditary taint is recorded.

The Lancet, London. December 16.

- 5 Habit Spasm in Children. G. F. Still.
- 6 New Synthesis of Tyrosin from Anhydrous Prussic Acid and Oxy-Benzaldehyde. W. W. Latimer.
- 7 *Investigations on the Nervous Manifestations of Acute Rheumatism. F. J. Poynton and A. Paine.
- 8 Leptus Autumnalis and Its Skin Lesion. W. MacLennan.
- 9 *Treatment of Tuberculosis of the Urinary System by Tuberculin. J. G. Pardoe.
- 10 Esculin in Conjunction with Flouren Light in the Treatment of Lupus Vulgaris. G. H. Graham.

7. **Nervous Manifestations of Acute Rheumatism.**—Poynton and Paine believe that eventually rheumatic chorea will prove to be a local infection of the nervous system and that most of its symptoms are the result of a slight meningo-encephalitis and possibly meningo-myelitis. Their reasons for this belief are: 1. They have isolated and cultivated the diplococcus from the cerebrospinal fluid in 4 cases of fatal rheumatism, in 3 of which there was chorea at the time of death. 2. They have produced twitching movements, arthritis, endocarditis, and pericarditis by intravenous injections of the diplococcus into rabbits. 3. They have demonstrated the presence of diplococci three times in the cerebral pia mater and once in the brain from cases of chorea. 4. They have demonstrated them in the brain and pia mater of the rabbit that had shown the twitching movements. They report the case of a boy 13 years old who was suffering from arthritis of the ankles and knees. The family history showed that the boy's father had suffered from rheumatic fever, but the patient himself, except for an attack of measles and an operation for adenoids, had enjoyed excellent health. He appeared to be suffering from a very ordinary attack of rheumatic fever, which yielded to rest and salicylate of sodium within four days. Seventeen days later, without any apparent cause, the temperature rose to 102.4; the boy complained of headache and vomited. On the second day following he became unconscious, with fixed, dilated pupils and general muscular rigidity, alternating with flaccidity. The axillary temperature was 102.4; the rectal temperature was 106.4. The boy died comatose the next day. The authors consider this a case of rheumatic meningitis, the clinical diagnosis being confirmed at the autopsy. They believe that these nervous lesions are comparable to rheumatic lesions of other organs.

9. **Tuberculin in Tuberculosis of Urinary System.**—Pardoe used the tuberculin TR, subjecting it to a temperature of 60 C. for one hour. In the greater number of his cases very little local effect was noted at the site of the injection; in 2 cases a decided reaction followed. The tuberculin was given hypodermically with a sterilized syringe, beginning with a dose of 1/500 mg. and increasing this dose every other day until a definite reaction was obtained. The dose was then reduced to that quantity which apparently caused no reaction, and was then given steadily once a week for long periods. During the progress of the treatment the patient's weight and temperature were carefully noted. A cystoscopic examination was made from time to time. Of 21 patients so treated 5 are apparently cured, 4 show a very marked improvement, 6 show no improvement, and 6 succumbed. In one of these Pardoe thinks the tuberculin was the direct cause of death. He says that the more circumscribed the infection the better are the results. In not one case in which the cystoscope showed diffuse infection was much benefit noted. The cases of apparent cure occurred when only a small amount of bladder surface appeared to be involved. He inclines to the belief that for vesical tuberculosis tuberculin is the best remedy at our disposal.

Glasgow Medical Journal. December.

- 11 *Mode of Spread of Breast Cancer in Relation to Its Operation and Treatment. W. S. Handley.
- 12 The Ophthalmoscope in General Medicine. A. M. Ramsay.

11. **Cancer of the Breast.**—According to Handley, cancer of the breast spreads primarily in the parietes along the deep fascia, and not along the skin; hence it appears to be unneces-

sary in all but exceptional cases to remove such a large area of skin as to prevent complete suturing of the wound. He thinks that as a rule it suffices to remove a circular area of skin centered on the primary growth and from 4 to 5 inches in diameter. The incision he makes consists of three parts: 1. A ring incision, as practiced by Mitchell Banks, from 4 to 5 inches in diameter, accurately centered on the growth and surrounding it at a safe distance, slightly tailing off into part 2 above, and into part 3 below. 2. A curvilinear incision for giving access to the axilla. The axilla is opened by turning forward a flap consisting of skin and a thin layer of subcutaneous fat, whose base lies along the anterior maxillary fold. The axillary incision begins at the lower edge of the pectoralis major, close to its insertion. It ends, also at the lower edge of the pectoralis major, by joining the annular incision. It crosses the base of the axilla, and marks out an almost semi-circular flap of skin, whose convexity reaches back nearly to the edge of the latissimus dorsi. It affords perfect access to the axilla and good drainage afterward. 3. A linear incision coming off from the lower and inner part of the annular incision and passing downward for about 2 inches along the linea alba. Its object is to give access for the removal of the deep fascia over the upper part of the abdominal wall. Without it this important step in the operation can not be properly carried out. Handley says that the most convenient way of suturing this incision must be a matter of trial in each case, according to the precise situation of the growth in the breast. Usually, perhaps it will be best sutured in a triadate form. It will, however, never result in a rectilinear scar, nor in one lying along the anterior axillary fold, nor does it remove any presumably healthy skin. It, therefore, avoids the faults of the usual incision without, as Handley believes, any corresponding disadvantages. The pull of the arm being at right angles to the direction of the scar, the cicatrix more readily becomes mobile on the chest. During this process the scar may be stretched to a width of nearly an inch.

Australasian Medical Gazette, Sydney.

November 20.

13. Standard of Ethics and Work in Medicine. D. Colquhoun.
14. Otitis Media, with Involvement of the Lateral Sinus and Temporo-Sphenoidal Lobe. J. Cox.
15. X-Rays in the Diagnosis of Intrathoracic Morbid Conditions. W. H. Read.
16. *Case of Extroversion of the Bladder; Extraperitoneal Implantation of the Ureters Into the Rectum. S. Newland.
17. One Hundred Consecutive Abdominal Sections Without a Death. W. J. S. McKay.
18. Case of Landry's Paralysis. A. S. Joske.
16. Extroversion of Bladder.—Newland reports a successful case of extraperitoneal implantation of the ureters in extroversion of the bladder which had existed since birth. The patient was 7 years of age. At the age of 3 a plastic operation had twice been unsuccessfully performed. On examination a pyriform area of bright red mucous membrane was to be seen in the pubic region. The stalk lay downward and was formed by the penis, which was in a state of complete epispadias. Above and at the sides the junction of skin and mucous membrane was well defined. The latter showed a scarred condition due to the previous plastic operations. The exposed surface of the bladder ended below in the cleft urethra, in the proximal portion of which the vera montanum could be recognized. A transverse sulcus, due to the folding of the urethral on the vesical mucous membrane, existed. When this was opened out by gently drawing the penis downward, the vera montanum and urethral orifices were more distinctly exposed. The latter lay at the summits of two papillae, from which urine gushed forth intermittently, but seldom simultaneously. There was no ulceration of the vesical mucous membrane nor irritation of the surrounding skin. The cleft prepuce was very large. The scrotum was well developed but bifid. The testicles were incompletely descended. They lay below the external ring and could be pushed into the scrotum. No hernia existed. The pubic bones were widely separated. The gap could be felt distinctly. The inner surface of the thighs, instead of meeting at a narrow angle at the perineum, were separated by a wide interval. The anus was dilated and the rectum washed out with salin. solution. The vesical ends of the ureters were then freed according to the method employed by Peters. A No. 3

Jacques catheter was passed into each ureter for about 2 inches and fixed to the urethral papilla, the one with fine silk the other with a fine catgut stitch. A circular incision of as great extent as possible was then made through the mucous membrane around each papilla. This was deepened until the bladder wall was completely cut through. The separation of the ureter from the loose cellular tissue, in which it lay along the wall of the pelvis, was easily effected. Each ureter was exposed for from 1½ to 2 inches. With the left forefinger in the rectum and the right in the suprapubic wound, the anterior and lateral walls of the rectum were defined. A Listér's sinus forceps was passed into the rectum and its fine point thrust through the lateral wall about 1½ inches above the anus. The small wound was dilated by opening the blades of the forceps. The catheter in each ureter was grasped by the sinus forceps and drawn through the wound in the lateral wall of the rectum on the corresponding side. The ureter followed the course of the catheter, the rosette of vesical mucous membrane passing through the wound in the rectum much as a button passes through a buttonhole. The catheter in the left ureter was forthwith removed. The rosette on the right side was not a large one, and it seemed better to leave the catheter in the ureter. The remainder of the vesical mucous membrane was not interfered with. The wound left by the transplantation of the ureters was gently packed with iodoform gauze. The free end of the catheter in the ureter was passed into a bottle containing boracic lotion. The operation, though tedious, was well borne, and the patient did not suffer from shock. Two days after the operation the patient retained his urine from two to three hours during the day, but was troubled with incontinence at night. He gradually acquired more and more control over the flow of urine until at the end of the month he was able to remain dry all day and only occasionally wet his bed at night. Six months later the remaining mucous membrane of the bladder was dissected away. The raw surface was diminished in size by the insertion of transverse Halstead sutures of catgut. The skin was then freed all around, and extensively undermined. As the skin still could not be sutured across the raw surface without tension, a curved incision, with the convexity upward and outward, was made on each side from the upper limit of the raw surface left by the ablation of the vesical mucous membrane to the groin. The wound, when closed, presented a triadate appearance. At the same time an attempt was made to close the proximal portion of the urethra. An incision was made along the junction of skin and mucous membrane. A flap of the latter was dissected up on each side and sutured the one to the other. The skin was undermined and sutured over the urethral mucous membrane. The whole wound healed well, with the exception of the small portion lying over the urethra. A month later another attempt was made to establish a urethral canal. On this occasion the penile urethra was treated as well. The mucous membrane was dissected up on each side and sutured. The skin was joined over this. There was considerable tension, and union again failed. Two months later the whole of the urethral mucous membrane was dissected away. An incision was made through the prepuce at its junction with the glans, and it was then stripped from the under surface of the penis. A large flap of skin was thus obtained. It was next buttonholed, and the glans penis passed through the opening. The flap was then sutured along the dorsum of the penis. On this occasion the wound healed well and the patient was able to return home.

Bulletin de l'Acad. de Médecine, Paris.

- 19 (Year LXIX, Nos. 39-40). *Iodure d'arsénic contre la scrofule et la scrofule-tuberculeuse de l'enfant. R. Saint-Philippe.
- 20 Résultats de l'ablation du cristallin transparent dans la myopie forte. De Font-Reaulx et Chauvel.
- 21 Nouvelles recherches physiologiques sur l'air confiné. N. Grenant.
- 22 Sur la question de l'alcoolisme et de la syphilis sur les feuilles de décès (déclaration on death certificates). Netter, Fournier and others. See foreign news, page 52.

19. Arsenic Iodid in Treatment of Scrofula.—Saint-Philippe has treated 200 children during the last decade with arsenic iodid and has found it very valuable in scrofula and scrofulo-tuberculosis. The hypertrophied glandular apparatus is in a

condition of functional hyperactivity while at the same time there are signs of nutritional disturbances. The iodo-arsenical medication meets both these indications. He orders from 10 to 40 drops of a 1 per cent. solution of arsenic iodid, morning and evening.

Semaine Médicale, Paris.

23 (XXV, No. 50.) *Hysterie Blindness.—La cécité hystérique. Dieulafoy.

23. **Hysterie Blindness.**—In one of the two cases described the blindness was the only apparent manifestation of the hysteria. The patient was a young man of 25, a mason. On his way home from work he suddenly became blind and could not remember the names of the streets where he wanted to go. He was supposed to be drunk, and was taken to the station and then to the hospital. There was a history of well treated syphilis three years before after an unfortunate love affair. He recovered his sight in about two weeks under application of a magnet to the side, bread pills and suggestion, but the blindness recurred six weeks later and again persisted for two weeks. The second patient was a woman of 44, long known to be hysterical, and completely blind and hemiplegic during the last ten months. Vomiting and intense headache had been noted as the blindness first came on. Dieulafoy has collected 59 cases of hysterie blindness including these which he reports. In 5 patients the blindness was the sole manifestation of the hysteria, appearing in apparently healthy persons. The blindness is absolute, but the pupil reflex is retained. Contracture of certain muscles has been frequently noted, especially the muscles of and around the eye. The media of the eye were found normal. The duration of hysterie blindness may be weeks or months, but no case is known in which vision was not finally recovered except in the above case still under observation. Traumatism may cause hysterie blindness which may not develop until weeks or months after the accident. It is liable to persist indefinitely, although in some cases it vanished permanently in a few weeks or months. Severe headache generally preceded the onset of the blindness in all cases.

Archiv f. Verdauungs-Krankheiten, Berlin.

Last indexed XLV, page 150.

- 24 (XI, No. 5.) *Zur Klinik der Speiseröhrenkrankheiten (affections of esophagus). F. Ehrlich.
 25 Elimination of Alloxar Bodies on Meat Diet.—Zur Frage der Alloxar-Körperausscheidung unter dem Einfluss des Fleischgenusses. C. v. Rzentkowski (Warsaw).
 26 *Laws of Mechanics and Hydrostatic Pressure as Basis for New Points of View in Regard to Origin and Treatment of Functional Stomach Affections.—Gesetze der Mechanik, etc. Agéron (Hamburg).

24. **Affections of the Esophagus.**—Ehrlich relates the particulars of 19 cases to illustrate various points in the diagnosis or treatment of affections of the esophagus. In 2 cases the esophagoscope revealed a cancer in the cardia before it was palpable or had induced cachexia, or while total extirpation was still possible. In one case, a man of 43 complained for three weeks of a difficulty in swallowing. Two brothers had died from cancer of the esophagus. Nothing abnormal could be discovered with the esophagoscope, but the disturbances continued and finally a ring-shaped cancer became apparent in the esophagus, completely closing the lumen. A Kader fistula into the stomach answered its purpose perfectly for nearly a year, when the patient succumbed to metastasis in the lungs. In introducing a laminaria tent Ehrlich bores a hole in one end about 1 cm. deep and inserts a fine sound in the hole, winding the stout thread from the tent around the handle. This holds the tent firm, while it does not interfere with vision as much as when the tent is held with forceps.

26. **Treatment of Stomach Troubles.**—Ageron's work is based on more than 5,000 examinations of the stomach content and conditions. They appear to show that the standards for gastric digestion and evacuation of the stomach generally accepted are incorrect. A test meal of 250 gm. tea, 100 gm. bread and butter and one egg is totally evacuated in two hours, while six are required for the evacuation of a meal of soup, 250 gm. meat with potato, vegetable and preserves, under normal conditions, the individual sitting or standing. Normal conditions presuppose an elastic counter pressure on the part of the walls of the stomach to the pressure of the fluids in the stomach. If for

any reason this elastic counter pressure is defective, the weight of the ingested fluids forces down the stomach and it sags below the horizontal line of the umbilicus, the surface of the fluids being so low down that the weak muscular contractions of the stomach walls fail to drive the fluid toward the pylorus. Evacuation, consequently, is delayed and the food is not properly expelled as it should be to ensure normal intestinal digestion by the due interaction of the digestive reflexes at the proper time. By lying down, especially if the individual lies on the right side and with the pelvis raised, the food in the stomach is brought up to the pylorus, and evacuation proceeds easily and rapidly. The benefits of "mast cures," that is, rest in bed with forced feeding, are due to the horizontal position assumed and the consequent relief of the sagging stomach. The characteristic element of a physiologic stomach is the tension of the stomach wall after ingestion of food and the concentric counter-pressure thus exerted. The motor sufficiency of the stomach is dependent on the degree of tension and the intensity of the counter-pressure. The large majority of stomach disturbances are merely the result of a permanent disproportion between the weighing down of the stomach walls by fluid or other food, overhastily ingested, that is, taken in too brief a time, and the physically possible counter-pressure on the part of the walls. Agéron adds that the evidence of dynamic disturbances in the stomach can be obtained with certainty only by repeated test risings. The sagging of the fundus and greater curvature causes a vicious circle, reducing constantly more and more the power of concentric contraction of the stomach walls. Pregnancy will sometimes cure by lifting up the stomach and thus bringing the contents nearer the pylorus, so that they can be readily evacuated. Horizontal rest cures are indicated in all cases of motor gastric disturbances dependent on a reduction in the power of concentric counter-pressure in the muscles of the walls of the stomach. In conclusion he emphasizes the point that the positive or negative result of the horizontal rest cure may be accepted as a criterion for or against the necessity for operative treatment of protracted gastric affections with severe motor disturbances.

Berliner klinische Wochenschrift.

- 27 (XLII, No. 43, Oct. 23.) Comparative Anatomy of Brain. —Ueber die Herkunft des Hirnmantels in der Tierreihe. L. Edinger.
 28 Wert der refractometrischen Elweise-Bestimmung bei der Differential-Diagnose zwischen Exsudaten und Transsudaten (refractometric differentiation). K. Engel (Koranyi's clinic, Budapest).
 29 Ueber Dialyse und einzelne ihrer Anwendungen (applications of dialysis). R. P. van Calcar (Leyden).
 30 Zum Kapitel der nervösen Blasenstörungen (bladder disturbances). J. Vogel.

30. **Nervous Bladder Disturbances.**—Vogel reviews considerable literature on this subject, his general conclusion being that some organic cause for the bladder disturbance can almost always be found on diligent search. The nerve connections between the abdominal organs are remarkably close and complex, which may render difficult the differentiation of the source of the trouble. He mentions examples and also cites cases of true neuroses. They are especially frequent among public speakers and actors, who dread to be disturbed by desires to urinate during their appearance in public. He mentions the case of a clergyman who always catheterized himself before his sermon to make sure that his bladder was empty. Peculiar bladder disturbances are sometimes noted in patients in whom the cystoscope reveals extreme hypertrophy of the bladder with the muscular bundles very apparent ("Balkenbent"). Some of these patients present indications of incipient tabes. There are no true bladder crises, but merely occasional sensations of oppression and discomfort in the bladder region, and urination may be difficult. There are never increased desires to urinate. The disturbance in the central nervous system causes disturbance in the bladder functions which in time induce severe anatomic changes in the bladder. A disturbance in some part of the urogenital system may cause pains to radiate to some other part of the system, as for instance, the pains radiating to the glans penis in case of stone in the bladder, or radiating to the bladder from the prostate in case of chronic inflammation of the latter. The bladder pains are liable to

persist after the trouble in the prostate has subsided. Residual urine has been noted in young men in case of chronic prostatitis, evidently due to spasmodic contraction of the sphincter elicited from the prostate. Frequent desires to urinate are sometimes the only symptom of incipient tuberculosis of the kidney. Hirt recommends the tuberculin test in these puzzling cases before the urine and bladder show essential changes. Enuresis at night has sometimes been observed in women as an additional symptom. Disturbances in the female genitalia, as also in the rectum, are liable to cause bladder disturbances. Lead poisoning and carbonic acid gas, turpentine and other intoxications frequently render urination difficult. Referring to the nervous retention of urine after operations, etc., Vogel remarks that patients with chronic cystitis or prostatitis are undoubtedly unfavorably affected by sudden chilling, especially of the skin. Appendicitis is liable to induce morbidly increased desires to urinate.

Dermatologische Zeitschrift, Berlin.

Last indexed XLV, page 110.

- 31 (XII, No. 6.) Ueber Besonderheiten beim Lupus erythematosus. W. Bornemann.
- 32 Ueber eine durch *Scilla maritima* hervorgerufene vesikulöse Dermatitis nebst Bemerkungen über die Bedeutung der Papillen. E. Hoffmann.
- 33 (No. 7.) Peculiar Changes in Skin Over Meningocele.—Eigentümliche Veränderungen in der Haut über eine Meningocele. M. Wolters.
- 34 *Roentgen-behandlung der Syccosis simplex. G. Scherber.
- 35 Fall von gonorrhöischer Myelitis. M. Bloch.
- 36 *Zur operativen Behandlung der Hirn-Gumma und der syphilitischen Schädeldachnekrose (of skull). Voss (Breslau).
- 37 (No. 8.) Ueber einen Fall von z. H. gangränösen Chancres mixtes an Lippe und Zunge mit später auftretendem Pseudochancere am Unterarm. E. Hoffmann.
- 38 Zur Kenntnis des Pigmentes. H. Vörner. (Concluded.)
- 39 Ein Fall von befürchteter Pigmentanomalie der Kopfsaare (of hair). H. Vörner.
- 40 Zur Therapie des Unterschenkelgeschwurs mit "doppelter Binde" (double bandage for leg ulcers). (Vorläufige Methode). H. Rath.
- 41 Importance of Pigment for Light-Colored Races.—Die Bedeutung des Pigmentes für die hellfarbigen Menschenrassen. F. B. Solzer.
- 42 Cutaneous Affections in Relation to Metabolism.—Krankheiten der Haut in Verbindung mit den Krankheiten des Stoffwechsels. L. D. Bulkley.
- 43 (No. 10.) Exsudationen und Keratosen. Prof. J. F. Selenow (Charkow).
- 44 (No. 10.) Zur Anatomie der Schleimhaut-Affektionen bei Lichen planus (Wilson). F. v. Poor.
- 45 Ueber das Zusammenstreffen von Lichen ruber und Diabetes mellitus nebst Mitteilung des histologischen Befundes bei Lichen sclerosus. E. Hoffmann.
- 46 Ueber Fibroma mollusum Virchow. H. Vörner.
- 47 Zur Pathologie der spitzen Kondylome. J. Veller.
- 48 *Relations Between Skin and Kidney Affections.—Welche Beziehungen bestehen zwischen Haut- und Nierenkrankheiten. B. Glaserfeld (Berlin). (Concluded.)
- 49 Ein asymmetrisches Taschen-Injektions-Besteck (pocket case for injections). Blanck (Potsdam).
- 50 (No. 11.) Ueber einen eigentümlichen Fall zirkukskriptier, profuser Hautalk-Sekretion (of sebum). F. v. Marschalko.
- 51 Ueber den jetzigen Stand unserer Kenntnisse von der *Sprochaete pallida*. H. Hübner.
- 52 *Weitere Mitteilungen über den Wert der statischen Elektrizität für die Behandlung parasitärer Dermatosen. Suchier (Freiburg).
- 53 *Die Erzielung von Analgesie auf endermatischem Wege. L. Fürst.
- 54 (No. 12.) *Behandlung der chronischen Gonorrhoe mittelst Glimm-Licht ("glümmur light"). H. Strebel (Münchh).

34. Roentgen Treatment of Syccosis.—Scherber describes the histologic findings in a case of simple syccosis cured by Roentgen exposures. The active hyperemia of the inflammation was superseded by congestive hyperemia under the influence of the exposures. The curative action of the rays is probably due to the destruction of the cocci, supplemented by the absorption-promoting influence of the exposures.

36. Operative Treatment of Gumma of the Brain and Necrosis of the Skull.—Voss reviews the cases of operative treatment of syphilitic cranial and cerebral lesions that have been published, and reports a case from his own experience. He cites 20 communications on the subject. The operation was not undertaken until after the complete failure of antisiphilitic treatment. In one instance a gummatous lesion of the frontal brain was supposed to be an affection of the motor region owing to the Jacksonian epilepsy observed. His patient was a woman of 71 in good circumstances who presented extensive necrosis of the forehead, reaching from the bridge of the nose nearly to the vertex and beyond a line through the outer margin of the orbit on both sides. The first signs of ulceration had been noted 20 years previously and the ulceroscriginous lesion had

gradually attained its present proportions without impairment of the general health or causing brain symptoms until a recent secondary meningitis developed. The patient had never had any specific treatment. The necrotic part of the skull was removed and also a softened gumma beneath. As the patient roused from the anesthetic the meningitic symptoms had abated and her mind was clear. Energetic mercurial treatment was instituted at once and the patient regained health rapidly. There was no temperature and the pulse was regular until signs of intercurrent hypostatic pneumonia developed, and the patient succumbed about two weeks after the operation. In a second case, sequestra from a syphilitic lesion in the parietal bone were removed on several occasions, with the complete subsidence of all symptoms. The patient was a woman of 39. Energetic mercurial treatment had failed to relieve the symptoms of pressure on the brain.

48. Relations Between Skin and Kidney Affections.—Glaserfeld did not find evidences of a kidney affection in idiopathic atrophy of the skin, lichen or prurigo. He does not admit any causal connection between kidney affections and progressive and retrogressive nutritional disturbances, or neuritic and parasitic dermatoses, or chronic infectious processes. Occasionally the cutaneous and the kidney affection may both be due to a single primary cause. Kidney affections are frequent, however, in inflammations and circulatory disturbances in the skin. They were found almost invariably in impetigo herpetiformis, in erythematata, urticaria, purpura, eczema, acute pemphigus, circumscribed edema and Raynaud's disease. The kidney trouble is generally mild, and comes under the vague heading of "toxic nephritis." On the other hand, kidney affections are liable to be accompanied by pruritus, dermatitis exfoliativa, furunculosis, urticaria, eczema, gangrene of the skin, pemphigus and erythematata. The cutaneous affections in this case are very rebellious and generally yield only to treatment addressed to the kidneys. The article is an extensive one, based on large personal clinical experience and research.

52. Static Electricity in Treatment of Parasitic Dermatosen.—Suchier calls attention to the cure of chronic eczema, fungoid mycosis and superficial cancer which he has effected by the use of static electricity. The power need not be more than 0.5 horse power, the rotations not less than 500 nor more than 1,000, and the electrodes must terminate in a non-conducting tip of cork or wood. This enhances the effect remarkably. Seven cases are described and illustrated as typical examples of the excellent results attained. The article concludes with an array of arguments in favor of the parasitic theory of the origin of cancer. The behavior of the cancer cells under static electricity is a strong point in favor of this view, he remarks.

53. Analgesia by Endermatic Route.—Fürst applies the term endermatic to the application of drugs rubbed into the skin. He has found that gentle rubbing is not experienced unpleasantly even in case of articular rheumatism, while it is the best way to administer the salicylates, he thinks. He uses Bengue's formula: 10 equal parts of methyl salicylate and menthol with 12 parts of lanolin. He rubs a piece about the size of a bean into the joint, using a wad of cotton, and then covers the part with an impermeable dressing to prevent evaporation, repeating the application every three or four hours. The spot is washed off with tepid water twice a day. The above combination is the most powerful analgesic he has ever tried, while it does not irritate the skin. He has found it equally valuable in neuralgias, in pleuritic pains, in ovarialgia and in 2 cases of painful gastric ulcer.

54. Radiotherapy of Chronic Gonorrhoea.—Strebel's efforts to apply radiotherapy to urethral affections have been duly chronicled in these columns. He found that it was impossible to influence the urethra from without; the light must be introduced into the urethra to obtain any effect. He accomplishes this by a system of quartz rods on which a powerful electric light is concentrated. The quartz transmits the light as ultra-violet rays alone. This system is too elaborate for general use, and he has now simplified the technic, using a contrivance by which a spark passing through a quartz tube

emits a bright light, which he calls the "glimmer light." A spark from 15 to 20 cm. long is sufficient for the purpose. The quartz tube is inserted and the current turned on for from forty minutes to two hours, the aim being to induce an inflammatory reaction to the light inside the urethra. He relates his experience in detail with 3 out of 55 cases in which he has effected a cure by this means. All were of the chronic, rebellious type, refractory to all other methods of treatment. The influence of the light treatment was so unmistakable that he believes that it deserves wide attention. He has not had a failure in any instance. His "glimmer light" contains more active rays than any incandescent light he has tested.

Monatsschrift f. Geb. u. Gynäkologie, Berlin.

Lost indexed XLV, page 113.

- 55 (XXI, No. 6.) Zur Kasuistik der Nabelzysten (umbilical cysts). Bondl.
- 56 *Gangrän nach Eklampsie. I. Guthrod.
- 57 Fall von vaginaler Ovariectomie während der Geburt (during delivery). E. Petersen.
- 58 *Ueber die Therapie bestimmter, der Behandlung schwer zugänglicher Endometritis-Formen. O. Schaeffer.
- 59 *Ueber Diathermie nach Ventrifixo uteri (permanent results). F. Weindler.
- 60 (XXII, No. 1.) *Einfluss der Menstruation auf den Gesamt-Organismus der Frau (influence of menstruation). M. Tobler.
- 61 *Vitality of the Prematurely Born.—Ueber die Vitalität frühgeborener Kinder. A. Ostrell.
- 62 *Phototherapy in Gynecology.—Die chemischen Strahlen in der gynäkologischen Therapie und die Anwendung der Phototherapie bei Krebs und Tuberkulose der Gebärmutter. E. Curatulo.
- 63 *Ein Beitrag zur Kasuistik der Lithopädien. R. Lumpe.
- 64 Abnabelung und Nabelkrankung (affections of umbilicus). Hartz.

56. Gangrene After Eclampsia.—Guthrod has had 2 patients with eclampsia exhibit gangrene of the skin. One patient required amputation of the leg. The kidneys were so seriously affected that they were unable to eliminate all the eclampsia poisons, and he thinks that their elimination through the skin entailed the gangrene. The kidneys could not eliminate even albumin. He has always noticed that very slight albuminuria is the invariable precursor of eclampsia.

58. Treatment of Rebellious Forms of Endometritis.—Schaeffer discusses principally the treatment of the obstinate mixed infections of the uterus in middle age and also hemorrhagic cirrhotic metritis at the menopause, exfoliation of the mucosa during menstruation, and other rebellious and comparatively inaccessible affections of the uterus. He points out that glandular hyperplasia with hypoplasia of the uterus, occurring in girls or young women, is frequently a manifestation of tuberculosis, and general measures to combat tuberculosis are especially indicated in these cases. He outlines the special indications for each form of metritis, including also what he calls hypoplasia glandularis endometrii and hypoplasia or dysplasia decidue basalis.

59. Remote Results of Ventrofixation.—Weindler has been investigating the present condition of 51 women on whom ventrofixation was done by Leopold between 1896 and 1903. Of this number 38 were personally examined at least three years after the operation, and all but 8 were found absolutely free from disturbances. Eleven of the women had borne children since and the pregnancy and delivery were normal in 8 cases; the children were born before term in 2 cases. Leopold now has a record of 124 cases of ventrofixation with the best possible after-results. His technic seems to answer all purposes and Weindler says that it is applicable to all cases of retroflexion. When this technic is closely followed, he claims no disturbances are observed in subsequent pregnancies.

60. Influence of Menstruation on the General Organism.—Tobler of Florence has been investigating the local and general disturbances and the influence of menstruation on the physical and mental capacity, extending his research to 1,020 women. His summary states that the menstrual period in the women of our day is generally a time of more or less physical depression and languor. This is not as Nature intended nor is it necessary. It is the result of modern modes of life, and of a less vigorous constitution. The products of metabolism are increased in amount at this time by the periodical excitation from the genital system, but instead of being systematically

utilized to the profit of the body, they accumulate and have a toxic action. Many women do not experience this menstrual physical depression at first, but it gradually comes on them later, showing its acquired character. Other women never experience any physical depression or languor at this time. Still others find it a period of exalted vital energy and exhilaration. This latter is the theoretical ideal, and, he thinks, is probably what Nature intended for the period in which a new living being can be formed and developed.

61. Vitality of Prematurely Born Children.—Ostrell's assertions are based on the literature and on examination of 1,542 prematurely born children at the Prague maternity. He accepts 44 cm. as the minimum height and 2,000 gm. as the minimum weight for the children under discussion, and states that he was unable to find that they showed less resisting powers during their later life than children born at term. The morbidity and mortality during infancy and early childhood were not materially higher than those of ordinary children.

62. Chemical Rays in Gynecology.—Curatulo describes and illustrates an apparatus he has devised for the purpose of applying the chemical rays to the interior of the uterus. They have a sedative and resolving action as well as a bactericidal, and he thinks that they are indicated in cancerous and tuberculous processes in the female genitalia. He urges further trials of what he calls hystero-photo-therapy, prophesying a brilliant future for it.

63. Lithopexion.—The lithopexion in the case reported by Lumpe was extracted from the abdomen of a woman of 64 twenty-five years after the rupture into the abdomen of a seven months' tubal pregnancy.

Therapie der Gegenwart, Berlin.

Lost indexed XLV, page 1529.

- 65 (XLVI, No. 11.) *Ätiologie und Therapie der Arteriosklerose. G. Klemperer.
- 66 Erfahrungen über intravenöse Collargol-Injektionen bei Erysipel. A. Ritterberg.
- 67 *Zur Kenntnis der überhaften tertiär-syphilitischen Organ-Erkrankungen. W. Sobernheim.
- 68 Wann muss der Arzt auch in der Land-Praxis zur Operation bei Blinddarmentzündung raten (operation in appendicitis)? F. König.
- 69 *Zur Behandlung der Diarrhoe mit flüssiger Gelatine. G. Mann und Herzberg.
- 70 *Zur Behandlung der Hämorrhoe. Cecilias (Bucharest).
- 71 *Zur radikalen Behandlung des Pruritus ani. Klein.

65. Causes and Treatment of Arteriosclerosis.—Klemperer describes 2 cases of arteriosclerosis in men of 37 and 44 who had long smoked from 30 to 100 cigarettes a day or from 6 to 12 cigars. The circumstances of the cases suggest that the tobacco alone was responsible for the arteriosclerosis. In another man of 45 sexual excesses were likewise the sole etiologic factor that could be discovered. The patient was unmarried and of a robust constitution. A third patient was a man of 35, married for 11 years, with two healthy children 9 and 10 years old. Since the birth of the last child intercourse had been frequent, but exclusively by coitus interruptus. These 2 cases, Klemperer states, emphasize the importance of the sexual factor in the etiology of arteriosclerosis. He reports in conclusion a case of pronounced arteriosclerosis with enlargement of the heart in a man of 52 somewhat addicted to alcohol and tobacco. The patient took 1 gm. of sodium iodid regularly for two years with remarkable subsidence of all his symptoms, the dosage one tablespoonful of a 5 per cent. solution in a glass of milk after dinner. The heart has returned to normal size and the blood pressure and tension of the vessel walls are much reduced. The systolic murmur has vanished, possibly from regeneration of something abnormal in the wall of the aorta. The patient has eaten ordinary mixed diet without regard to its lime content, but he was advised against carbonated baths.

67. Febrile Tertiary Syphilitic Affections of Viscera.—Sobernheim's first patient was a woman of 36 with enlarged liver and spleen. Once or twice a week the temperature rose abruptly, accompanied by a violent chill, vomiting and colic pains in the stomach. The temperature subsided each time with a sweat. Quinin was given without effect and also arsenic. As the liver region grew more and more painful and the febrile attacks

more frequent, the abdomen was opened and the liver exposed. It presented the typical characteristics of the syphilitic liver, and was twisted on its axis, with adhesions connecting it with the stomach. The patient was put on potassium iodid and all symptoms subsided. During the six months since she has had no disturbances, and although the liver and spleen are still enlarged they are not sensitive to pressure. The second patient was a syphilitic man of 44 whose right shoulder had been fractured in 1903. Since then there had been pulmonary disturbances, a cough and inability to lie on the left side without distress. The temperature rose high in the evening, with a slight chill; induration was noted in the lower lobe and apex of the left lung. In six weeks the entire lung had become transformed into pure cirrhotic tissue and the patient succumbed to hemoptysis. A remarkable feature of this case was the absolute inefficiency of all treatment, specific or otherwise, to influence the temperature and course of the affection. The postmortem findings are described; the changes found in the glands were sufficient to account for the hectic fever.

69. **Fluid Gelatin in Diarrhea.**—Mann and Herzberg corroborate Cohn's statement that fluid gelatin has an excellent effect in certain cases of diarrhea. If a 10 per cent. solution in distilled water is boiled for six hours and then filtered, the resulting fluid keeps clear and fluid for days. Herzberg has for years ordered a soup made of calves' feet (about one pound to one quart of water, boiled down to one pint), in diarrheal conditions in children and in typhoid fever. It checks the diarrhea while nourishing the patient. In one case severe intestinal hemorrhage was apparently arrested by it. Mann urges further trials of the fluid gelatin in non-tuberculous intestinal ulceration. In his experience the persistence of the diarrhea under the gelatin treatment indicated a tuberculous process. Such do not seem to be influenced by it.

70. **Heat in Treatment of Gonorrhea.**—Cecikas has had unusually excellent results in his local treatment of gonorrhea since he has been heating the fluids injected to about 117 F.

71. **Thermocauterization for Pruritus Ani.**—Klein applied the flat Paquelin burner to the anus and around it in a severe case of pruritus ani in a child. The cure was complete. This treatment, he suggests, might prove useful in certain cases of persistent pruritus vulvae.

Riforma Medica, Naples.

Last indexed XLV, page 1539.

- 72 (XXI, No. 28.) *Carcinoma della testa del pancreas. D. Pirrone.
- 73 *La narcosi morfioscopolaminica associata alla clorofornica. N. Palermo.
- 74 (No. 29.) *3 Casi di distrofia acquisita. M. Landolfi.
- 75 Sulla presenza dello spirochete pallido nel sangue e nelle manifestazioni secondarie dei sifilici. I. Bandi and F. Simonelli.
- 76 *Dell'edema acuto angioneurotico o morbo di Quinke. A. Zilocchi.
- 77 *Le esclusioni intestinali. P. Longo. (Commenced in No. 26.)
- 78 (No. 30.) *La cura della rabbia col raggio del radio (radium treatment of rabies). G. Tizzoni.
- 79 Nuovo contributo alla patogenesi della malattia di Dupuytren. A. Testi.
- 80 Contributo alla diagnosi delle ferite penetranti nell'addome con lesione intestinale (diagnosis of stab wounds of abdomen). A. Poppi.

72. **Cancer of the Head of the Pancreas.**—In the case described there were no symptoms suggesting disturbance in the pancreas. A secondary carcinoma in the liver masked the primary growth in the pancreas, and the absence of glycosuria or any symptoms pointing to the pancreas caused this organ to be disregarded. Chronic icterus with absolute and constant intestinal acholia does not belong to the clinical picture of any variety of primary cancer of the liver. When it is observed, even with entire absence of symptoms pointing to any other organ, yet it should suggest that the primary neoplasm may be found in some other organ, pressure from which might obstruct the flow of bile.

73. **Scopolamin-Morphin Anesthesia.** Palermo reports from Tricomi's clinic 154 cases in which the operation was performed under chloroform, preceded by an injection of scopolamin hydrobromate and morphin. He was favorably impressed, especially with the relief from apprehension before the operation and the calm sleep for two hours afterward. The patient

comes to the table drowsy or actually asleep, and there is no excitement and no vomiting afterward, with rare exceptions. (See reply to correspondent on this subject on page 1817 of the last volume of THE JOURNAL.)

74. **Acquired Dextrocardia.**—Landolfi describes 3 cases in which the heart was found at the autopsy to have undergone a double rotation on its vertical axis, bringing the apex to the right of the sternum, and on its longitudinal axis, bringing the left ventricle forward. There was also torsion of the pedicle of the heart, with a slight fold in it, not large enough to close the lumen of the aorta. The cause of the displacement was pyothorax or pneumothorax, or both. The cases indicate the importance of prompt thoracostomy when there is reason to suspect displacement of the heart.

76. **Acute Angioneurotic Edema.**—The patient was a somewhat dyspeptic man of 43 who had long suffered from attacks of supposed asthma. Four years ago edema of the face was observed, rapidly increasing to large proportions in an hour and a half and then disappearing nearly as promptly. These attacks of edema were sometimes preceded by pruritus; gradually a larger extent of surface became involved and the attacks lasted longer, sometimes for two days. The edema generally appeared during an interval between attacks of asthma. They were never observed together. Each generally followed some excess in diet, and came on abruptly, subsiding in the same way at first, but gradually the attacks became longer and the intervals shorter. Zilocchi is convinced that both are manifestations of angioneurotic edema, and that they are generated by intoxication and infection following disordered metabolism.

77. **Exclusion of the Intestine.**—Clinical experience and experimental research have convinced Longo that it is practicable and advantageous under certain circumstances to shut off part of the intestine from the digestive tract. The technic which offers the best results is, he believes, the exclusion of the affected portion of the bowel by implanting its lower end in the lower part of the intestinal tract. This obviates the inconvenience of an artificial anus, while it also avoids the dangers of total exclusion of part of the intestine. In the case described the colon and cecum were excluded from the intestinal tract. Secretions accumulated in the excluded gut and putrefied, with resulting perforation and fatal peritonitis. In experiments on dogs this result was also observed, but nothing of the kind occurred when the excluded portion was implanted in the gut below, affording an outlet for its secretions, which were voided with the stools. Dogs thus operated on are lively and in good health months afterward.

78. **Radium Treatment of Rabies.**—See account of Tizzoni's research, page 2033 of the last volume of THE JOURNAL.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

MANUALE DELLA MALATTIA DEI BAMBINI. ("Treatise on Diseases of Children"). By Drs. J. M. Taylor and W. H. Wells. Translated into the Italian by Dr. M. Flamini, with preface by Professor L. Concerti, and annotations by Professor F. Valassina. Cloth. Pp. 862. Turin, Italy: Unione Tipografico-Editrice, 1905.

VERHANDLUNGEN DEUTSCHEN RECHTENGESELLSCHAFT. Band I. Verhandlungen und Berichte des Ersten Kongresses vom 30. April bis 3. Mai 1905, in Berlin. Redigiert von Dr. Albers-Schönberg-Hamburg. Paper. Pp. 248. Hamburg: Lucas Grafe & Sille, 1905.

MONTHLY SUMMARY OF COMMERCE AND FINANCE OF THE UNITED STATES. Department of Commerce and Labor, Bureau of Statistics. No. 4. Series 1905-1906. October, 1905. Paper. Washington: Government Printing Office, 1905.

MATERIA MEDICA FOR NURSES. By J. E. Groff, Ph.G. Third Edition Revised. Based on the Eighth Decennial Revision of the U. S. Pharmacopoeia. Cloth. Pp. 176. Price \$1.25. Philadelphia: P. Blakiston's Son & Co. 1905.

MACKINAC, FORMERLY MICHELMACKINAC. A History and Guide Book, with Map by J. R. Bailey, M.D., Commissioner of Mackinac Island State Park. Macmillan Edition. Fifth Revision. 1904.

COUNSELS AND IDEALS. From the Writings of William Osler. Cloth. Pp. 277. New York: Houghton, Mifflin & Co. 1905.

Cloth. Pp. 231. Price, \$1,000. Ann Arbor Plant: Richmond & Hackus Co.

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Addresses

THE THEORY OF NARCOSIS.*

PROF. HANS MEYER,
University of Vienna.

I esteem it a high honor as well as a great pleasure to address you on this occasion and to have been asked to open the first course of lectures of the Harvey Society. The establishment of these lectures is additional evidence, if such be required, of the great interest displayed by American physicians in theoretical conceptions and in scientific research, and, in addition, of an earnest effort to encourage and diffuse such knowledge.

I look, however, on the invitation extended to me as evidence of your friendly and fraternal sentiments toward the whole body of German scientists, and I may be permitted on their behalf to offer you an expression of their cordial appreciation.

Following the suggestion of your president, I have selected as a theme for this evening's lecture a subject which, for a long time, has repeatedly attracted and interested not only pharmacologists, but biologists as well, namely, the relationship between the pharmacologic action of a drug and its recognized chemical or physical properties. The solution of this problem presents great difficulties. Even with a knowledge of the chemical and physical properties of an active substance it is yet impossible, without further knowledge, to determine which of these properties is responsible for the specific action on the animal organism. And this the more so, since we do not know the chemical point of attack in the organism, and hence can not know the nature of the chemical reactions which occur between poison and protoplasm. Only in one way can we reach a conclusion that admits of probability. If we find a large series of different substances with different chemical and physical properties, which all possess identical or else very similar pharmacologic actions, then we can fix on the chemical and physical properties common to all and on which the common pharmacologic action naturally depends. So, for example, out of a mass of keys different yet all able to open the same lock we can determine which part of each key is the essential one, what form common to all fits the lock. And it is hardly necessary to point out that from this we can obtain an insight into the construction of the lock itself. In our case this means an insight into the chemical organization of protoplasm.

The first experiment in this direction was made by two English investigators—Crum-Brown and Fraser. They discovered the notable fact that practically all the ammonium bases, that is, organic bases in which the pentavalent nitrogen is connected with four valencies to carbon, exercise the same pharmacologic action, regardless of other differences in their constitution and nature;

the action in this case being the same as that of curare, a paralysis of motor nerves. This definite relationship has been confirmed by many investigators, but the explanation for it is still lacking. It appears to me possible that the strongly basic character of all these ammonium bases is the chief factor. They are much more strongly basic than alkaloids and even sodium and potassium, and the few exceptions, such as betain, antipyrin and others which do not possess this strongly basic character, are also without the curare-like action.

Another series of experiments along this same direction, in connection with the action of the neutral alkali salts, has been conducted by Hofmeister. He has shown that all the effects of these salts, including their laxative and diuretic actions, may be explained by their physical properties, their diffusibility and osmotic strength.

This brings us to a third especially large group of substances whose actions are all identical in principle. I refer to those substances which are commonly designated anesthetics. To this group belong bodies quite distinct from each other chemically; alcohols, aldehyds, ketones, esters, ethers and numberless others. They all possess the common action of depressing the central nervous system. Wherein is the relationship? On which of their common properties is their narcotizing action dependent? The chemical composition of the nervous system itself gives the first clue for an understanding. It differs from all other tissues in its richness in fat-like constituents, and on the basis of this peculiarity Bibra and Harles attempted many years ago to explain the action of anesthetics. They found that the anesthetics dissolved ordinary fat, and, as a result of a quantitative estimation of the fat content of the brain of a normal and narcotized animal, assumed that the anesthetics directly removed fat-like substances from the brain. But these conclusions could not be confirmed. From another standpoint, however, Hermann arrived at a similar opinion of the action of narcotics. Hermann had discovered the presence of lecithin in the red blood cells, and since the anesthetics, such as ether, chloroform, etc., dissolve the blood cells, he explained this by their power of dissolving lecithin, and pointed out the parallelism between this process and the narcosis of the central nervous system. In both of these hypotheses there appeared to me to be an element of truth, and in order to establish this and define its character I myself instituted a series of experiments.

I started with the following assumption: If fat-solubility is indeed a necessary condition for narcotic action it is to be expected that all indifferent, fat-soluble substances must act as narcotics if they can enter the cells, and that, on the other hand, if by any circumstance they lose their fat-soluble property, then they must also become inactive. I have tested this assumption by investigating a series of substances made by combining components which in themselves had no narcotic action, but whose combinations were soluble in

* This, the first lecture in the Harvey Society course, was delivered at the New York Academy of Medicine, Oct. 7, 1905.

fat. As examples may be mentioned the amides of organic acids. These amides are neutral compounds which are soluble in fat and which all possess the typical narcotic action, with, however, one single exception, carbamide, and this particular one is insoluble in fat. Another group (comparable to the amides) is composed of condensation products of glycerin; the chlorhydrins, acetins and glycerin-ether. These also are soluble in fat and act as narcotics. All these substances, however, are very readily split up by hydrolysis into components insoluble in fat and on such decomposition lose immediately their narcotic power.¹

Now, if from these and similar observations the conclusion can be drawn that the solubility of an anesthetic in fat is certainly one of the conditions for narcosis, the further question presents itself whether this condition is an essential one and whether it can be utilized as a measure of narcotic power. Were this the case, a quantitative relationship between narcotic power and solubility in fat must exist. But it is obvious that other factors must influence the action of narcotics in the animal body, for their affinity for the watery components of the body, as well as that for the fat-like constituents, must be considered. According to their relative solubility in the fat-like and non-fat-like constituents of the body they will distribute themselves between those constituents. So, for example, such substances as are very little soluble in water will dissolve for the most part in the fat-like constituents.

Richet had previously made the observation that the anesthetics which are little soluble in water possess a marked narcotic action, and he regarded this relationship as a general law. As a matter of fact, however, from this single relationship no general law can be deduced, for substances such as alcohol and chloral, which are both equally soluble in water, possess very different narcotic powers. The proper expression of the law must, therefore, be that the distribution relationship, the so-called distribution coefficient, of the narcotics between fatty and watery solutions, is the determining factor of narcotic action. To test the correctness of this hypothetical law I have determined the strength of action of a large number of different narcotic poisons by estimating the smallest molecular concentration of their solutions which was sufficient to induce narcosis of small fish and tadpoles placed in them. A second series of experiments was then carried out with the same substances for the purpose of determining their distribution coefficient between water and fat. A mixture of water and oil was used to estimate the relative quantities passing into these two substances. The comparison between the distribution coefficient so obtained and the narcotic strength of the narcotics did, as a matter of fact, yield the expected result, as a glance at the following table reveals:

TABLE SHOWING THE RELATIONS BETWEEN THE DISTRIBUTION COEFFICIENTS, F/W, AND THE CONCENTRATIONS, EXPRESSED IN GRAM MOLECULES, OF SOLUTIONS EXERTING EQUAL NARCOTIC ACTION.

| | F/W. | Concentration. |
|----------------|-------|----------------|
| Telonal | 4.4 | 0.0013 |
| Tetranal | 4.0 | 0.0018 |
| Butylchloral | 1.6 | 0.002 |
| Sulphonal | 3.1 | 0.0067 |
| Bromalhydrate | 0.7 | 0.002 |
| Benzonal | 0.6 | 0.002 |
| Triacethin | 0.3 | 0.016 |
| Diacethin | 0.23 | 0.015 |
| Chloralhydrate | 0.22 | 0.025 |
| Acetylurethane | 0.14 | 0.025 |
| Mononocethin | 0.067 | 0.027 |
| Methylurethane | 0.04 | 0.4 |
| Acetyl alcohol | 0.03 | 0.5 |

1 The amides yield fatty acids and ammonia salts, the glycerin derivatives, glycerin and acetic or hydrochloric acids.

With an increase in the distribution coefficient there occurs an almost parallel increase in the narcotic strength, that is, decrease in the molecular concentration necessary for narcosis. The few departures from the general rule which occur in the table can be explained by the naturally inexact method of estimating the narcotic power.

A further proof of the correctness of the view described may be offered. It is known that the solubility of most substances in water and fat changes in a different way with variations in temperature. The distribution coefficient is also variable according to temperature. It must be expected, then, that the narcotic strength as well will vary with changes in temperature. And this is the fact. I examined six substances, of which with higher temperature three gave higher and three lower distribution coefficients. And it was found that in exact accordance with the rise or fall of the distribution coefficient so the narcotic strength rose or fell, so that tadpoles which were just narcotized by a certain chloralhydrate solution at 30 degrees C. were aroused and quite active on cooling to 3 degrees, and on subsequently warming to from 25 to 30 degrees again passed into narcosis. From this the direct dependence of narcosis on the physical relationship of the narcotic to the fat-like substances, the lipoids of the body, and the watery constituents seems to be definitely proved.

As a result of all these studies we arrive at the following explanation of narcosis: The narcotizing substance enters into a loose physico-chemical combination with the vitally important lipoids of the cell, perhaps with the lecithin, and in so doing changes their normal relationship to the other cell constituents, through which an inhibition of the entire cell chemism results. It also becomes evident that the narcosis immediately disappears as soon as the loose, reversible combination, dependent on the solution tension, breaks up. It follows further that substances chemically absolutely indifferent, as the volatile saturated hydrocarbons, can act as narcotics.

Quite in opposition to this idea, it has been frequently put forward and accepted that the breaking up of the narcotics, with a chemical action of definite atomic groups thus set free, as the ethyl group, for instance, is responsible for the narcosis. But even in the case of sulphonal and its related sulphones, from which this idea originates, it can be shown that the action is induced by the entire unchanged molecule, and that the lack of activity of certain sulphones is due not, as is generally believed, to their not being broken up, but to a low distribution coefficient.

This simple theory also explains the fact that all structures capable of stimulation, not only the cells of the nervous system, but all others, and all plant cells as well, are depressed by the narcotic members of this series, for in all living cells lecithin, a lipid body, is to be found. And, indeed, the establishment of the fact that the effect on the lipoids by narcotics, such as ether and chloroform, is such as to immediately inhibit the vital processes of the cell, shows us that these lipoids are among the constituents essential to the life of the cell. Moreover, by establishing this fact it seems to me that the general biologic significance of the theory becomes apparent.

That many narcotics induce not pure narcosis alone, but often show other distinct actions, as, for example, the occurrence of convulsions, which quite overshadow any narcosis present, is easily to be understood when

one remembers that the narcotics may possess an affinity not only for the cell lipoids but for other cell constituents as well, and through some union with these, concomitant effects quite different from narcosis may be induced. This occurs, for instance, in the case of the phenols, whose narcotic action is thrown into the background by the appearance of clonic spinal convulsions.

No attempt is made to explain every type of narcosis by means of the theory presented here. It is very probable that some other disturbances in chemical equilibrium can occur in the cell and inhibit the performance of its function and that substances such as morphin are narcotic through their relationship to other points of attack than the "alcohol lipoids"; and most probably the same can be said concerning the very remarkable narcosis from magnesium salts, lately discovered by Meltzer.

I desire to add in conclusion that shortly after I had published my theory of alcohol narcosis the physiologist Overton published experiments which, carried out independently of mine and from a different point of view, in fact, with somewhat different methods, brought him to an identical conclusion, i. e., to a similar theory of narcosis, so that he has confirmed my work and accepted the formulation of my theory literally. I take this as a strong and gratifying argument for the correctness of our assumption.

THE BREADTH OF THE PROFESSION OF MEDICINE.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON NERVOUS AND MENTAL DISEASES, AT THE FIFTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, PORTLAND, ORE., JULY 11-14, 1905.

JAMES H. M'BRIDE, M.D.
PASADENA, CAL.

While the past year has been one of general progress in the specialty, there do not appear to have been any notable discoveries. I shall therefore refer in this official address to other matters that may be of interest.

In the development of medicine, as elsewhere in the growth of knowledge, investigations that have important results are rare and great discoveries are rarer still. We can not expect that progress shall be a steady onward movement, for of necessity it is irregular. The spiral stair, to use Emerson's phrase, is the law of all growth. All knowledge has had far origins and has come to us by devious paths; there have been pauses, lapses, rests and infinite failures before the goal was reached. I refer to this because in our day we are expectant and a little anxious, if not impatient, that rapid advance be made in medical knowledge, and because of this medical men have sometimes in the past hastily accepted discoveries without waiting for the test of time and use.

It is fortunate that the profession is now more intelligently critical than formerly of the work of investigators. The physician is an optimist, and the past justifies him in his attitude. Professionally, he is the lineal descendant of men who, in more primitive times, claimed to cure disease by charms and incantations and the laying on of hands. Though he knows, for instance, that the professional forbears of the astronomers were the simple Chaldean shepherds of four thousand years ago, and that all science had a like rude beginning, yet he holds that progress in medicine has been quite as great as that of any science.

There is some danger, however, that he will accept as

demonstrated fact, the guesses of investigators in whom imagination may be more active than judgment. Fortunately, however, the investigator of to-day appeals to a more critical audience. Every claim to a discovery is now passed on by what is practically a technical board, where the always necessary test of criticism is applied and that which is valuable is saved.

Every physician should be an original investigator; it is one of the obligations of his calling. Medical practice daily offers opportunities for original research. The great experimenters have done much for the advancement of medicine, but the great practitioners and surgeons have done more. There is no better laboratory than the bedside. The most elaborate equipment for scientific medical investigation is a small affair in comparison to the opportunities of the sick room. The laboratory may suggest, confirm or explain, but it must always be secondary to bedside study. If we are ever able to cut our way through the jungle of problems that human disease presents, we will accomplish it chiefly by the study of the sick, or to use John Locke's splendid phrase, "by the study of the natural history of disease." It is through this bedside study that progress in neurology has chiefly been made, helpful though experimental work has been. As experimental physiology has gone about as far, in this regard, as it can at present, progress in the immediate future will probably be chiefly due to clinical investigation.

It is primarily the business of the physician to prevent and cure disease. The greatest triumphs of the future will doubtless be in the line of prevention, but it is probable also that therapeutics will always be in vogue. If one might judge from the small number of papers contributed to this Section from year to year on the subject of therapeutics, our members are not specially interested in the subject. Four years ago the chairman called attention to this and urged a greater interest in therapeutics, but it does not appear that there has been any increase of interest in the subject by the members of this Section since that criticism was made.

It is hardly possible that we have reached the limit in the application of remedies in the treatment of disease of the nervous system. If the members of this Section could carry on a collective investigation, extending over two or three years on any one of several subjects, the results might be valuable. Notwithstanding the volumes that have been written on the applications of hydrotherapy to nervous diseases, there are yet many obscure points to be investigated, and collective investigation along this line alone could be made profitable.

It is pre-eminently true of nervous and mental diseases that therapeutics is not a thing of drugs only. Aside from seclusion, rest, exercise and hydrotherapy, which are now part of the therapeutics of nervous diseases, the future will undoubtedly disclose remedial measures, other than drugs, that will be of value. We now emphasize the importance of all those things that make up, not alone the physical but the psychical environment of the individual; more and more we see that the cure of the nervously disordered is not so much by drugs as by the influences which we may bring to act on the psychic side of the patient's life. Rest and seclusion in neurasthenia and proper environment, muscle drill and rest in tabes, kindness and diversion in insanity are great advances over the treatment of a generation ago, though we are probably at the beginning of this larger view of therapeutics in these and other disorders.

Quacks and charlatans have made such prominent and noisy pretense of skill in the way of utilizing the mental life as an aid in treatment that reputable physicians have hesitated to claim any interest or confidence in it. It is, too, a phase of treatment that is particularly liable to misconception, abuse and over-statement.

It is possible, I admit, however, with hesitation, that there is a place in medical practice for systematic mental therapeutics, and if proper attention were paid to it, it might result in it being taken out of the hands of mental healers and their like, as the profession took surgery out of the hands of barbers and pretenders.

All such departures from accepted methods, the breaking away from the conservatism and practices of the past, are not easy, but it is desirable that we consider it without prejudice.

It is not long since the use of both electricity and hydrotherapy were practically under the ban of the profession, and yet to-day they are among the most valuable remedies that we have.

From a fairly intimate professional acquaintance with myself, I should say that members of our specialty are liable to become narrow in their views of general medical practice, and yet there is no specialty where it is more important that the physician be well informed in general medicine and quick to recognize the possible relations of nervous and mental diseases to any and all morbid conditions. The alienist and neurologist should be first a good general practitioner, and if he is not he will fall short of what the specialty demands.

All this requires that the physician should not only be a progressive man, but an opportunist, ready to take advantage of any and all methods and means that will help to cure disease. Medicine is first an art, and only by courtesy of charitable qualification can it be called a science. This animal body is too intricate a structure and complex and variable in function to permit as yet of its morbid perversions being brought within the exact order that a science demands.

It is all the more important, therefore, that the physician be an open-minded and progressive man, for he is simply a seeker after the best means to accomplish an immediate end, and is free to use any means that he can command that bring results.

There is no profession whose members are less trammelled by precedent, tradition or prejudice than ours. Our code of ethics is the code of a square deal. Our only creed is that of the gentleman. Every physician is free to choose his methods and remedies. No decisions and no precedents limit the applications of his logic, no councils instruct him where he shall go for facts. He can go contrary to all usages and introduce revolutionary methods, and the profession welcomes his work, if only it is justified by results.

It is not to the discredit, it is to the glory of medicine, that it changes. The world of knowledge grows; sciences are forever being reconstituted, and medicine must meet the demands of change and growth. We systematize our observations and call them science, but methods change, observations are made by newer and better methods, new facts come to replace and modify those we have, old remedies are abandoned, old theories are recast, and by this incessant change and rearrangement we attain to accuracy and definiteness.

Nearly two thousand years ago a Roman physician said that there seemed to be nothing left for the future physician to discover. The man who has always lived on a little island and has had no news of other lands

may be excused for thinking that the ocean washes no shores but his. This Roman doctor in relation to science lived on an island, and even this has shrunk to a microscopic speck on the map of later knowledge. What he called medical science and considered final, has for us only an archeologic interest; of that primitive structure of knowledge which he helped to rear, we have hardly left one stone on another. We realize as true what he did not suspect, that human knowledge is always in the making; that there is no finality possible for us, for from the very necessity of existence we are subject to incessant change. We must, decade after decade, look out from other heights, rearrange our facts, reconstruct our knowledge and reconstitute our best philosophy.

In spite of all the discoveries of medicine, in spite of all the facts that physicians have put in tomes, we are yet at the beginning of what medicine will be; we are explorers who have but touched the capes and promontories of an unknown continent.

Every doctor who stands for progress and values principle above the transient results of mere success is a contributor to the growth of medicine in the best sense. Anyone who demonstrates a new fact has raised the level of knowledge and added to the momentum of our advance. The articles that we contribute and the discussions we have here, may be of transient value, but if the work is done in the right spirit it stimulates to effort and helps to maintain that enthusiasm that is in a large measure the motive power of all progress.

Everyone should come here with his best thought, and if he is wise, he will go away with his ideas changed and clarified and with new interest and increased power for good.

We must rank among our greatest helpers, not alone those who teach us most, but those also who inspire us most, for if it is the inspirers of men who have been the chief instruments of progress.

May we all receive such inspiration when we come here as will help us to be true to the highest ideals of our profession, and in company with all who hope and strive and care, even we in our humble lives may illustrate the best traditions of our profession.

Suprarenal Treatment of Cancer.—Berdier and Falabert presented a communication to the last Latin-American Medical Congress relating the excellent results attained in a number of cases of cancer by local injections of extract of the suprarenals. Under the injections and local applications of the extract the tumor and the glands in the vicinity became reduced in size, while the pains subsided and the patients gained in weight and strength and felt generally much better. Patients who had been unable to get relief from pain except with morphin found that the pains vanished under this local treatment. They say that some connection between the suprarenals and the evolution of cancer seems a plausible assumption from the facts observed. In a case of cancer of the rhino-pharynx, in a man of 52, .5 mg. of adrenalin was injected into the most accessible part of the growth, this injection repeated daily. By the fifth day the patient's deafness had much improved and the growth had commenced to subside. After a dozen injections, in the course of a month or so, the patient was restored to apparent health, with scarcely a trace left of the tumor in his throat, and he has been in good health since. In other cases the relief of the pain by the injections was notable, even when the cancer was too far advanced for treatment to be more than palliative. When the cancer was in the stomach or other internal organ, the suprarenal extract was injected into the arm. The article is given in full in the *Escuela de Medicina*, of Mexico, for Dec. 31, 1905. Histologic examination of the growth was not made in every case.

Original Articles

THE RHYTHMIC SOUNDS OF THE ALIMENTARY CANAL.*

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The sounds produced by the alimentary canal were noted by the Father of Medicine, who is said to have first used the term "borborygmi" to describe the loud rumbles arising in the abdomen. In later times little discriminating attention has been paid to abdominal sounds. Hooker¹ published an essay in 1849 in which he describes more or less alteration in the intensity of the sounds made by the alimentary canal in different diseases of the digestive organs. Other writers have classified the sounds normally audible into splashing, rattling or rustling noises, the murmurs of respiration and of the aorta.²

These sounds, however, according to L. Bernard,³ are not constant over the abdominal organs, nor do the sounds characteristic of the healthy individual alter in pathologic conditions. Little else than these statements is found in the most recent treatises on auscultation. Rubbing noises are mentioned in cases of inflammation, and piping notes when there is stenosis of the intestine. More than this is not stated.⁴ Any special attention to the qualities of certain sounds in the general confusion of noises in the abdomen was hardly to be expected so long as the character of the movements of the stomach and intestines was not thoroughly known.

Within a few years the nature of the motor activities of the alimentary canal has been definitely determined,⁵ and this new knowledge should make possible an association between the motor activities and the sounds attendant on them.

The most characteristic feature of the movements of the alimentary canal is undoubtedly their *rhythmicity*. Over the stomach peristaltic waves pass in rhythmic succession; in the small intestine the most usual activity is a rhythmic segmentation of the food; and in the ascending colon antiperistaltic waves, during short periods, rhythmically follow one another toward the cecum. The most favorable condition for the production of sounds in the alimentary canal is the presence of gas of some sort mixed with the more or less fluid food. When the food and the gas are churned together a sound must result. It is possible to introduce air in fine division with the food by eating, along with other food, a cheese soufflé, toast slightly chewed, very porous bread, or a fluffy omelette. When such food is taken, and frequently after ordinary meals, rhythmic sounds can be heard over the pyloric end of the stomach and later over the lower part of the abdomen.

In listening to these sounds I have made use of a Bowles stethoscope with a rubber tube long enough to permit the hard rubber disc to lie at any point on the abdomen. It has been my custom during the past few months to keep the stethoscope at the head of my bed, and when unable to sleep I have amused myself by lis-

tening to the sounds produced by the digestive organs. At times in the quiet of the night it is possible to hear the sounds without the stethoscope. Sometimes the vibrations produced are so strong that they can be perceived, like the tactile fremitus of the chest, by placing the hand over the region in which the sound arises. The rhythmic sounds are not due to respiration; they differ in rate and in time from the respiratory movements. They are not due, as a listener might at first suppose, to the arbitrary choice of a rate and the selection of such sounds out of the confusion as occur at the proper time to make the rate good. I have been able to eliminate entirely the personal element from the registering of these sounds. By means of a telephone transmitter placed over the abdomen and activating, through an induction coil, a nerve-muscle preparation, I have secured graphic records of the sounds made by the stomach and small intestine wholly without the mediation of human judgment. This method was used by Hürthle⁶ in recording the heart sounds.

THE SOUNDS OF THE STOMACH.

The active end of the stomach is the pyloric end. The food is pushed by peristaltic waves moving toward the pylorus. If the pylorus does not relax as the ring of constriction approaches, the only escape for the food is away from the pylorus through the advancing ring. As the waves are recurring continuously and the pylorus relaxes only occasionally, the food near the pylorus must be squeezed and regurgitated by almost every constriction ring. And the food escaping through the narrow orifice must, if mixed with gas, produce a sound. Since the pyloric end of the stomach reaches farther to the right and to the front than any other part, it is clear that lying on the left side of the body, or on the back and left side, will bring the pyloric end uppermost. When the stomach is so situated, the lighter food, i. e., food mixed with gas, will naturally rise into the pyloric end, and peristaltic waves, for reasons already stated, will then cause sounds to appear. Sounds heard recurring regularly when the person listened to was on the left side, entirely disappeared or became very faint when the person turned so that the pyloric end became lowermost.

The stomach sounds can best be heard after a somewhat bountiful meal, as, for example, an hour after dinner in the evening. The disc of the stethoscope should be placed near the end of the eighth rib on the right side. The sounds heard are usually loud, rattling, explosive and of characteristic quality. At times the sounds may last several seconds. In some persons they are louder and more regular in their occurrence than in others. The rate of recurrence of the gastric sounds varies in the neighborhood of one sound every 20 seconds. In one, person the rate was strikingly regular, one sound every 17 seconds, in another every 22 seconds, and in another every 23 to 24 seconds. That these sounds are a true indication of gastric peristalsis is confirmed by the observations of Moritz,⁷ who recorded a rhythmic increase of intragastric pressure in the pyloric end of his stomach at twenty-second intervals.

Fig. 1 is the copy of a record, secured by the telephone method previously mentioned, which shows graphically many of the features of the stomach sounds. The different heights of the separate marks indicate variations in the intensity of the sounds. The duration of the sounds also can be judged: for example, at *c* and *e* they are more prolonged than before *a*. One of the pop sounds, heard in all parts of the abdomen, is recorded

*Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. Hooker: Boston Med. and Surg. Journal, 1849, xl, pp. 409 and 429.

2. Winkler: Jahresbericht der Gesellschaft für Natur- und Heilkunde in Dresden, Sitzung, Dec. 6, 1873.

3. Bernard L.: "Zur Auscultation des Abdomens," Inaugural Dissertation, Würzburg, 1879.

4. Eisenberg, Kolbe and Weinland: Lehrbuch der klinischen Untersuchungs-Methoden, Berlin und Vienne, 1904, I, p. 691.

5. For literature see article by Cannon: Medical News, May 20, 1905.

6. Hürthle: Archiv. für die gesamte Physiologie, 1905, vol. Ix, p. 264.

7. Moritz: Zeitschrift für Biologie, 1895, xxxii, p. 313.

at *a*. Silent intervals, which occur occasionally, are indicated in the regions *b*, *d* and *f*. In these regions arrows have been placed at the points where the sounds would have recorded if present. The regular rhythm is resumed in continuation of the previous rhythm. It should not be supposed that the silent intervals are always as frequent as this record shows them; I have one tracing in which the marks are not only rhythmically regular, but of almost the same height, uninterruptedly for fifteen minutes.

THE SOUNDS OF THE SMALL INTESTINE.

The possibility of making use of the sounds attending movements of the alimentary canal was suggested by hearing rhythmic sounds as, in an anesthetized cat with opened abdomen, I watched the rhythmic segmenting movements of the small intestine.⁸ With each contraction on the circular fibers the enclosed food was squeezed into the region of the former intermediate constrictions, and the sound then recurred. I have observed these rhythmic movements of the small intestine not only in the cat, but in the dog and rat. They occur at a more rapid rate than the stomach movements. In the cat the stomach movements are seen 4 to 6 per minute, the segmenting movements sometimes 18 to 21, sometimes 28 to 30 per minute.

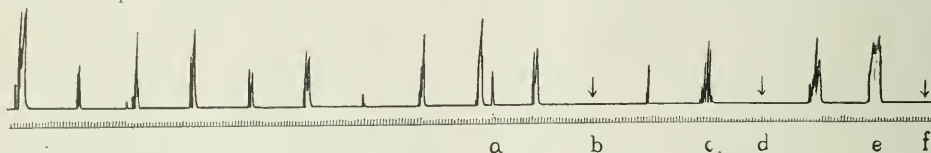


Fig. 1.—Graphic record of the stomach sounds secured by placing over the pyloric region a telephone transmitter activating a nerve-muscle preparation. The time is marked in seconds.



Fig. 2.—Graphic record of the rhythmic sounds of the small intestine. The height of the records has been reduced to about one fourth the original size. The time is marked in seconds.

Usually listening over the lower abdomen, especially over the right lower quadrant, during the height of digestion, reveals a great confusion of noises. It is unsafe to attempt to distinguish for the first time the rhythm of the small intestine in the midst of this chaos. It is much better to listen at first in the night, or, better still, an hour or two after awakening in the morning and before breakfast. The stomach is then producing no sounds, and by placing the disc of the stethoscope in the lower left quadrant the active part of the large intestine is avoided.

The rhythmic sounds of the small intestine are very different from the gushing, explosive sounds of the stomach. The rhythmic sounds vary in quality; sometimes a soft, muffled rustling; sometimes a group of little, rattling, explosive discharges, and sometimes a rough rolling rumble like miniature thunder. But with these variations there are three features that are quite distinctive. The first of these is the slow crescendo, followed by a diminuendo in the sound, so that each sound lasts two or three seconds or more; the second characteristic is the persistence of the rhythm for some time in one place—it does not move on as a

peristaltic wave would move; and the third feature is the distinctive rate, which is usually one sound every 7 or 8 seconds. I have heard the sounds only 4 or 5 seconds apart and at times even 10 seconds apart, but the common interval is 7 or 8 seconds. This fact and the rate of gastric peristalsis as determined by this method I reported before the American Gastroenterological Association, April 24, 1905.⁹

In the morning, after an ample dinner the previous evening I have heard these rhythmic sounds continue for more than an hour and a half without interruption. They are not peculiar to the morning hours, though they are most clearly distinguished at that time. After learning their character I have heard them clearly in the midst of active digestion in the afternoon.

A record of the rhythmic sounds of the small intestine, secured by the method already mentioned, is shown in Figure 2. It is a record of sounds heard before breakfast one morning about half-past nine o'clock. The dinner at six o'clock the previous evening consisted of grape fruit, mackerel, potato, cucumber and tomato salad, four slices of bread and butter, and strawberries and cream with cocoanut cakes. About ten o'clock in the evening four slices of bread and butter and a glass of milk were taken. At the time this record was made the telephone

transmitter was placed on the lower left quadrant of the abdomen. The duration of the sounds is not indicated, since the muscle recorded in each case only at the climax of intensity.

THE SOUND OF THE LARGE INTESTINE.

The antiperistalsis of the proximal portion of the large intestine was incidentally observed in the cat by Jacoby¹⁰ in 1890 during a research on colchicum poisoning. In 1902 this activity of the large intestine was established as the normal activity in the undisturbed animal by observations with the Roentgen rays.¹¹ In 1904 Elliott and Barclay-Smith¹² confirmed these observations on the cat and found that in the rat and guinea-pig, and to a slight extent in the rabbit, hedgehog and ferret, antiperistalsis was present in the proximal colon. They also found in the herbivorous animals they studied that sacculation of the proximal colon was associated with churning movements, each sacculus becoming at times the seat of swaying oscillations. The greater the churning activity of the proximal colon the more marked

9. Medical News, May 20, 1905.

10. Jacoby: Archiv. für experimentelle Pathologie und Pharmakologie, 1890, xxvii, p. 147.

11. Cannon: American Jour. of Phys., 1902, vol. vi, p. 265.

12. Elliott and Barclay-Smith: Jour. of Phys., 1904, vol. xxxi, p. 272.

churning activity of the proximal colon the more marked was the sacculaction of its wall. The colon of man is of the sacculacted herbivorous, rather than of the carnivorous type. The sign of a proximal colon which mixes and churns its contained food is a uniform soft consistency of the contents. In the human being this condition is realized only in the cecum and ascending colon; the contents of the transverse colon are generally as firm as those of the rectum.¹³ Elliott and Barclay-Smith assumed, therefore, that in man the food entering the proximal colon "is still delayed by a backward current, still commingled by the activity of the walls of the sacculi."

The greater activity in the right lower quadrant of the abdomen is manifested at times by an almost constant succession of little popping noises and faint gurglings when the left lower quadrant is quite silent. In spite, however, of listening in the region of the cecum for hours, at different times of the day, and with my body in various positions, a uniform and characteristic rhythm of the sounds in this region, if it be present, has escaped me. Sounds of a coarse rumbling character somewhat like those of the stomach, but usually more prolonged, are audible at times. These sounds were once heard recurring regularly for a short period at intervals of about 20 seconds. More commonly in my experience such irregular intervals as these—45, 25, 35, 27, 25, 14 and 29 seconds—are observable. Inasmuch as these sounds are not clearly rhythmic it seems questionable whether they are produced in only one part of the intestine. These gurglings are heard loudest along the ascending and transverse colon, and for that reason are probably due to activities of the large bowel.¹⁴

Enemata of starch and a little flour boiled in normal salt solution, stirred into a froth much like soapsuds, and introduced at body temperature in amounts varying between 1500 c.c. and 3000 c.c., if the body is kept horizontal, can be retained for a half hour or more without difficulty. During this time there are repeated pains or cramps referred most commonly to the region of the hepatic flexure of the colon. They are very distinct and quite unmistakable in their character. It is remarkable that these recurring cramps, which are undoubtedly due to contractions of the intestine, are ordinarily not felt in the descending colon, sigmoid flexure, or rectum, but are restricted to the proximal colon, the region which in lower animals is characterized by the greatest activity.

The contractions attending the pains are not expulsive. Nor do they seem to move backward from the part in which they are felt, for no sound is audible over the cecum either during the pain in the hepatic flexure or after it has disappeared. The contractions apparently occur again and again in the same region without moving in either direction. I have observed* in the cat such repeated circular contractions of the proximal colon, but they are not usual.

The recurrent pains ordinarily last from 6 to 8 seconds, increasing gradually in intensity until just before the end. They are commonly attended by gurgling noises, audible as the cramp is passing away. The cramps have been observed succeeding one another for nearly 10 minutes at intervals varying between 19 and 22 seconds, but in my experience they are not ordinarily

so regular as this. The following figures, representing in seconds the time between the onset of successive cramps, illustrate the usual rather irregular recurrence of the contractions:

| | | | |
|----|----|----|----|
| 28 | 39 | 22 | 43 |
| 47 | 35 | 15 | 42 |
| 35 | 15 | 25 | 40 |
| 32 | 15 | 50 | 43 |
| 23 | 18 | 40 | 64 |
| 41 | 35 | 25 | 37 |

From evidence secured by auscultation and sensations of cramp, it seems certain that the ascending and first part of the transverse colon are more active than the remainder of the large intestine. That there is an antiperistalsis in this more active region is not yet established. As already mentioned, Elliott and Barclay-Smith have found that such sacculaction as occurs in the human colon is associated with emphasized churning activity of the walls of the sacculi. In repeating their observations on the guinea-pig and rabbit I have seen oscillating movements of single sacculi, now here, now there, or of many sacculi at the same time, each contracting repeatedly, squeezing out the contents of the pouch, crowding full the neighboring pouches which in turn become active, then relaxing, filling, and discharging, again and again, till the food is thoroughly churned. Such a process could not be attended by a clearly marked rhythm—too many little activities are going on at the same time. These little activities would naturally be attended by the continuous popping noises and the slight gurglings which are heard at times over the ascending colon. Is it not likely that in man oscillating contractions of the walls of the sacculi, rather than antiperistalsis, is the prominent operation of the proximal large intestine? In accord with this suggestion is the observation above mentioned that the pains in the colon occur repeatedly in the same region, and do not spread to neighboring parts.

A characteristic sound, not periodic, which is audible at times along the transverse and descending colon is a progression of little crackling noises like the breaking of minute bubbles. The sound starts in the transverse colon and its advance can be clearly traced. If the disc of the stethoscope lies over the splenic flexure the crackling can be heard first faintly, then louder and louder, then gradually more faintly again, and if after the climax of intensity there the stethoscope is changed to a position farther along the large intestine the sound can again be heard passing through the same phases as before. This sound is likely to be followed immediately by a tendency to pass gas from the bowel.

VALUE OF THESE DATA.

To one listening for the first time for rhythmic abdominal sounds, probably the most striking feature of what he hears is the large number of sounds which are not rhythmic. Most prominent among these irregular sounds are the sudden quick discharges or pops which can be heard, either singly or in a short series of three or four, almost at all times and in all parts of the abdomen, though most frequently on the right side. As already stated, these reports resemble the sound of bursting bubbles, and it may be that they are caused by the squeezing of gas from a mass of the food by general pressure of the intestinal wall. Occasionally a continuous little gurgling can be heard for some moments, gradually becoming less intense. It seems probable that peristalsis in the small intestine is thus manifested.

Whether the observation of the sounds of the stomach and intestines is to be of clinical importance will depend on whether or not there are typical variations of these sounds in different diseases of the alimentary

13. Rolth; Merkel and Bonnet's *Arbeiten*, 1903, vol. xx, p. 32.

14. Dr. S. J. Meltzer, in an article on the sounds of swallowing, in *Berl. klin. Wochts.*, 1884, No. 30, mentions certain loud noises which he heard in the region of the liver and which he attributed to the passage of food through the pylorus. Inasmuch as loud sounds not falling into the gastric rhythm are heard in this region it is impossible to be certain that what he heard were really *Pylorusgeräusche*.

canal. The observations here recorded, made chiefly on myself, have been confirmed on other normal individuals. No attempt has been made to study the sounds produced in abnormal conditions. It has occurred to me that the method might be used to separate the somewhat vague expression "motor insufficiency" into its two factors, absence of peristalsis and pyloric obstruction. Evidently if sounds recur in regular rhythm at the pylorus, and food remains in the stomach, the so-called "motor insufficiency" is due not to absence of peristalsis, but to difficulty at the pylorus. This is only one of the applications which the method may have. In such disorders as gastritis, nervous dyspepsia, atony, colic, peritonitis and dysentery a study of the sounds produced by the movements of the alimentary canal, both before and after the administration of drugs, may reveal facts important to the clinician.

REST IN PULMONARY TUBERCULOSIS.

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I wish to make a plea addressed to the general practitioner for the routine employment of rest in the open air in all active or partially arrested cases of tuberculosis. In the vast majority of cases the general practitioner is the man who is called on to diagnose and to treat these patients, and as he has been lectured, criticized and cajoled into making an early diagnosis only to meet with failure in the treatment, I do not think it amiss to point out the error that is responsible for failure, in nine times out of ten in otherwise curable cases, viz., exercise. Even to-day, with the overwhelming proof of the curability of this disease, many physicians say that they do not believe it can be cured, while others say that it can be cured only in sanatoria. When the details of their treatment are gone into it will be found that the greatest mistake is in indiscriminate exercise and lack of proper supervision. This unfortunate experience has bred indifference till at the present time the physician in general practice advises a change of climate, and when this is impossible, which is so often the case, quietly folds his hands, gives an unfavorable prognosis and leaves the unhappy victim to his fate. Let it be distinctly understood that I am not advocating rest to the exclusion of any other means that we possess to combat this disease. Food, personal hygiene, hydrotherapy and strict supervision should be used in the effort to effect a cure.

HISTORY OF THE REST CURE.

Dettweiler of Falkenstein, a student of Brehmer, originated the rest cure in the open air. Having seen the failures in the practice of Brehmer, who ordered all patients not bed-ridden to indulge in systematic walking, he advised the rest treatment, and is as enthusiastic regarding its virtues to-day as he ever was. This method of treatment has been denounced by Nauman and Freudenthal, but nevertheless it is recognized as an indispensable aid in the treatment of this disease by the best clinicians the world over.

MODE OF ADMINISTRATION.

If possible all patients running a temperature of 101 F., or over should be put to bed on a piazza connecting with a room by a door or large window. With this arrangement the patient can be brought in the room, which should be comfortably warm, for his meals, and to be bathed, etc. In the afebrile cases or in those pa-

tients with a maximum temperature of 101 F. or less, the patient should sleep out of doors or in a large room with the windows open. At 7 a. m. he should be dressed with as little effort on his part as possible, have his breakfast and be out in the open air by 8 a. m., where he sits warmly wrapped in blankets in a comfortable, reclining chair or hammock till noon, when he has his luncheon. After luncheon he is allowed an hour's repose, when he again goes out to remain till 6 p. m. After the evening meal he can stay in the house and enjoy a card game, music or light reading till 8 p. m., when he goes to bed. If properly clothed and wrapped in blankets while sitting out doors the patient will be comfortable in the coldest weather. There is absolutely no danger from colds, bronchitis or pneumonia, as is often supposed from this mode of treatment; in fact, there is less liability to these troubles out of doors than in the house.

PHYSIOLOGIC EFFECTS OF REST.

In rest in the open air we possess a means that has no equal for the good and lasting influence it exerts on the fever of tuberculosis. Agglutinins, anti-toxic and bacteriolytic substances are formed much faster in tuberculosis with the patient at rest than when he is active, which accounts for the decline in the temperature and the diminished activity of the bacilli at the site of the local lesion. Given a case with fever that does not show a decided decline after a period of two weeks of rest, the prognosis is bad. The pulse soon returns to its normal force and frequency, when the patient is at rest. The red blood corpuscles and hemoglobin increase, and in cases with marked anemic onset this increase is often very rapid. The appetite, nutrition and digestion improve; the nitrogen absorption and retention are both increased. The patient experiences a sense of well-being; he feels stronger and better in every way and despair gives way to hope as each day sees a step gained toward vigor and health. The weight rapidly increases.

It is generally supposed that forced feeding is contraindicated in the rest cure, that the patient will suffer from autointoxication, anorexia, diarrhea and loss of appetite, as he certainly would in health, but in tuberculosis the opposite is the case. When active exercise is taken the patient does suffer from autointoxication and fatigue toxins, which evidence themselves by febrile phenomena. At the present time I have a patient, 25 years old, with extensive disease of the right lung, who is taking 36 raw eggs and a gallon of milk, besides his three regular meals, each day. He has gained 47 pounds in weight in three months. During all this time he has been kept perfectly quiet. He has suffered no inconvenience from this enormous quantity of food and says he feels perfectly well. His fever has gone, cough and expectoration are much less, and with proper care I have no doubt but that he will entirely recover.

GENERAL REMARKS.

A safe rule to follow is to keep the patient quiet till every sign and symptom of the disease have disappeared and as long afterward as circumstances and necessity will permit. In the light of my experience in the treatment of this malady exercise has no place in the treatment, and should be allowed only when the arrest or cure has been attained and not then with the expectation of doing any good, but with the desire that the patient return to the full enjoyment of life. The advocates of active exercise say that it improves nutrition, hastens the healing of the local lesion and acts as a hardening process, but is

this the case? As a rule, patients at absolute rest in the open air will take more food, digest it better and gain flesh and strength faster than similar patients taking exercise. The action of exercise on the local process according to Bernheim, is an active congestion in the region of the tuberculous focus and often new tears in the old adhesions, mobilization of the bacilli, thoracic pain and sometimes hemorrhage or the unexpected occurrence of the pneumothorax. Osler says: "Make the patient fat and the local disease will take care of itself."

In the light of this statement, which is certainly correct, why should we prescribe forced feeding for a patient and then allow him to use all his energy taking exercise instead of in combating the disease? How often we see patients who have been kept quiet in the open air and have grown fat and healthy looking, with a marked decrease or complete cessation of all their symptoms, relapse when they begin to take active exercise. This very fact is the great bar to the successful treatment of the patients of the working classes; necessity compels them to return to their work, which means exercise and often a lighting up of their old trouble. Exercise from choice has no place in the treatment of pulmonary tuberculosis and is permissible only when necessity demands it.

It can be urged against this rather radical course that the moral effect on the patients will be bad and that some freedom should be allowed in the way of outdoor games, such as baseball or golf. This can be overcome by explaining to the patient that with absolute quietude that time occupied in effecting a cure will be much shorter, the results more permanent, and that there will be less liability to such accidents as hemorrhage or secondary infections. A good moral effect can be produced by short carriage rides, card games and light reading. Tuberculous patients are very susceptible to encouragement and argument, and with a little explanation in regard to rest and exercise they soon fall into the "rest habit," and will be loath to begin exercise when permitted by the medical attendant. I have never known rest, no difference how prolonged, to do any harm, while exercise brings more tuberculous patients to grief than all other things combined.

THE VALUE OF HYDROTHERAPY IN THE TREATMENT OF EPILEPSY.*

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The position of hydrotherapy in the treatment of epilepsy may be considered as a means of cure; an auxiliary method of treatment; a method making it possible to administer considerably larger doses of bromids than usual; a method rendering it possible to reduce the dose of bromid to a minimum; and, finally, as an excellent hygienic measure favoring the action of the skin and improving the general tone.

As a cure *per se* hydrotherapy is probably like all other medicines—it has been tried and found wanting. Notwithstanding the fact that the means employed consist of water, cold, warm or hot, in tubs, douches, sprays, vapor baths, hot air baths and compresses, a method permitting the widest variations in the form of treatment, it probably has rarely, if ever, cured, in and of itself, a case of genuine epilepsy. Cases have been reported

cured, as is so frequently done after surgical methods such as trephining, but further investigation shows that there has been some error in diagnosis, the case being one of hysteria, or that relapses have occurred.

A few French authors have advocated hydrotherapy since Fleury in 1875 published his treatise¹ on the subject. Winternitz and his school have declared that hydrotherapy in epilepsy employed exclusively produces no effect. On the other hand, some of the more recent German publications look on the subject more favorably. Schweinburg in his recent work² cites a patient, a college student, who took under his direction "half baths" for a year and later entered official life and has remained well for sixteen years. Schweinburg says that this is not the only similar case in his experience, but, of course, he pays very strict attention to the diet, and he notes that when the epileptic is ordered a combination of hydrotherapy with a rigid dietary the epileptic attacks diminish with very little bromid, so that there is a reduction from six to eight grams daily to one or two grams. Long intervals free from attacks are obtained and a general improvement in the mental and physical condition is noted.

The procedure adopted at first was the half bath of 27.5 C. (81.5 F.) to 30 C. (86 F.), with affusions and strong rubbing for five or six minutes once or twice daily. Before applying water of lower temperature or more energetic measures such as douches, slapping or in using the high temperatures there should be caution, for attacks have occurred during the application of extreme temperatures.³ Wet packs, foot baths and cold compresses to the head are useful after severe attacks. No unpleasant results have been noted, no increase in the number of attacks, even in the most unfavorable cases. Schweinburg considers the combined hydrotherapeutic and dietetic method more as a school for patients who thus learn the principles and practice of hygienic treatment to be followed during the coming years.

Pick maintains much the same position in holding that with hydrotherapy we can employ considerably smaller doses of the bromid than when the latter is given alone. Pick employs during the interval between the attacks the so-called half baths of 27 C. (80.5 F.) to 30 C. (86 F.) and of eight to fifteen minutes duration, as well as sitz baths and trunk compresses or the so-called "Neptune's Girdle." Without necessarily the expectation of a cure he uses systematic hydrotherapy so as to promote the action of the skin or as a mode of treatment auxiliary to other measures.

Binswanger advises in this connection a mild hydrotherapy as usually adopted in the general treatment of neurasthenia; also a daily bath, using water gradually cooled to 15 C. (59 F.), indifferent baths two or three times a week with or without the addition of salt or affusions at 20 C. (68 F.). For young and vigorous subjects he advises cool or cold baths of only a few minutes duration. The temperature should be about 24 C. (75 F.) and gradually cooled, according to the state of health of the patient, to 20 C. (68 F.). Binswanger employs these cool baths especially during the first weeks of the use of Flechsig's treatment.

Eulenberg recognizes in such measures a wide applicability to raising nutrition and improving the skin, al-

1. Traité thérapeutique et critique d'hydrothérapie, Paris, 1875; also P. Bricon, Thesis, 1881, from Bourneville's service at Bicêtre.

2. Handbuch d. allgemeinen u. speziellen Hydrotherapie, Wiesbaden, 1904.

3. Binswanger, Nitschgel's Speziellen Pathologie. Breitung, Deutsch Med. Woch., 1898, No. 39.

*Read at the Fifth Annual Meeting of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, New York City, Nov. 29, 1905.

most never disappointing, especially in bad cases of bromism. He uses the spinal ice bag when the methods referred to are not permissible.

Matthes⁴ of Jena takes a very conservative position, making use of hydrotherapy only for a good effect on the skin and an increase of the bodily vigor. This is especially necessary during treatment with bromids and should be adopted so as to obviate as much as possible bromid acne. He uses indifferent baths, that is, at about the body temperature, three times a week and also the more refreshing procedures such as the wet sheet rub (abreibung) and half baths. During the attack treatment with ice caps, stimulating compresses or diverting methods, such as slapping the feet with cold cloths, are useless. He holds that the action of hydrotherapy in epilepsy, whether for preventing attacks or rendering them less frequent, rests on a very slender foundation.

As we all know, bromids often do harm in the treatment of epilepsy. In any large institution such as Sonyea, where 2,000 cases have been treated and carefully studied, this difficulty is well recognized and the average dose employed is about one gram daily. At Bielefeld the dose is about three grams daily. In France rather larger doses are given; Feré and Jarnot have used from twelve to sixteen grams daily in special cases.

Among the earlier symptoms are acne and physical depression; later a decidedly weakened action of the heart amounting to chronic cardiac asthenia; ptosis of the lids and even inability to walk. In extreme cases in which the dose is very large or the patient unusually impressed by the drug there may be disturbances of memory and suicidal or homicidal tendencies. I have seen an epileptic patient in an outburst of passion at a fancied wrong, attack a resident physician with great violence. Such cases have been recorded by Echeverria,⁵ Weir Mitchell and others.

We would, therefore, welcome any method that will enable us to use these larger doses with safety to the skin and to the mental equilibrium. Just as warm baths and other hydrotherapeutic procedures undoubtedly enable us to administer potassium iodid in large doses with safety and increased efficacy so I believe that with the help of baths the bromids will be better borne.

As to any ill effects from the use of baths I have knowledge of only one instance in which an attack occurred while bathing. This was in the case of a young man who for nearly a fortnight had been swimming and diving in a large enclosed swimming pool. Although in water beyond his depth, he had his convulsion at the surface and was soon brought by friends to a place of safety. The temperature of the water was about 78 F. and there is no reason to believe that the water had any special influence in causing the attack.

In America attention was first called to the value of hydrotherapy in epilepsy by Dr. Simon Baruch and later by the late Dr. G. W. Foster, one of the physicians at the Government Hospital for the Insane at Washington.⁶ The measures employed were the drip sheet, wet packs and douches. By these means bromid acne was either prevented or relieved and the general tone of the patients was improved. The number of attacks in twelve patients was reduced by about 40 per cent. Since this report was issued no further records have been kept, and I am informed that few patients, if any, received

any permanent benefit, and this treatment is not now used to any extent in this class of cases.

At the Pennsylvania Epileptic Hospital and Colony Farm the patients receive daily showers and a tepid tub bath once or twice a week. These are more for hygienic than for therapeutic purposes.

At the Glenmary Sanitarium at Owego, New York, baths are given only for personal cleanliness.

At the Craig Colony for Epileptics at Sonyea, New York, complete hydrotherapeutic apparatus has just been installed. Systematic treatment will no doubt be adopted under the most favorable circumstances, as these patients receive a minimum dose of bromid, about one gram daily, and are under an excellent hygienic régime. We shall look with interest to the results that will be obtained when the large number of patients at the colony have been treated after an approved method.

At the Glenwood Sanitarium at Dansville, New York, Dr. J. W. Wherry writes me that some years ago he gave considerable attention to hydrotherapeutic methods in the treatment of epilepsy, but he is not able to say that he noticed any direct effect on the epileptic condition. Since then he has discarded the measure excepting when indicated on general principles without reference to the epileptic condition itself. In a letter to me Dr. Wherry remarks very truly: "Whatever benefits the individual is an aid in the treatment of epilepsy. Some epileptics, like some other people, would be benefited by the employment of hydrotherapy; others would not."

In private practice difficulties are encountered in carrying on systematic treatment of this description. Daily treatment for several months would be required, and, of course, unbounded patience and hope are demanded of both physician and patient. The usual experience of outdoor clinics is that as patients improve their visits are more infrequent, but not rarely we find faithful ones who report regularly for years.

We would naturally expect that in focal or traumatic epilepsy less advantage would be derived than in cases of so-called idiopathic epilepsy, alcoholic epilepsy, psychic epilepsy, or in cases arising from intestinal intoxication or obscure metabolic changes. In such cases the free use of water inside and out ought certainly to be given a prominent place in any plan of treatment that may be adopted.

TENT COTTAGES FOR CONSUMPTIVES.

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AND

JOHN M. DODSON, M.D.

CHICAGO.

A recent visit to New Mexico afforded us an opportunity to inspect the tent cottages for consumptives designed by Dr. W. T. Brown, the superintendent of the Valmora Ranch at Watrous, N. M.

These cottages present such a distinct advance in design and construction for their purpose that a detailed description seems worth the while. It may be well to preface the description by a brief statement of the conditions which such structures should fulfill. While the great desideratum is provision for a practically out-of-door existence for these patients, both by day and by night, there is no reason why this should be secured by large sacrifice of the chief comforts and conveniences to which they have been accustomed. The canvas tent, if properly made and set up, makes a very comfortable home in pleasant weather, but it is practically impossible to construct a tent in such a way as

4. Max Matthes: *Lehrbuch d' klin. Hydrotherapie*, Jena, 2d Ed., 1904.

5. Manuel Gonzales Echeverria: *Amer. Jour. Insanity*, 1873-4, vol. 12.

6. Report of the U. S. Government Hospital for the Insane, 1898; also *Amer. Jour. Insanity*, No. 4, 1899.

to afford adequate protection against severe rain, hail or snow storms, high winds and extremes of temperature. It can not be readily equipped with sanitary conveniences, nor does it provide for a freer circulation of air than a more substantial structure, which assures the desired protection.

The cottages are constructed with one or two rooms. They are arranged on either side of and facing the lawn in front of the main building and are exposed on all sides. Each single-room cottage (Fig. 1), is 12x12 feet in area, is constructed of a framework of sixteen 2x4 uprights resting on 4x6 sills, which are supported on a stone foundation (Fig. 2). The five floor joists of 2x6 timbers support the floor of five-inch flooring. The sides are of five-inch drop siding to the height of three and one-half feet, while the remaining three and one-half feet of each side consists of twelve-ounce duck and three windows—one in front and one on each side—each window a six-pane 3x3 1/3 feet high, sliding laterally. The canvas sides, stretched on frames of 1x3-inch pine, a little larger than the windows, are so arranged as to provide five sections, one on each

interior, in a restful light brown, with the floor a light slate. With the canvas sides and windows closed and a light fire in the stove these cottages may be made perfectly comfortable for retiring at night and dressing in the morning. At night, when the occupant has prepared for bed, the windows and canvas sides are opened—from the inside of the cottage the work of but a moment—



Fig. 1.—Single cottage.

side and three at the back of the cottage, which are hinged at the top and opened by pushing out the bottom of the frame by a rod projecting through a hole in the wall just below the screened opening, so arranged that the frame is held firmly at any angle by a cord, which is also fastened from the inside. The door, 2 1/2 x 6 1/2 feet, is at one side of the front elevation.

The gable roof, with a pitch of 1/3, is of cedar shingles above, and between this and the ceiling of stretched canvas below is an air space of four inches, opening by a series of large augur holes under the eaves and similar holes in the gable. These may be closed by a slide, so that this space may be made, in cold weather, a dead-air space, the best of insulators, while in warm weather it may be opened and the air allowed to circulate freely between the ceiling and the roof. Each cottage has a porcelain lavatory with running water and is furnished with a metal bedstead, the best of mattresses and bedding, a dresser, clothes press, table, chairs and a small stove.

The cottages are neatly painted a light slate color, with lighter trimmings; the roof, in Indian red; the



Fig. 2.—Single cottage, rear view.

and he is at once practically out of doors, though perfectly protected from the severest storms. All of the openings are thoroughly protected from flies, etc., by wire screens.

The double cottages are similar in construction, excepting as to dimensions, which are 12x24 feet, making each room of the same size as that of the single cottage (Fig. 3).



Fig. 3.—Double cottage.

The location of such cottages is important. Their site should be on ground affording perfect drainage, and the outlook should be as attractive as it is possible to secure.

Dr. Brown generously offers to supply the exact plans and specifications of this improved Valmora tent cottage to any physician desiring to construct one.

THE OPERATIVE TREATMENT OF FRACTURES.

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(Concluded from page 108.)

THE AFTER-TREATMENT OF FRACTURES TREATED BY THE ABOVE METHODS.

After the operation the patient's temperature should be carefully recorded, and on the first indication of sepsis—rise in temperature combined with localized pain of a dull, throbbing character—a window should be cut in the plaster-of-paris dressing at the site of the operation and the wound inspected. If sepsis is present, it may be recognized by the usual signs. The skin sutures should then be removed and adequate drainage instituted. Irrigation with a mild solution of bichlorid of mercury or a normal salt solution, should be performed twice daily. Sepsis should not occur with any more frequency than in operations on other parts of the body. When the subjective signs show that healing by first intention is taking place, the dressing should not be disturbed until the seventh to the tenth day, when a window may be cut in the plaster-of-paris dressing, and the skin sutures removed. The subsequent treatment consists in the adoption of passive motion and massage as soon as union has taken place. As a rule, the period of disability will be much shorter, splints or a plaster-of-paris dressing should be worn a shorter time, and active motion and use of the part may be indulged in earlier than in similar cases treated by non-operative methods.

SUMMARY OF CASES.

CASE 1.—*Closed Fracture of the Femur.*—J. H. (B. C. H., Surgical Records B, vol. 420, p. 58), service of Dr. Bolles. Admitted June 7, 1904. Patient was thrown out of a window to the ground, a distance of about 20 feet. Unconscious for several hours.

Physical Examination.—Left leg at junction of middle and lower thirds presented a fracture of tibia and fibula. The right femur presents crepitus, abnormal mobility and deformity about the middle, with the lower end of the upper fragment almost piercing the skin.

The patient was etherized at time of admission, and the fracture of the left tibia and fibula and immobilized in a plaster-of-paris dressing from the toes to the groin. Repeated attempts to reduce the fracture of the right femur were fruitless. As no permission was obtained to operate, a modified Buck's extension apparatus was applied.

Operation.—June 18. Eleven days after entrance. Dr. Kelly. Ether anesthesia. An incision about four inches in length was made on the anterior surface of the right thigh at the seat of the fracture. The fractured ends were exposed. Considerable muscular tissue was found between fragments. Ends of fractured bone freed and, by manipulation and traction, approximated and remained locked. No bone suture used. The wound was closed in layer sutures of plain catgut and the skin by a subcuticular silkworm gut suture. A modified Buck's extension apparatus applied.

June 28: Skin suture removed. Wound entirely healed. Fragments in good position. Fair union.

July 27: Tibia shows firm union. Good union in femur.

August 8: Union of right femur firm. All apparatus omitted. Seven weeks after the operation.

August 26: Discharged. Relieved. Union at seat of fractures firm. No deformity. No shortening. Patient went out, using crutches, at the end of nine weeks. X-ray photograph showed the position of the fractured ends to be very good.

CASE 2.—*Closed Fracture of the Tibia.*—G. C. (B. C. H., Surgical Records B, vol. 414, p. 94).—Admitted Feb. 6, 1904, to

the service of Dr. Cushing. Patient slipped on a cover of a coal hole and fell heavily on ankle.

Physical Examination.—Right leg, from ankle to knee, markedly swollen, the skin is covered on its anterior surface with 5 to 6 blebs, crepitus, abnormal mobility, deformity and fracture of the tibia at the junction of the middle and lower thirds. Shortening $\frac{3}{4}$ to $1\frac{1}{2}$ inches. Marked overriding of the fragments. A small abrasion about the size of a silver dollar on inner anterior surface of leg about middle. On account of abrasion, immediate operation was not advised. Attempts made to reduce fragments with anesthesia were fruitless. Several forms of apparatus were devised to produce continued extension on the lower fragment without any result. At the end of three weeks the probability of non-union, deformity and shortening were explained to the patient and an operation advised.

Operation.—March 1, 1904. Dr. Monks and Dr. Kelly. Ether anesthesia. Vertical incision six inches long at seat of fracture. Ends of fragments exposed. Marked deformity of fragments; the upper end of the lower fragment projected backward, upward and inward into muscles of the back of the leg. Moderate amount of fibrous tissue between fragments. It was found impossible to secure approximation, so resection of the ends of both fragments was performed *in situ* with a chisel. All fibrous tissue removed. After approximation, internal fixation was secured with six interrupted chromicized catgut sutures. Periosteum and soft parts united by interrupted catgut sutures, and the skin by interrupted silkworm gut sutures. No drainage. A dry gauze dressing was applied to the wound and immobilization secured by a plaster-of-paris dressing from the toes to the groin.

March 19: No subjective symptoms since operation. Window cut in plaster, wound found to have healed by first intention. Skin sutures removed.

April 16: Plaster dressing removed. Union found to be firm. No deformity. Shortening $\frac{1}{4}$ of an inch. Second plaster-of-paris dressing and patient discharged, using crutches.

May 20: Plaster dressing removed. Union solid. No deformity. Massage, passive and active motion recommended. Advised to use crutches until they can be discarded. Figures 1 and 2 are from x-ray photographs taken before the operation. Figures 3 and 4 are from x-ray photographs taken four weeks after the operation.

CASE 3.—*Closed Fractures of the Tibia and Fibula.*—T. C. (B. C. H., Surgical Records, B, vol. 416, p. 82).—Admitted March 18, 1904, to the service of Dr. Cushing. During a quarrel the patient was thrown to the ground, injuring his right leg.

Physical Examination.—Considerable swelling and ecchymosis of entire right leg. Several blebs on anterior surface. Shortening $\frac{3}{4}$ of an inch. Crepitus, abnormal mobility and deformity present at middle of tibia, line of fracture probably oblique. Fracture of fibula at junction of middle and upper thirds. X-ray photograph shows an oblique fracture of tibia four inches above the internal malleolus. The upper end of the lower fragment of the tibia is displaced inward, backward and upward. Manipulation under anesthesia failed to reduce the fracture.

Operation.—April 6, 1904. Dr. Kelly. Ether anesthesia. The seat of fracture was exposed under aseptic precautions, and all bleeding controlled. Impossible to secure approximation on account of union having taken place at the seat of fracture of the fibula. An incision was then made over the seat of fracture of the fibula and the union divided. The ends of the fragments of the tibia then approximated and sutured by five interrupted chromicized catgut sutures. The wound closed as usual without drainage. Immobilization from toes to groin in a plaster-of-paris dressing.

May 6: Wound healed by primary union. Sutures removed at the end of ten days.

May 17: Plaster removed. Union firm. No deformity. No shortening. A fresh plaster dressing applied, and patient was discharged, using crutches, six weeks after the operation. Figures 5 and 6 show the x-ray photographs taken six weeks after the operation.

CASE 4.—*Ununited Fracture of the Femur*.—J. G. (B. C. H., Surgical Records, B., vol. 414, p. 230).—Admitted to hospital Jan. 20, 1903, with a fracture of the left femur near the middle. For a period of three months a modified Buck's extension apparatus was applied without any union taking place. At the end of this time, patient, having refused operation, left the hospital. Eight months after the injury, a resection of the ends of the fragments was performed by a private physician, and silver wire was used to secure approximation. The wound became infected, the wire broke and non-union resulted. Patient re-entered the hospital Feb. 25, 1904. At this time the examination showed a fracture of the left femur about the middle. Marked overriding of the fragments and deformity. After complete extension the shortening was $1\frac{1}{2}$ inches. Scar on external surface of the thigh at the seat of the fracture.

Operation.—March 3, 1904. Dr. Monks, Dr. Kelly. Ether anesthesia. An incision was made on the external surface of the thigh and carried down through dense fibrous tissue to the seat of fracture. A condition of pseudarthrosis was found. The silver-wire suture from the previous operation was found to be broken and was removed. The ends of both fragments were resected and sutured together with heavy chromicized catgut, and the wound closed without drainage. A plaster-of-paris bandage, extending from the toes to the chest, secured immobilization. Following the operation, sepsis occurred, and required removal of the skin sutures for drainage. No union resulted at the end of seven weeks, when another attempt to secure union was made. The ends of the bone were freshened and united with three silver-wire sutures. Drainage was instituted and a plaster dressing applied as before. At the end of six weeks, as no union had occurred, the patient demanded amputation, which was performed two inches above the seat of fracture, Aug. 5, 1904, by Dr. Monks.

Sept. 3: The patient was discharged, with a granulating stump. One month later the patient returned to the hospital and was operated on for advanced carcinoma of the pylorus, and, after lingering several weeks, died. Figure 7 is an x-ray photograph showing the broken silver wire which failed to secure approximation. The introduction of sepsis at the first operation probably predisposed to reinfection at each subsequent operation. The presence of carcinoma of the pylorus and its consequent cachexia may have had some influence in the production of non-union.

CASE 5.—*Closed Fracture of the Femur*.—J. B. (B. C. H., Surgical Records, B., vol. 414, p. 172).—Admitted Feb. 16, 1904, to the service of Dr. Cushing. While patient was assisting in the moving of a heavy wooden tank, it fell on his legs, totally disabling him. Patient markedly shocked at the time of injury.

Physical Examination.—Shows a fracture of the right femur about four inches above the knee-joint. The upper end of the lower fragment is displaced upward and backward. The knee joint is considerably distended with fluid. In addition, there is a fracture of the left tibia about two inches from the upper end and a fracture of the internal malleolus of the same bone. On account of the shock from which the patient did not entirely recover for two weeks, the fractures were placed in temporary splints, and no attempts were made at reduction.

Operation.—March 7, 1904. Dr. Monks, Dr. Kelly. Ether anesthesia. Attempts were made three days ago to reduce the fracture of the femur with anesthesia, without success. To-day, through two lateral incisions on the inner and outer surfaces of the thigh at the seat of fracture, the fragments were exposed. Considerable amount of muscular tissue found between the fragments. By means of extension, abduction and adduction the fractured ends were approximated, locked in place by their irregular surfaces, and retention was secured by means of two heavy chromicized catgut sutures passed through the diameter of the fragments. The wounds were closed in layers without drainage, and a plaster-of-paris dressing was applied from the toes to the chest, securing complete immobilization. Reduction of the fractures of the left tibia was readily accomplished and immobilization secured by plaster-of-paris dressings.

March 24: No subjective symptoms occurred since the operation. The skin sutures were removed to-day.

April 18: Moderate-sized callus and firm union at the seat of fracture of the femur.

May 5: Plaster-of-paris dressing removed. No shortening; no deformity. Firm union. No further splint.

May 1: Up in a wheel chair.

May 13: Discharged, using crutches.

CASE 6.—*Closed Fracture of the Tibia*.—J. L. (B. C. H., Surgical Records, B., vol. 416, p. 86).—Admitted March 19, 1904, to the service of Dr. Cushing. Patient tripped over a piece of carpet, turning on ankle, eleven days before admission. Treated by private physician since the time of the accident.

Physical Examination.—The right leg is swollen from the toes to just below the knee. Marked tenderness, abnormal mobility and crepitus about three inches above the tip of the internal malleolus. Apparently some overriding of the fragments, the upper end of the lower fragment being displaced upward, outward and backward. Attempts under anesthesia to secure reduction of the fracture were not followed by success.

Operation.—March 30, 1904. Dr. Monks, Dr. Kelly. Ether anesthesia. The seat of fracture was exposed through an anterior incision. The fragments were found displaced, the upper end of the lower fragment being displaced upward, backward and outward. Approximation of the fragments was impossible on account of the overriding and the presence of fibrous tissue. The latter was removed, tenotomy of the tendo Achilles, and osteotomy of the fibula four inches above the external malleolus were performed, which permitted of approximation, after a small portion of either fragment had been resected with a chisel. Internal fixation secured by means of heavy chromicized catgut. The wound was closed in the usual way and without drainage. Immobilization was secured by means of a plaster-of-paris dressing applied from the toes to the groin.

April 16: There have been no subjective symptoms since the operation. A window was cut in the plaster and the wound was found to have healed by primary union. Skin sutures were removed. Up and about on crutches at the end of four weeks.

May 3: Thirty-four days after the operation the patient was discharged with a light plaster and using crutches. Union was solid. No deformity present at the seat of the fracture. Shortening $\frac{1}{4}$ of an inch. Figure 8 shows the condition present before the operation, and Figure 9 the results obtained by the operation.

CASE 7.—*Ununited Fractures of the Humerus and of the Radius*.—P. S. (B. C. H., Surgical Records, B., vol. 410, p. 106).—Admitted Nov. 24, 1903, to the service of Dr. Bolles. Patient fell off the back of a wagon, sustaining a compound fracture of the left humerus about three inches from its head and a closed fracture of the right radius at its middle. At the time of admission the compound fracture of the left humerus was thoroughly cleaned, the edges of the bone were not sutured and drainage was introduced. A moderate degree of sepsis occurred, which was afterward followed by non-union at the seat of fracture. After admission to the hospital the fracture of the right radius was reduced, and the entire forearm and arm immobilized in a plaster-of-paris dressing. Non-union also resulted here.

Operation.—Feb. 5, 1904. Eleven weeks after the injury. Dr. Monks, Dr. Kelly. Ether anesthesia. An incision was made over the seat of fracture of the right radius, and the fragments exposed. Some interposition of muscular tissue present between the fractured ends of the bone. This was removed, the ends freshened and internal fixation secured by medium chromicized catgut. The wound was closed without drainage, and immobilization was secured by a plaster-of-paris dressing from the hand to the upper arm.

Operation.—March 29, 1904. Dr. Monks, Dr. Kelly. Ether anesthesia. As non-union had resulted in the humerus, the seat of fracture was exposed by a vertical incision at the anterior edge of the deltoid muscle. The fractured ends were found to be separated by muscular and fibrous tissue. This was removed and the fractured ends of the bone were carried through the wound and resected. Internal fixation was secured by means of heavy chromicized catgut, and, on account of sepsis having taken place, when the fracture was compound,

drainage was instituted. Immobilization was secured by splints and bandages. Drainage was removed at the end of two weeks and union was firm here and also in the radius at the end of eight to ten weeks. Figure 10 is the x-ray photograph taken before the operation, and Figure 11 the result obtained after operation.

CASE 8.—*Ununited Fracture of the Radius*.—H. D. (B. C. H., Surgical Records, B., vol. 402, p. 60).—Admitted June 23, 1903, to the service of Dr. Cushing. The patient was struck on the right forearm by a heavy beam.

Physical Examination.—Fracture of the right radius near its middle, abnormal mobility, crepitus and deformity being present, and over the seat of fracture there is an irregular wound.

After admission the wound was thoroughly irrigated and cleaned. The incision was enlarged and the fracture was found to be irregularly transverse, the lower fragment being displaced upward and toward the ulna. After considerable difficulty the fragments were locked together and the wound closed in layers. Drainage, with rubber tissue, used, which was removed at the end of two days. Immobilization with plaster-of-paris. The wound healed by primary union, and the stifles were removed at the end of seven days. At the end of three months no union had taken place and it was determined to suture the fractured ends together.

Operation.—Sept. 11, 1903. Dr. Hubbard. Ether anesthesia. An incision about three inches in length was made over the radius and the fractured ends exposed. The upper end of the lower fragment was found to be displaced upward and toward the ulna, as shown in Figure 12. Fibrous tissue was present between the fragments. This was removed by a curette and gouge, and the ends of the fragments resected. The approximated ends were then held together with a silver-wire suture, as shown in Figure 13. The wound was closed without drainage, and immobilization secured by means of a plaster-of-paris dressing applied from the hand to the upper arm. The wound healed by primary union, and the skin sutures were removed on the eighth day.

October 23: Forty-two days after the operation the patient was discharged, carrying the forearm in a sling. Union fairly firm, slight bowing toward the ulna at the seat of fracture. Pronation and supination good. Movements at the elbow and wrist joints slightly limited.

Figure 12 shows the condition before, and Figure 13 after, the operation.

CASE 9.—*Compound Fracture of the Femur*.—H. S. (B. C. H., Surgical Records, B., vol. 408, p. 176).—Admitted Oct. 27, 1903, to the service of Dr. Bolles. Patient caught foot in wheel of a team while hooking a ride.

Physical Examination.—Shows a fracture of right femur at the junction of the middle and lower thirds; abnormal mobility, deformity, crepitus and shortening of 1 inch present. Just below the internal condyle there is a transverse lacerated wound about six inches long, which communicates with the seat of the fracture.

Operation.—Dr. Kelly. Ether anesthesia. The wound was thoroughly irrigated and cleaned, and by manipulation the fragments were approximated. The skin wound was closed by interrupted silk-worm gut sutures, except at the point for drainage. Immobilization was secured by a plaster-of-paris spica applied from the toes to the chest, and extension applied to the lower end of the plaster. At the end of two weeks the external wound had entirely healed. On account of shrinkage of the soft parts and slipping of the plaster-of-paris spica, overriding of the fragments and shortening occurred. This was corrected Dec. 10, 1903, and a modified Buck's extension apparatus applied. Good union, without shortening or deformity, subsequently occurred.

CASE 10.—*Compound Pott's Fracture*.—J. T. (B. C. H., Surgical Records, B., vol. 414, p. 108).—Admitted Feb. 8, 1904, to the service of Dr. Cushing. Patient fell from a fire escape, a distance of fifteen to twenty feet, turning on ankle, and receiving a compound fracture, the end of the bone protruding through the skin.

Physical Examination.—Swelling of the lower third of left leg over the internal malleolus. An irregular, jagged wound, size of 10-cent piece, over the internal malleolus, exposes a

fracture of the internal malleolus. Fracture of the fibula $1\frac{1}{2}$ inches above the external malleolus present, with marked outward dislocation of the foot.

Operation.—Dr. Kelly. Ether anesthesia. The wound, which extended into the ankle joint, was thoroughly irrigated with normal salt solution, and small portions of tissue, into which dirt was ground, were cut away. The fracture was reduced and the torn periosteum united with medium-sized chromicized catgut sutures. The foot was held in its normal position by an assistant until the plaster-of-paris dressing was applied. The wound was closed by interrupted silk-worm gut sutures, except at a point of drainage. Drainage was dispensed with at the end of three days, and the sutures were removed at the end of ten days, primary union having taken place.

April 6: Union firm. Moderate-sized callus. No deformity. Foot in good position. Movement of ankle joint free. Discharged, wearing a light plaster and using crutches.

CASE 11.—*Compound Fracture of the Humerus*.—J. C. (B. C. H., Surgical Records, B., vol. 414, p. 44).—Admitted Jan. 30, 1904, to the service of Dr. Bolles. The patient, a boy of 9 years, was injured by a sled passing over his left arm.

Physical Examination.—Shows a compound fracture of the left humerus about $1\frac{1}{2}$ inches above the condyles, the line of fracture being transverse. Through a wound about one inch in length on the inner surface of the arm, the seat of fracture could be seen.

Operation.—Jan. 31, 1904. Dr. Kelly. Ether anesthesia. The arm was thoroughly cleaned, the wound irrigated with normal salt solution and enlarged and the seat of fracture exposed. The line of fracture was irregularly transverse. A counter incision was then made on the external surface of the arm. The fragments were approximated and held together by two interrupted chromicized catgut (No. 3) sutures passed through the entire diameter of the bone. The wounds were sutured in the usual manner without drainage. The part was immobilized in splints and a swathe.

The wounds healed by primary union, the stitches were removed on the tenth day, and on February 17 the patient was discharged with fairly firm union, and no deformity. Further treatment was continued in the out-patient department. Figure 14 is from the x-ray photograph taken five weeks after the operation.

CASE 12.—*Compound Fractures of the Tibia and Fibula*.—D. D. (B. C. H., Surgical Records, B., vol. 412, p. 158).—Admitted Jan. 6, 1904, to the service of Dr. Bolles. The patient was injured by the explosion of a water-back of a range.

Physical Examination.—Shows considerable swelling and ecchymosis of entire left leg. On the outer surface of left leg about its middle is an irregular lacerated wound about $1\frac{1}{2}$ inches long, and on the anterior surface there is a similar wound. About the middle of the left tibia there is an oblique fracture with marked overriding of the fragments and displacement of the fractured ends. A fracture of the left fibula about its middle is also present. Surrounding the wounds there is considerable destruction of the soft parts. In addition the patient had marked synovitis of the right knee joint and lateral mobility.

Operation.—Shortly after entrance. Dr. Kelly. Ether anesthesia. The skin was rendered aseptic as usual, and the wounds were thoroughly irrigated with normal salt solution and enlarged, disclosing an oblique fracture of the fibula. Both fractures were reduced and approximation remained good without suturing the fragments. The wounds were closed in layer sutures and drainage used in both wounds. Immobilization secured with a plaster-of-paris dressing from the toes to the groin, and a window was cut in the plaster for subsequent observation.

Following the operation, there was considerable sloughing of the skin and superficial fascia, exposing the lower end of the upper fragment of the tibia for a distance of two inches. Extension was applied to the foot by means of a special Cabot splint and plaster dressing, so that the fragments were always in good position. The wound gradually closed, excepting for a small area over a portion of the upper fragment of bone, which became necrosed and subsequently separated. At the end of three months the wound had entirely closed and there was be-

gining union at the seat of fracture, with shortening of about $\frac{1}{2}$ inch. The patient was then discharged to the out-patient department, wearing a plaster-of-paris dressing and using crutches. Solid union subsequently occurred, and the patient recovered with a sound limb which was not deformed.

CASE 13.—*Compound Fractures of the Tibia and Fibula*.—F. K. (B. C. H., Surgical Records, B., vol. 418, p. 160).—Admitted May 12, 1904, to the service of Dr. Cushing. The patient, while running for a car, slipped and fell, with his leg doubling up under him.

Physical Examination.—On the outer surface of the left leg, at the junction of the middle and lower thirds, there is an irregular lacerated wound about two inches in length, leading down to a fracture of the fibula. At a position about one inch above the fracture of the fibula there is an oblique fracture of the tibia. There is marked deformity and overriding of the fragments of both bones.

Operation.—Dr. Kelly. Ether anesthesia. The skin was incised in the usual manner and the wound thoroughly irrigated with normal salt solution and enlarged. The seats of fracture were exposed and reduction of the fragments accomplished without difficulty. Interlocking of the fragments obviated internal fixation with catgut. On account of the apparent cleanliness of the wound it was closed in the usual manner without drainage and immobilization secured with a plaster-of-paris dressing applied from the toes to the groin.

Eight days after the operation the wound was inspected, and primary union had taken place. The skin sutures were then removed.

June 20.—Thirty-nine days after the operation, the plaster-of-paris dressing was removed and firm union was found to be present. The position was good, there was no shortening and no deformity. A fresh plaster-of-paris dressing was applied, and the patient discharged, with crutches, to the out-patient department.

CASE 14.—*Compound Fractures of Tibia and Fibula*.—P. G., 37 years (B. C. H., Relief Station Records, vol. 6, p. 151).—Admitted March 18, 1903, to the service of Dr. Bolles. The patient, while intoxicated, fell off a moving train, and at the time of admission was in a condition of marked shock from loss of blood. The operation was delayed four hours until consent for operation could be obtained.

Physical Examination.—The left leg presents a compound fracture of tibia and fibula. At the junction of the middle and lower thirds, the lower end of the upper fragment projecting through a wound on the inner side of the leg. Considerable hemorrhage had apparently taken place.

Operation.—Dr. Kelly. Ether anesthesia. The part was prepared aseptically in the usual manner and the wound enlarged for exploration. Four bleeding veins were ligated. On exposing the seat of fracture, the lower end of the upper fragment of the tibia was found to be discolored with dirt for a distance of $\frac{3}{4}$ of an inch, so that the involved portion was cut away with rongeur forceps and the fractured ends approximated. Internal fixation was secured by means of two silver-wire sutures and the wound closed in the usual method with drainage. Immobilization was secured by means of a plaster-of-paris dressing applied from the toes to the groin. The patient stood the operation very well, and recovered from the anesthetic, but, in spite of most active stimulation, died on the following day (20 hours after the operation), apparently of shock.

CASE 15.—*Compound Fractures of Radius and Ulna*.—M. R. (B. C. H., Relief Station Records, vol. 6, p. 139).—Admitted March 16, 1903, to the service of Dr. Bolles. The patient was injured by having forearm caught between a belt and pulley.

Physical Examination.—The left forearm present on its posterior surface, at a point between the middle and lower thirds, a transverse lacerated wound about two inches long, which is continued down the forearm at right angles for a further distance of two inches, through which projects the upper ends of the lower fragments of the fractured radius and ulna.

Operation.—Dr. Collins, Dr. Kelly. Ether anesthesia. The forearm was prepared as usual and the wound thoroughly irrigated with normal salt solution. The fractured ends of the radius and ulna, after reduction, were held approximated by

means of silver-wire sutures, and the wound closed in the usual manner with drainage. Immobilization was secured by means of a plaster-of-paris dressing applied from the hand to the upper arm, the hand being in a position midway between pronation and supination, and the elbow at a right angle. The wound healed by primary union, and the skin sutures were removed on the eighth day and the patient discharged to the out-patient department. At the end of seven weeks, union was firm and the fragments had united without deformity, although there remained some limitation of pronation and supination.

CASE 16.—*Compound Fractures of the Tibia and Fibula*.—(St. M. H., Surgical Records, No. 513).—Admitted May 17, 1902, to the service of Dr. H. B. Deaver. The patient was injured by a heavy bar of iron falling on his leg.

Physical Examination.—The left leg presents a compound fracture of the tibia about $2\frac{1}{2}$ inches above the ankle joint. Fibula fractured about the same level. Considerable swelling and ecchymosis of the soft parts present.

Operation.—Dr. Kelly. Ether anesthesia. The leg was thoroughly cleaned as usual, and the wound irrigated with a solution of bichlorid of mercury (1/10000). The wound was then enlarged, exposing a double fracture of the tibia, one line of fracture being transverse and the other oblique, leaving a triangular piece of bone held by periosteum. The fragments were reduced and retained in place with silver-wire sutures. The wound was closed in layers and drainage used. The leg was then immobilized in a plaster-of-paris dressing.

Two days after the operation, subjective signs of sepsis being present, several skin sutures were removed, and irrigation used three times a day. In spite of active treatment, the infection became so severe that amputation below the knee was necessary at the end of three weeks. This failed to prevent the spread of the infection, and, as the knee joint became involved, amputation at the lower third of the thigh was performed seven weeks after the primary operation.

The patient finally recovered and was discharged from the hospital, with a healed stump.

CASE 17.—*Malunion Following Colles' Fracture*.—E. B. (St. M. H., Surgical Records, No. 1149).—Admitted Aug. 8, 1904. The patient fell four weeks before admission, injuring wrist, which she considered a sprain, and which was treated as such by a physician. When I saw the patient, the right hand was markedly adducted, pronation and supination were impossible, the radial arch was entirely absent, and marked deformity of the lower end of the radius was present.

Operation.—Dr. Kelly. Ether anesthesia. The part was prepared as usual, and through an incision $1\frac{1}{2}$ inches in length on the radial side of the forearm, at the seat of fracture, the fragments were exposed. The lower end of the upper fragment was displaced toward the ulna and flexor surface of the forearm, and overriding was present. Fibrous tissue intervened between the fragments. This was removed by a gouge and chisel, and reduction accomplished, the fragments interlocking. The wound was closed in the usual manner, without drainage, and sealed with a collodion dressing. Immobilization was secured with well-padded anterior and posterior splints, the hand being held in marked adduction. Primary union occurred and the skin suture was removed on the seventh day. At the end of three and a half weeks, both splints were dispensed with. Union was firm, deformity was absent, pronation and supination were as good as before the injury.

CASE 18.—*Malunion Following Pott's Fracture*.—J. S. (St. M. H., Surgical Records, No. 469).—Admitted May 23, 1902, to the service of Dr. H. B. Deaver. The patient sustained a Pott's fracture four weeks ago, and at the present time the fragments have united, with deformity. The foot is markedly everted and displaced slightly backward.

Operation.—Dr. Deaver, Dr. Kelly. Ether anesthesia. Through a vertical incision about four inches in length over the fibula, the fragments of the latter were exposed. The fractured ends were displaced and united in this position by fibrous union. The fibrous tissue was removed with a gouge and curette, and the ends of the fragments were freshened with a chisel. No union had occurred between the internal malleolus and the tibia. The fracture was reduced and the fragments of

the fibula united by a silver-wire suture. The wound was closed in the usual manner, without drainage, and immobilization secured with a plaster-of-paris dressing applied from the toes to just below the knee. The skin sutures were removed on the tenth day. Primary union occurred, and three weeks after the operation fairly firm union had taken place, without any deformity resulting. The patient was then discharged to the out-patient department, wearing a plaster-of-paris dressing and using crutches.

CASE 19.—*Malunion Following Pott's Fracture.*—C. G. (St. M. H., Surgical Records, No. 375).—Admitted April 15, 1902, to the service of Dr. H. B. Deaver. The patient slipped, turning on ankle, and sustained a Pott's fracture five months previous to admission. He was treated at another hospital, where the foot and leg were placed in a plaster-of-paris dressing and kept there for six weeks. At the end of this time, marked deformity had occurred. On admission, the right foot was markedly everted and the ankle widened.

Operation.—Dr. Deaver, Dr. Kelly. Ether anesthesia. The fragments of the fibula and tibia were exposed by two vertical incisions made on either side of the ankle. Firm union in a deformed position was found to have occurred. The union between the fragments was cut away with a chisel and considerable fibrous tissue removed. The fragments were then approximated with considerable difficulty and held in place by silver-wire sutures. The wounds were closed as usual and without drainage. The foot being held in its normal position, immobilization was secured with a plaster-of-paris dressing. Primary union had occurred and the skin sutures were removed on the tenth day. At the end of three weeks, union was fairly firm, there was no deformity, and the patient was discharged to the out-patient department, wearing a plaster dressing and using crutches.

CASE 20.—*Ununited Fracture of the Tibia.*—C. C., 31 years (B. C. H., Surgical Records, B., vol. 398, p. 78).—Admitted April 21, 1903, to the service of Dr. Cushing. The patient was injured by a wheel of an ice wagon passing over his left leg.

Physical Examination.—There is considerable swelling and ecchymosis of the left leg, and at the junction of the upper and middle thirds there is crepitus, abnormal mobility and deformity of the tibia, with some overriding of the fragments.

Reduction was apparently accomplished under anesthesia and the parts immobilized in a plaster-of-paris dressing. At the end of three months, no union had occurred and the operation was performed.

Operation.—Dr. Lund, Dr. Kelly. Ether anesthesia. An incision about five inches in length was made on the anterior surface of the leg at the seat of the fracture and was carried down to the bone. The upper end of the lower fragment of the tibia was found to be displaced backward and outward and separated from the upper fragment of the tibia by muscular and fibrous tissue. This was removed by a curette and scissors and the ends of the fragment freshened. Internal fixation was performed with heavy chromicized catgut, and the wound closed in the usual manner and without drainage.

Immobilization was secured with a plaster-of-paris dressing applied from the toes to the groin. The wound healed, primary union, and the skin sutures were removed on the eighth day.

Three months after the operation, the patient was discharged, using crutches. At this time union was firm, and, on account of the small portion of bone which was removed from the end of each fragment at the time of the operation, there was slight inward bowing at the seat of fracture.

CASE 21.—*Compound Fracture of the Humerus.*—S. L., age 5 years (B. C. H., Surgical Records, B., vol. 402, p. 10).—Admitted June 17, 1903, to the service of Dr. Cushing. The patient was injured by being struck by a passing team.

Physical Examination.—The left humerus presents a compound fracture about $1\frac{1}{2}$ inches above the condyles, the skin wound being on the internal surface of the arm and about one inch in length. In addition, the patient has a closed fracture of the right femur about its middle.

Operation.—Dr. Lund. Ether anesthesia. The left arm was prepared in the usual manner, and the wound, after being thoroughly irrigated with normal salt solution, was enlarged, exposing the seat of fracture. The fragments were approxi-

mated and held together by medium-sized chromicized catgut sutures. The wound was closed in the usual manner and with drainage. Immobilization was secured by means of a plaster-of-paris dressing, applied from the hand to the axilla, the elbow being placed at a right angle.

Following the operation there was considerable sloughing of the soft parts about the wound, leaving a portion of one fragment exposed and denuded of periosteum. At the end of ten weeks a sequestrum was removed and union had taken place at the seat of fracture. At the end of twelve weeks, the wound had entirely closed, and the patient was discharged to the out-patient department. Union was firm; there was very slight angular deformity, inward at the seat of fracture, and there was no limitation of motion at the elbow joint.

CASE 22.—*Compound Comminuted Fracture of the Femur.*—C. M., age 24 years (B. C. H., Surgical Records, B., vol. 402, p. 150).—Admitted July 4, 1903, to the service of Dr. Monks. The patient, while driving a fire engine, was injured by a train striking the wagon.

Physical Examination.—In addition to multiple contusions, there is a compound fracture of the left femur at the junction of the middle and lower thirds, the external wound being about four inches long on the external surface of the thigh at the seat of fracture.

Operation.—Dr. Lund. Ether anesthesia. The thigh was cleaned in the usual manner, and the wound, after being thoroughly irrigated with normal salt solution, was enlarged. Examination of the fracture showed considerable comminution of the fragments for a distance of three inches. The loose fragments were removed and the wound closed with interrupted silk-worm gut sutures, except at the lower angle, where several strips of iodoform gauze were introduced for drainage. The fragments were held in position externally by a plaster-of-paris spica dressing, extending from the toes to the waist. Following the operation, there was considerable sloughing of the edges of the wound, and during a period of three months small fragments of bone were removed from the wound. At this time there still persisted a small sinus, but firm union was present. There was three inches' shortening and no angular deformity. All apparatus was then removed. One month later the sinus was corrected and several pieces of necrotic bone removed. The patient was finally discharged six months after the time of injury, using crutches. This case was interesting on account of the large amount of bone which was lost (three inches), due to the comminution of the fragments, and was followed by good union and a fair functional result.

Figure 15 shows the poor anatomic result, which may at times follow fractures of the tibia and fibula when treated by non-operative methods. The loss of a laborer's earning capacity is apparent with such a result. This is a type of case which would have been followed by better results if subjected to operative intervention.

CONCLUSIONS.

In conclusion, it may be stated that all closed fractures do not require operative intervention for proper reduction and immobilization. In fact, perfect anatomic and functional results are obtained in the great majority of cases when treated by conservative means. There are, however, some cases in which reduction can not be accomplished under anesthesia, and in which the x-ray photograph shows faulty approximation of the fractured ends. There are other fractures in which we know from experience that union will occur only with deformity, and the functional results thereby lessened. Other classes of fractures are frequently followed by non-union. We should carefully discriminate between the various classes of fracture and select only those for this plan of treatment, which would not be followed by perfect anatomic and functional results, if treated by non-operative methods. The probability of infection following such operations in experienced hands and under proper surgical precautions, should be no more frequent than in operations on other structures.



Fig. 1.—Case 2. Closed fracture of the tibia and fibula. Skia-graph taken in an antero-posterior position before the operation. The degree of overriding is shown, and the tendency of the upper end of the lower fragment of the tibia to be displaced upward and outward.



Fig. 2.—Case 2. Closed fracture of the tibia and fibula. Skia-graph taken in a lateral position before the operation. The overriding and the backward displacement of the upper end of the lower fragment is well shown. In this case this sharp fragment was found piercing the muscles, and reduction would have been impossible by non-operative measures.



Fig. 3.—Case 2. Closed fracture of the tibia and fibula. Skia-graph taken in a lateral position six weeks after the operation. It shows well the third fragment which is so frequently present in



Fig. 4.—Case 2. Closed fracture of the tibia and fibula. Skia-graph taken in an antero-posterior view six weeks after the operation. It shows the extent of the resection and the preservation



Fig. 5.—Case 3. Closed fracture of the tibia and fibula. Skiagraph taken in a lateral position seven weeks after the operation. The characteristic displacement was present, as in Case 2. No resection of the fragments was necessary. The suture holes and the approximation show well.



Fig. 6.—Case 3. Closed fracture of the tibia and fibula. Skiagraph taken in an antero-posterior position seven weeks after the operation. The picture shows the retention of the fragments in the normal axis of the bone, also the suture holes.



Fig. 7. Case 4. Ununited fracture of the femur. Skiagraph taken five months after the fragments had been sutured with silver wire. The broken silver wire failed to retain the fractured ends in approximation. It shows well the disadvantage of silver wire as a suture material, as it is liable to break at any time when any angularity at the seat of fracture is produced.



Fig. 8.—Case 6. Closed fracture of the tibia. X ray photograph taken in an antero-posterior position, before the operation. The spiral nature of the fracture is well marked. The displacement of the fragments is constant, the upper passing downward, forward, and inward; the lower, upward, backward and outward. The knowledge of the character of the displacement is of great value to the surgeon, in that it simplifies considerably the details and severity of the operation, and secures a perfect result.



Fig. 9.—Case 6. Closed fracture of the tibia. Skiagraph taken in an antero-posterior position four weeks after the operation. The approximation is not as good as it should be, but the length of time that had elapsed from the time of the injury to that of the operation necessitated some resection of the fragments.



Fig. 10.—Case 7. Ununited fracture of the radius. Skiagraph taken in a lateral position before the operation. The apparently good approximation, as shown in the photograph, was rendered inadequate, owing to the interposition of muscular tissue between the fractured ends.



Fig. 11.—Case 7. Ununited fracture of the radius. Skiagraph



Fig. 12.—Case 8. Ununited fracture of the radius. From a



Fig. 13. Case 8, represents the results obtained by the operation. The silver wire suture gives perfect approximation. The extent of regeneration from the periosteum is shown.



Fig. 15. Malunion following fractures of the tibia and fibula. Skiagraph taken in an antero-posterior position of a fracture involving both bones of the leg. The union is very firm, but the loss of a laborer's earning capacity with such a result is evident.



Fig. 14.—Case 11. Compound fracture of the humerus. Skiagraph taken in a lateral position five weeks after the operation. The preservation of the axis of the humerus is perfect. The excessive callus is probably due to the comminution of the fragments and absence of perfect approximation of the periosteum.



Illustration of the article by Dr. Mortimer Frauk, showing fundus of eye in patient with amaurotic family idiocy.

A CASE OF AMAUROTIC FAMILY IDIOCY, WITH A SUMMARY OF REPORTED CASES.*

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This uncommon disease is especially interesting to ophthalmologists because of the fundus changes which are pathognomonic and because Warren Tay, an English oculist, first drew attention to the subject in 1881. From that time until 1896, when Sachs proposed the name as now used, each observer described his case under a different title.

Amaurotic family idiocy is a fatal disease, commencing in the early months of infant life with muscular weakness progressing to almost complete paralysis, associated with a distinct symmetrical fundus appearance and terminating in death about the end of the second year. No definite exciting cause has been assigned. There is no evidence that inherited syphilis, consanguinity of parents or any of the usual diatheses is a factor. There is, however, a marked racial peculiarity. In all but six of the recorded cases the disease has occurred in Jewish children. Both male and female children are affected. There is a suggestive family predisposition in that more than one child in the same family is attacked, but with no regularity in the order in which this takes place.

The child is born at full term, sound and healthy, and continues so until about the third month. It then ceases to develop along normal lines and signs of muscular enfeeblement, especially of the back of the neck, are observed, with failure of sight. Should an ophthalmoscopic examination be made at this time, definite and characteristic changes in and about the macular region will be detected. Marasmus increases slowly, and the muscular enfeeblement becomes so pronounced that the child is unable to sit up and the head falls backward if unsupported. The grasp is feeble and objects placed in the hands are soon dropped. There is a decided cessation of mental development and the child becomes apathetic. Perception of light is present for a time, while hearing remains hyperacute, so much so that any sound causes the child to start.¹ The sense of taste is preserved, and interference with deglutition occasionally happens. Finally, paresis or paralysis, either flaccid or spastic, of the greater part of the body appears. The deep reflexes may be exaggerated or diminished and occasional spasmodic contraction occurs. The temperature is normal throughout the course of the disease. Falkenheim calls attention to an explosive laughter, which could be induced in the reported case by blowing on the child's face. Total blindness finally ensues from optic atrophy. The duration of life varies from one and a half to two and a half years.

The following case was referred to me by Dr. A. C. Cotton, through whose courtesy I am enabled to publish it. Minute details are omitted, as the history will be more fully gone into when published by him:

R. H., female, aged 1 year, was examined March 27, 1905. She is the youngest of four children, the remaining being boys in good health. There is a history of one miscarriage. All the children have been breast fed. The parents are of Jewish extraction, with no history of consanguinity or syphilis. The appearance and nutrition of the child was good and the head was well formed and of normal size. She was listless, unable to sit up and apathetic and understood nothing. The reflexes were exaggerated and especially noticeable was the abnormal susceptibility of the child to noises.

* Read before the Chicago Medical Society.

1. Kingdon observed the changes in the temporo-sphenoidal lobe much less marked than in other regions of the brain, which probably explains the fact that hearing is unaffected.

The following ocular symptoms were noticed: The pupils were about 1.5 mm. in diameter, equal in size and reacted slowly to light, but light thrown into the eyes failed to give any evidence of vision. A drop of atropin solution was put into each eye to facilitate the examination. The discs were atrophic, grayish in color, and the outlines well marked. The retinal vessels were of normal size. The fundus picture, as described elsewhere, was typical of the disease.

The ocular symptoms are pathognomonic of the disease and are present early. In the beginning there is no change in the appearance of the discs and the child is able to see. Later on there is definite optic atrophy and total amaurosis. Optic neuritis has been observed to precede optic atrophy. The changes at the macula are characteristic and unique and always symmetrical. These changes remain unaltered throughout the course of the disease. About the macula is a nebulous area, grayish-white in color, slightly raised above the surface of the retina and about two to three times the size of the optic disc, with softened edges gradually blending with the normal fundus. The patch is somewhat oval in shape with the major axis horizontal. In its center, coinciding with the fovea centralis, but larger, is a dark red or liver-colored spot clear cut in outline. Surrounding the central spot can be seen distinctly the tiny retinal vessels. Strabismus and nystagmus has been observed in some cases. There is no recorded regularity as to the condition of the pupils.

In but six cases have the eyes been studied microscopically. Treacher Collins reported the first findings in Kingdon's two cases. He found the retina much thickened at the yellow spot, due to enlargement of the outer molecular layer, the tissue of which showed a spacing-out which he regarded as indicative of edema. The most marked changes occurred in the neighborhood of the fovea and became less evident toward the periphery of the affected area. The retina was detached from the choroid, and had been thrown up in folds above the macular region, probably due to faulty fixation with Müller's fluid. The optic nerve was atrophied and showed an increase of interstitial connective tissue and a large number of round cells. At the time of this examination no study had been made of the ganglion cells.

In the third case, that of Peterson's, examined by Ward Holden, the results were unsatisfactory, owing to the advanced postmortem changes.

In the fourth case, that of Hirsch, also examined by Holden, he reported the essential changes in the eye to be degeneration of the ganglion cells of the retina, and of the nerve fibers of the optic nerve and tracts.

In the fifth case, that of Mohr, examined by Preisz, he reported edema and thickening of the outer molecular layers, especially the fiber layer of Henle, which composes the outer portion of this layer in the region of the macula. This edema is ascribed to a probable angioneurotic disturbance, the result of pathologic alterations in the cervical cord. No mention is made of the condition of the ganglionic cells. The outer segments of the rods and cones were degenerated and the formation of a granular substance found between the external limiting membrane and the choroid.

Holden was the first to show the relationship between the fundus changes, especially at the macula, to those found in the central nervous system. He likewise regards the atrophy of the optic nerve, both as an ascending and a descending degeneration, and dependent on a common cause and related to the changes in the cerebral nervous system, as both are embryologically related.

In the sixth case, that of McKee, examined by Shumway and Buchanan, the views of Holden were confirmed.

The nebulous area about the macula, it is reasonable to suppose, results from the swollen and degenerated ganglion cells present in larger numbers in the macular region rather than to an edema. Two facts speak against edema: first, the unchanging appearance of the lesion for months, and the absence of any veiling of the minutest vessels in this area (Falkenheim).

In the fovea the ganglion cells are absent, but at the margin of the fovea the ganglionic layer is six to ten cells deep, gradually growing less until at the periphery it is only a layer of single cells. Thus we have the red center void of cells, next the dense white corresponding to the deepest portion of the layer, fading away gradually as the cells become fewer. In the vertical meridian the ganglion cell layer thins out more rapidly than in the horizontal, explaining the oval area about the macula having its major axis horizontal.

Sachs,² in his last paper, lays great stress on the morbid process in this disease affecting primarily, or at least to a great extent, the larger ganglion cells of the entire gray matter of the brain and of the spinal cord. These confirmed the cellular findings previously described by Hirsch³ and recently by Spiller.⁴

The following is a summary of the statistics of all the cases reported up to July 1, 1905: Thirty-two authors report 54 cases, with histories completed, and 20 additional cases alluded to. Of these patients, 22 are males, 25 females, and in 7 no sex is reported. Twelve postmortems have been performed, and in 6 cases the eyes have been examined microscopically. Twenty-seven cases occurred in Jews, 6 in Gentiles, and in 21 cases no data is given. In 15 cases nystagmus was present. The youngest patient was four months old; the oldest three and three-fourths years. The statistics compiled from my table differ from those published by Spiller and Falkenheim, owing to the omission from the list of the same case published by different authors.

THE ELIMINATION OF THE NOSTRUM TRAFFIC,

AN EVIDENT DUTY OF AMERICAN PHYSICIANS.*

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What is a nostrum?

Why should nostrums be eliminated?

Why should physicians be interested in their elimination?

As an answer to the last and certainly the most directly interesting of these three questions it may be pointed out that, apart from the duties and obligations imposed on physicians, by the traditional oath of Hippocrates, the practice of medicine, in every state, is hedged about and protected by laws that are designed to prevent the ignorant and the incompetent from imposing on the people of the commonwealth, and also, in a measure at least, are designed to protect regularly licensed members of the medical profession from imposition and unnecessary competition in the practice of their science or art.

The members of the medical profession, on the other hand, in thus seeking and accepting the protection secured to them under these several statutory enactments, are expected to guard and to protect the lives of the citizens of the state from infection and disease and, incidentally at least, to point out the dangers and, if possible, prevent the use, or at least the abuse, of anything that will in any way endanger the health or the well-being of the individual members of the community.

It is in this capacity, as guardians of the health and the well-being of the individual members of the community, that physicians are in duty bound to take cognizance of the present widespread inquiry into the status of nostrums and their possible deleterious effects on the health and even the lives of unwitting or indiscreet consumers.

WHAT IS A NOSTRUM?

As an answer to the question, What is a nostrum? we may safely accept the usual dictionary definition and include as nostrums, or at least as objectionable nostrums, all medicines "the ingredients of which are kept secret for the purpose of restricting the profits of sale to the inventor or proprietor." Personally, I believe that the word nostrum, in keeping with its evident derivation from the Latin word *noster*, might properly include all medicines or medicinal preparations in which any one individual or firm claims, or maintains, a proprietary right, either by secrecy, trade privileges or official letters patent, thus making the word nostrum practically synonymous with the term proprietary medicine, as used at the present time. I myself believe that this broader definition is quite in harmony with existing conditions and fully in keeping with the facts.

Restricting the word nostrum, however, as being applicable only to proprietary medicines which are in any way secret, or for which extravagant claims are made, as therapeutic agents, I am sure that you will readily agree with me that under no condition is the use of such substances in keeping with what purports to be a scientific occupation, and least of all can their use be made compatible with that most important and most responsible of all duties, the conservation and preservation of human lives.

Surely you will agree with me that if there is any one field of scientific investigation in this wide world that should be absolutely free from commercialism, or even a suspicion of secrecy, trickery and fraud, it should be the science of medicine in the very widest application of that term.

How far removed we are from even an approximate realization of this ideal becomes evident when we learn that, at the present time, nostrums appear to constitute fundamental necessities in the armamentarium of many physicians, as well as being the ever-ready cure-all recommended by blacksmiths and tailors.

The reasons for this unfortunate state of affairs are varied. In the first place we must not forget that nostrums, even the vilest of them, are not readily differentiated from what might be perfectly legitimate proprietary medicines, and we must also bring ourselves to realize that manufacturers of otherwise unobjectionable remedies have adopted, and are now using, highly objectionable methods in exploiting their preparations.

Another potent factor in developing the present widespread use of nostrums by physicians is to be found in the fact that the physician who is at all susceptible to extraneous influences can always find, ready at hand, literature suggestive of the curative qualities of nos-

2. Sachs: Jour. Ment. and Nerv. Dis., January, 1903, p. 1.

3. Hirsch: Jour. Ment. and Nerv. Dis., 1898, p. 538.

4. Spiller: Am. Jour. Med. Sci., January, 1905, p. 45.

*Read before the Philadelphia County Medical Society, Dec. 27, 1905. The report of this meeting is given in this issue, page 218.

trums. Even in some of our present-day monographs and text-books on therapeutics, in which the application and uses of the better known and official remedies are fairly buried in a mass of contraindications and verbose descriptions of untoward results, we find that the indications and uses of the newer remedies are frequently copied verbatim from the advertising material sent out by the manufacturer, who usually takes very good care that this kind of literature never contains even a suggestion of anything derogatory to the product he advertises.

The medical practitioner, not appreciating that the derogatory testimony, in connection with the older and official remedies, represents the accumulated evidence of decades, if not of centuries, of continued use, naturally enough turns to the remedy that has little or nothing recorded against it. After a physician has met with repeated failures in the use of any given substance, he may casually inquire into the reason for this almost utter lack of disparaging evidence, in connection with the newer remedies. If he looks far enough he will find that one reason, and a very important one, is to be found in the fact that few, if any, of us care to give publicity to our failures, no matter in what line or in what direction.

The second, and by far the more potent and more evident, reason, however, is to be found in the fact that practically all new remedies belong to this gigantic class of nostrums that threatens to stultify and to debase the practice of medicine by suppressing all information in any way derogatory to the commercial success of any particular preparation.

"ETHICAL" PREPARATIONS.

Some of you may have the feeling that there is a deep, wide something that naturally separates so-called "patent" medicines, or popular nostrums, from the "ethical" proprietaries that are advertised exclusively to physicians.

I want to assure you, and to assure you most positively, that, at the present time at least, this chimerical something exists only in the minds of well-paid detail men, and is the justification that is so anxiously sought for by editors of medical journals that depend largely on the advertising of nostrums for their existence.

That manufacturers themselves do not appreciate this distinction is to be noted by the fact that 21 per cent., or fully one-fifth, of the members of the Proprietary Association of America are firms that exploit strictly "ethical" preparations, while an additional number of the members are connected either directly or indirectly with the manufacture, or at least the sale, of ethical preparations in addition to making nostrums for popular use.

That jobbers or wholesalers do not recognize the distinction is evidenced by the fact that antijag, antikamnia, celerina, cerebrine, curalcene, opticura, ovarine and ozonine, to the number of some twenty-five or thirty thousand, nestle cheerfully side by side, in strict alphabetic order, in the proprietary medicine catalogues that are periodically issued by these firms. As for the retail druggist, he has long since found it to be to his advantage to array these articles promiscuously on his shelves, or even in his shop window, labeled at cut-rate prices.

If you were to go into the shop of the corner druggist and, as a layman, ask him to sell you an ounce of hydrated chloral, as such, he would probably refuse. If, however, you were to ask him to sell you a bottle of bromidia, he will be only too glad to supply you with

practically the same amount of chloral, plus a number of other active ingredients, at cut-rates, that is, from 10 to 25 per cent. below the regular retail price. Some druggists might refuse to sell you half an ounce of acetanilid, but practically all will willingly sell full or broken packages of antikamnia, Kohler's antidote, ammonal, orangeine or a hundred and one similar compounds, including their own. Cut-rate druggists also advertise phenacetin, sulfonal, trional and even veronal, though they are prevented by a sense of decency or propriety, or it may be by law, from offering codein, morphin or cocain in their regularly issued price lists. Some retail druggists have gone even further in their zeal to popularize "ethical" proprietaries. They occasionally issue a special cut-rate price list of "Prominent Pharmaceutical Products Frequently Prescribed by Physicians." Such a little book is useful in two ways; it induces your patient to buy outright a full bottle of the nostrum that you have prescribed for him, at the same time retaining your prescription as authority for its continued use; and it also serves as an indication of the ethical preparations that are available to such of the laity who think that, because they are prescribed by doctors, "ethical" preparations are necessarily more efficient than the ordinary "patent" medicine or popular nostrum.

If the promiscuous sale of peruna, Hostetter's bitters and Pinkham's compound is to be discouraged and decried, on account of the alcohol they contain, if the sale of catarrh cures containing cocain is to be generally prohibited, what steps, if any, should be taken to discourage the promiscuous sale of such "ethical" preparations as bromidia, papin, chlorodyne, somnos and a host of other scarcely less dangerous nostrums, such as vin Mariani, that are daily sold to the laity?

ADVERTISING METHODS.

That even the most reputable manufacturers of proprietary preparations have developed a tendency to suppress the publishing of derogatory reports must be evident to all who will take sufficient interest to peruse the advertising material they send out. You have, no doubt, been appealed to by manufacturers of synthetic chemicals to report your successes with the use of their preparations. But have you ever been asked to report your failures, the untoward results that you have met with or the drug habits that have been formed? Have you ever met with an article outlining the contraindications for the use of their remedies in the pamphlets with which these firms supply you at frequent intervals? Do you believe that the active coal-tar preparations are applicable in all cases, regardless of age, sex, or physical infirmities? Do you believe that no dangerous and even serious accidents have ever followed their use, and do you know that practically all of the well-known preparations of this character are freely sold to and widely used by the public, regardless of possible consequences? If firms that are guaranteed an absolute monopoly of their products for a period of seventeen years and are further assured of a perpetual prestige by virtue of having been the first to bring forward any given remedy in this country, will deliberately and persistently discriminate in favor of propitious and at times even garbled reports, what can be expected of firms whose very existence depends on a more or less thinly veiled trade secret? Can you even conjecture the depths of direct or inferred dishonesty to which such concerns will descend to create a market for their products?

Properly to appreciate the reasons why the present-

day traffic in nostrums should be done away with we must fully realize that the harmful effects are invariably due to promiscuous and indiscriminate use of any one of them in all, or nearly all, cases that present themselves while that particular nostrum is in vogue. While physicians themselves are largely to be blamed in this direction, it is to the cunningly worded and frequently misleading advertising matter sent out by the manufacturers that we must look for the direct incentive to the misuse and abuse of nostrums. For illustration: When the manufacturers of one of the widely advertised mud poultices claim that their preparation will cure appendicitis, it is an untruth, and in the hands of the inexperienced and the unsophisticated this statement becomes a dangerous untruth and leads to the sacrifice of human lives. When the manufacturers, or rather the vendors, of that elegant confection that "works while you sleep" claim that their product will cure insomnia, liver troubles, intestinal disorders and a host of other more specifically mentioned ailments, they are telling an untruth and a dangerous untruth, because it leads the laity to temporize with what may be serious affections, or, even worse, because the very use of this nostrum may produce a condition that requires the regular use of cathartic medicines and thus lead up to an atonic condition of the intestinal tract, chronic constipation, a reduced power of resistance and a thousand and one possible complications that may follow in their wake.

These are but suggestions of the possibilities for harm that are to be found in connection with the twenty-five or thirty thousand nostrums exploited at the present time. Even admitting that nostrums are active and efficient and that they are useful under certain conditions, they are nevertheless dangerous and to be condemned, because they are not openly and honestly put out on their merits.

From patented synthetics to liquozone and peruna is, indeed, a far cry in the world of proprietary medicines, and what a mass of trickery, deceit, dishonesty and fraud is to be found between them!

THE COUNCIL ON PHARMACY AND CHEMISTRY.

Even to enumerate all of the preparations that are advertised or available would take hours, if not days. To sort them over and to estimate their probable worth, on the available evidence, is a task that would appear to be well nigh interminable. Some attempt is now being made to sort out from this fathomless, boundless mass of material those preparations that are generally considered to be worthy of recognition or that are at least evidently less objectionable than the rest.

This attempt is being made, in connection with the American Medical Association, by the recently instituted Council on Pharmacy and Chemistry. It is the object of this council to gather evidence for and against the several proprietary preparations that are now being offered to the medical profession of this country, and by comparing the evident status of the several remedies with the rules that have been adopted as a minimum of requirement to decide on their eligibility to appear in a semi-official list or book to be called "New and Non-official Remedies."

That this effort is not being made any too early must be evident to those who realize the ever-increasing number of evidently fraudulent nostrums that are being exploited at the present time. The difficult and thankless task of selecting the more worthy proprietary remedies that confronts the members of the Council on Pharmacy

and Chemistry of the American Medical Association would certainly appear to merit your attention and active co-operation.

CO-OPERATION OF THE PROFESSION.

I believe it is your duty, however, to do more, infinitely more, by taking a personal interest and an active part in this tremendously important undertaking of eliminating at least the more objectionable nostrums of all kinds from popular sale and certainly to banish from the practice of medicine the more objectionable compounds that are exploited as "ethical" preparations.

I also believe that it is the duty of each one of you individually to become thoroughly acquainted with at least some of the phases of the deceit and deception that are practiced by the promoters of proprietary medicines or nostrums and to insist that manufacturers of remedies, designed ostensibly for use by medical practitioners, exploit their wares honestly and in keeping with their merits.

I believe it to be your duty to inquire into the influences that manufacturers of nostrums, individually as well as collectively as members of the powerful and wealthy Proprietary Association of America, have exerted, do exert and will exert on the secular as well as on the professional journals of this country, and to try to overcome or, if possible, to nullify this influence by your concerted efforts and action.

It will be idle for you to suppose that any appreciable change in the existing conditions can be brought about by your say-so or by your wishes. The impending conflict, to eliminate only the more evident nostrums from the pale of respectability, while it is admittedly disagreeable and unpleasant, is full worthy of your aid and your attention. For ultimate success it will be essentially necessary that each one of you contribute, not alone occasionally but frequently and persistently. You can contribute most readily if you will insist that the untoward results from the use of proprietary medicines be given proper publicity in connection with the name of the remedy. You can also assist by informing your patients and your friends of the possible dangers that are to be encountered in the promiscuous or long-continued use of even the least objectionable and apparently most harmless nostrum.

You can also contribute if you yourself will desist from the use of proprietary medicines, with the composition or the limitations of which you are not thoroughly familiar. You will be able to do this the more readily if you will become more thoroughly familiar with the almost inexhaustible fund of well-known and well-tried remedies of the Pharmacopeia, remedies that are easily tested, readily proved, widely used and are certainly obtainable in any section of this country.

This I believe to be your duty, as citizens of the commonwealth, in return for the protection and the privileges that are being accorded to you.

I believe it to be your duty to your patients, as physicians, in order to merit their continued confidence and patronage. And, last, but by no means least, I believe it to be your duty to yourselves, as men, in order to foster and to preserve your own self-esteem and self-respect.

Treatment of Pelvic Diseases.—Dr. J. F. W. Whitbeck says that in the treatment of pelvic diseases a knowledge of general internal medicine and of the general principles of surgery is of the first importance to the patient, and must be of the highest advantage to the physician himself.

THE TREATMENT OF LEUCORRHEA WITH THE ACTUAL CAUTERY.*

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BALTIMORE.

There are probably few members of this society who are specialists to the extent that they do not treat diseases peculiar to women. If I were to ask what symptom is complained of most frequently in your experience with such diseases, I believe the majority of you would agree in one answer. Certain it is that during several years' experience in a large clinic the question most frequently asked me by visiting physicians was, "What do you do for leucorrhea?" Rather the question was usually presented in this form, "How do you treat endometritis?" the general belief among physicians being that leucorrhea is an expression of chronic inflammation of the endometrium. Our laboratory experience demonstrates, however, that chronic inflammation of the endometrium is comparatively rare, while cervical inflammation is one of the most common of lesions.

The physician's first duty in treating a patient complaining of leucorrhea is to locate, if possible, its point of origin. In some cases, particularly those of acute gonorrheal origin, the inflammation may be confined to the vulvar region; but in the majority of the cases of longer standing the major portion of the leucorrheal discharge comes from the cervix. If the patient complains of severe pain, with periodic discharge of pus and coincident relief of pain, one must carefully examine the glands of the vulva and urethra for evidence of abscess formation. The same periodic symptoms may arise from a tubal or tubo-ovarian abscess which is discharging periodically through the uterus or through a fistula in the rectum or vagina. It may be difficult, from the history alone, to distinguish between these two regions, but there should be but little difficulty in locating the seat of the abscess by a visual and bimanual examination.

Other sources of leucorrheal discharge to be carefully borne in mind and excluded before beginning treatment are carcinoma and other ulcerative diseases of the vagina, cervix or fundus uteri, or a necrosing myoma of the fundus, or pelvic abscess from any origin discharging into the genital tract.

It is not my intention to enter into a detailed account of the present methods of treating leucorrhea. I dare say that most of you have had more or less experience with douches, tampons, vaginal suppositories and various surgical methods, and I am confident that you have had very indifferent success with most of your cases. With douches your patient has kept fairly clean during the period that she has been faithful in their use. With tampons you have had apparent complete success, and your patient has reported herself cured only to return for treatment after a period of weeks or perhaps months. Operative measures may have given better results. Deep and thorough curettage of the cervix may have given permanent results in a few mild cases. The Emmet resection of the cervix has given partial success, while with a complete amputation of the cervix your patient may have been entirely relieved of her leucorrhea.

The method that I wish to present for your consideration to-day will appeal to you because of its simplicity, and, in the event of its use, because of its results. I do not claim originality for this procedure, as it deviates only slightly from methods which we have used for a number of years.

During my early association with Dr. Kelly we often treated cases of cervical gland hypertrophy by making multiple radial incisions within the external os by means of a scalpel. This opened many of the dilated cervical glands, or Nabothian follicles, and allowed their mucous contents to gush out. I often noticed, however, that after recovery of such patients from their principal operation the cervical condition did not seem to be altered. Later it was our custom to take the hot blade of a Paquelin cautery and run it about over the hypertrophied mucosa of the cervix. This destroyed the superficial layers of tissue, causing a temporary necrosis. But as soon as the surface epithelium was replaced the leucorrhea seemed to be as profuse as ever. My method grew out of these two, and consists in radial incisions deep into the cervical tissues by means of the cautery blade. I believe the other two methods failed because the incisions with the knife-blade simply emptied, and failed to destroy, the dilated cervical glands, while the surface application of the cautery failed to either empty or destroy the deeper glands. The deep radial cuts with the cautery empty the deep cervical glands and cause such a wide necrosis of tissue that many of these deep glands are obliterated in the healing process.

One great advantage of this method is that it may be applied in office practice without giving anesthesia of any kind. With the patient in the dorsal or lithotomy position, a broad-bladed Sim's speculum is introduced into the vagina, the anterior lip of the cervix is firmly grasped with a tenaculum forceps and the cervix is pulled down as near the vulvar orifice as possible. The nurse or assistant stands by with the cautery already heated. On transferring the cautery to the operator the nurse continues to work the cautery bulb with one hand, while she retracts the Sim's speculum with the other. The operator retains the tenaculum in one hand and manages the cautery with the other. The strokes should be made one at a time, the cautery being removed from the vagina after each stroke, as the patient feels the radiated heat on the vaginal walls. The patient is warned that she will feel the heat, but that she must not move, as there will be no actual pain. An exception to this rule is found in those patients who are suffering from a painful cervical scar. This condition is rare, and when present I use preliminary anesthesia by applying for ten minutes a cotton tampon soaked with a 20 per cent. cocaine solution. I have been able to relieve two cases of painful scar by this method.

The number and depth of the radial strokes depend largely on the condition of the cervix, but in general I make five or six strokes at each treatment, and burn to a depth of 2 to 5 mm., or, roughly, from one-eighth to three-sixteenths of an inch. The length of the stroke naturally varies with the conditions present, but it should extend over the area of the hypertrophied cervical mucosa, which generally covers all of the mucosa in sight. The treatments are given once in three weeks. A sterile strip of gauze is left in the vagina to take care of possible hemorrhage. The patient is instructed to withdraw this the next evening, and she is warned that the leucorrheal discharge during the first week or ten days will be more profuse than ever, and that she may have some slight bleeding. She is instructed to go to bed and remain there if the bleeding is at all profuse. I have not known hemorrhage to take place the day of treatment, but there is often a little hemorrhage after three or four days, when the necrosis of tissue is at its height, and in one or two instances this hemorrhage has been sharp enough to alarm the patient. A daily douche is

* Read before the Cumberland Valley Medical Association.

recommended during the interval between treatments. I have had three treatments produce such a beneficial effect in a marked case of leucorrhœa that the patient considered herself cured and did not come for further treatment. The usual number of treatments ranges from three to six and the greatest number of treatments I have given any patient is ten. I operated on this patient in August, 1903, during an acute attack of gonorrhœa peritonitis, and did a supra-vaginal amputation of myomatous uterus, associated with gonorrhœal pus tubes. After recovery from the operation she continued to have a profuse leucorrhœal discharge from a lacerated and hypertrophied cervix. After ten cautery treatments the cervical mucosa is devoid of any evidence of inflammation and there is no leucorrhœal discharge.

I have found the chronic gonorrhœal cases the most obstinate ones to treat, it being necessary to destroy all of the deep cervical glands before the leucorrhœa ceases. Another important consideration in these gonorrhœal cases is that you may be able to greatly reduce the leucorrhœa without stopping it entirely. In other words, the cervical catarrh may cease under the cautery treatment, but the leucorrhœa may continue more or less profuse because of the endometritis and the metritis which are occasional sequelæ in an ascending gonorrhœal infection. But many gonorrhœal infections do not gain a foothold higher than the cervix, and some which do go higher are taken care of by nature and leave no permanent lesions beyond the cervix. These cases may be classed as curable by the cautery method.

The quickest and most brilliant results are obtained in the cases of cervical hypertrophy and eversion of the mucosa due to multiple child-birth.

I am sure you are ready to question me regarding the after-results of this mode of treatment, particularly with reference to child-birth. So far as I know, but two of my patients have borne children after this treatment, and both of these had perfectly normal labors. The first of these two women was the first case that I treated by this method, and, I think, represents the most brilliant result that I have obtained. She was a young woman with a child six years old by her first husband. She had been married to her second husband two years and was most desirous of having children. This aspiration, however, seemed beyond the range of probability because of a most profuse leucorrhœal discharge. In spite of douches and tampons, this discharge was so profuse that in drying about the vaginal walls it formed thick membranes, and the husband, a physician, frequently brought casts of this membrane-like formation for microscopic examination, in hopes that it might throw some light on the nature of her disease. On her first admission to the hospital Dr. Kelly thoroughly dilated and curetted the uterus and performed an operation for relaxed vaginal outlet. On a third admission, nine months later, a vaginal celiotomy was done, and the left Fallopian tube was removed because of inflammation. At this operation Dr. Kelly made a thorough application of the Paquelin cautery to the hypertrophied cervical mucosa. During her convalescence the profuse leucorrhœal discharge persisted, and it was in her case that I began the method of deep radial incisions with the cautery. She left the hospital after my first treatment, and I have no record of the number of treatments I gave after her dismissal from the hospital, but I am sure that it was not more than three. After their arrival at their distant home I received frequent letters expressing deep gratitude for her delivery from the disagreeable leucorrhœa, and one year after her return she had a normal labor.

While the necrosis and obliteration of the deep cervical glands must result in a scar tissue formation, I believe that with my method of radial incisions enough healthy stroma persists to prevent anything like an universal circular scar, such as we get by complete amputation of the cervix, and for this reason we need not fear dystocia at labor.

In conclusion I would again impress on you the necessity for first making an accurate diagnosis before beginning to treat any case of leucorrhœa. If you find an eroded cervix and have the least suspicion of beginning cancer, be sure to place some of the suspicious tissue in the hands of a competent pathologist before wasting time in any form of treatment. If you are dealing with a fresh case of gonorrhœal infection, do not use the cautery or any other form of tissue-destroying treatment that might stir up a cervical infection and carry it to higher localities. In acute gonorrhœa I use first the douches and later the tampons, and if the leucorrhœa persists after twelve weeks and is seen to come from the cervical glands I begin the cautery treatment. In the chronic gonorrhœal cases, do not persist too long in the treatment of the cervix, for the leucorrhœal discharge may depend on inflammatory conditions higher in the uterus.

1420 Eutaw Place.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN. CHAPTER IV.

THE ACETANILID GROUP.

The enormous growth of the traffic in proprietary remedies mainly composed of acetanilid and allied substances is probably the most potent factor in arousing physicians to a realization of the part they play—often unconsciously—in furthering the selfish schemes of unprincipled manufacturers. The Council on Pharmacy and Chemistry of the American Medical Association has shown that antikamnia, phenalgin, salacetin and ammonol are mere mixtures of acetanilid with other substances, and we can no longer prescribe these acetanilid mixtures under the impression that we are using true chemical compounds. It is probable that acetanilid figures more extensively in self-drugging than does any other single substance.

Official Antipyretics.

The following are official:

ACETANILIDUM.—U. S., Br., Ger.—Acetanilid, Antifebrin, Phenylacetamid, the monoacetyl derivative of anilin, occurs in colorless crystalline laminae or powder, permanent in air, odorless, of a slightly burning taste, and very slightly soluble in water.

It was first prepared by Gerhard in 1852, but was not used medicinally until nearly thirty years later, when it was introduced under the trade-marked name of Antifebrin. It is now employed very extensively, its extreme cheapness—less than 2 cents an ounce—causing it to be used as the basis of many pretended synthetics.

Average dose: 0.20 gm. (3 grains).

PULVIS ACETANILIDI COMPOSITUS.—U. S.—This has been made official to serve as a substitute of uniform standard for the host of more or less similar compounds, such as we have enumerated above, which have come into such unfortunate vogue.

The official preparation consists of 70 per cent. of acetanilid, 10 per cent. of caffeine and 20 per cent. of sodium bicarbonate.

Average dose: 0.3 gm. (5 grains).¹

ACETPHENETIDINUM.—U. S.—Acetphenetidin, better known as Phenacetin, is official in British, German and other European countries as Phenacetinum. It is officially described as Acet-para-phenetidin, a phenol derivative, the product of the acetylation of para-amido-phenetol. Phenacetin occurs as white glistening scales or a fine crystalline powder, odorless and nearly tasteless. It is soluble in 925 parts of water and in 12 parts of alcohol. Phenacetin was patented in this country in 1889, though it is claimed to have been used in Germany at least two years previously. The patent expires next March.

ANTIPIRINUM.—U. S.—Antipyrin is official in France as Analgesin, in Great Britain as Phenazonum, and in Germany as Pyrazolonum—phenyldimethylicum. Chemically, it is described as Phenyl-dimethyl-pyrazolon, and is obtained by the condensation of phenyl-hydrazin with aceto-acetic acid and subsequent methylation of the product. Antipyrin occurs as a colorless, almost odorless, bitter tasting, crystalline powder, that is readily soluble in water and soluble in about 1 part of alcohol.

Average dose: 0.250 gm. (4 grains).

Antipyrin was first prepared by Dr. L. Knorr of Erlangen, in 1884; it was investigated physiologically by Professor Filehen, who reported it as an active antipyretic.

It will be more satisfactory to consider the therapeutics of these antipyretics collectively, with occasional comments on the separate members of the group.

They are mostly used for headache and for the reduction of temperature in fevers of an intermittent type, but it must not be forgotten that they do not remove the underlying cause, and that the use of these drugs in continued fevers is liable to be harmful, since the temperature is sure to return to its former height, or to go even higher, when the action of the antipyretic has worn off.

The alarming collapse that may follow even a moderate dose of acetanilid serves as a warning against its use when there is reason to suspect any tendency to that condition. On the other hand, a sudden lowering of the temperature in fever may result in collapse symptoms wholly independently of the nature of the remedy employed. Acetanilid has the greatest and phenacetin the least tendency to produce collapse among the official preparations of this nature. It is to overcome this tendency that caffeine is used in the official compound acetanilid powder, but it is doubtful if it is of any great value in guarding against this collapse. There can be little doubt that many of the sudden deaths, of which we so constantly read, occurring without apparent cause on the streets and elsewhere, are in reality due to overdosing with nostrums containing acetanilid.

Women particularly should be cautioned against the promiscuous use of nostrums of this type during menstruation.

When it is remembered that antipyrin and acetanilid are derived from phenylhydrazin, and anilin—active blood poisons—it is not surprising that the official derivatives possess the properties of these drugs in a minor degree.

A peculiar cyanosis is often seen about the ears, the lips and the nails, particularly after large doses of acetanilid, due to its action on the red blood cells; this has been noticed even in the absence of hemoglobin in the blood.

Acetanilid in large doses causes destruction of red blood cells, and methemoglobin may be thrown into the plasma.

The collapse seen after ingestion of the antipyretics, particularly acetanilid (least with phenacetin) is due to several causes. Probably the most frequent cause is the mere lowering of the temperature which exposes the collapse actually existing but hidden by the high temperature. This result is not to be charged to the antipyretic. It is treated exactly as

collapse from any other cause would be—by stimulation. Very large doses of the antipyretics act on the heart muscle, causing depression, and on the vasomotor center, causing collapse.

The acetanilid habit is not rare and it leads to a deplorable condition, but the symptoms generally disappear when the drug is withdrawn.

Profuse perspiration is a disagreeable effect, more frequently seen after acetanilid and antipyrin than after phenacetin. If this is so annoying as to demand interference, a hypodermic injection of 0.5 mg. (1/150 grain) of atropin will be found effective. Redness and irritation of the skin are frequently seen after the use of the various antipyretics of this group. They are probably due to vasomotor changes.

Antipyrin in solution has been used extensively to check the bleeding of superficial wounds, and all the various members of this group are to some extent antiseptic.

While so much space has been devoted to the contraindications and untoward effects of these agents, it is not with a view of discouraging their use, but rather that the physician may avoid the disappointments which arise from their use in unfavorable conditions.

Acetanilid may be given alone in powder or in capsules, in adjuvant or aromatic elixir, or suspended in syrup or mucilage of acacia. The compound acetanilid powder affords a convenient form for the relief of headache. A dose of 0.3 gm. (5 grains) in powder or capsule is usually effective; this may be repeated once an hour if necessary, but the more frequent repetition is to be avoided.

Compressed tablets of such insoluble substances as phenacetin and acetanilid are not recommended as they disintegrate slowly.

An acetanilid powder, containing ammonium carbonate instead of caffeine, is used in the German Hospital of Philadelphia,² when it is desired to avoid the cerebral stimulation of caffeine.

Antipyrin is very soluble in water and in alcohol, and hence it may be given in simple aqueous solution, in aromatic elixir or in powdered form.

Acetphenetidinum (phenacetin), being less objectionable than acetanilid and antipyrin, may be expected to replace them very largely when its price is reduced. Its insolubility in water has led to its extensive use in powder and in capsules.

A combination of phenacetin, caffeine and sodium bromid has attained considerable popularity; these may be combined in various ways.³

Chemistry of These Preparations.

A brief review of the chemistry of the antipyretic group will show the relationship of the various members to each other.

Quinin being a derivative of quinolin, many attempts were made to produce it synthetically, with the resulting discovery of a number of quinolin derivatives which possess antipyretic properties, but all of them dangerous because of their tendency

| | | |
|---|-----------|-----|
| 2. R. Acetanilid | | |
| Sodii bicarb., of each | grs. xxii | 1 5 |
| Ammon. carb. | grs. xl | 75 |
| This is sufficient for ten powders of about 0.3 gm. (5 grains) each, one being given every three or four hours to reduce fever. For headache one is given and repeated if necessary in an hour. | | |
| 3. R. Acetphenetidinal (phenacetin) | grs. xv | 1 |
| Caffein | grs. viii | 15 |
| Sodii bromidi | grs. xli | 31 |
| Elixir adjuvant | ℥ss | 30 |

The mixture is to be shaken and two teaspoonfuls given as a dose. This is often used for headache, one dose being usually sufficient.

Still another, widely used, acetanilid mixture is a migraine elixir that is being exploited by a number of manufacturers. A representative formula, for a preparation of this kind, may be given as follows:

| | | |
|----------------------------|-----|-----|
| R. Acetanilid | ℥ss | 2 |
| Caffein | ℥ss | 2 |
| Sodii bromidi | ℥ss | 8 |
| Alcoholis | ℥ss | 4 |
| Elixir aromatic, q. s. ft. | ℥ss | 100 |

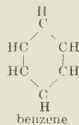
Average dose 5 c.c., or 1 teaspoonful.

If 20 c.c. of tincture of cardamon be added to this, or if adjuvant elixir (which is also official), be used instead of the aromatic, the appearance of the mixture will be much enhanced and the psychological effect increased.

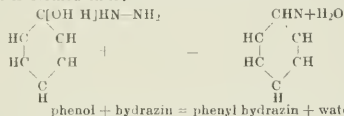
1. It should be noticed that the dose of acetanilid in the mixture is larger than the official dose of acetanilid; yet it is supposed to act more effectively when mixed with sodium bicarbonate. It is to be regretted that such a combination has been given official recognition. The reason, of course, is evident—persistent advertising of certain nostrums has created an abnormal demand for acetanilid combined with a supposed heart stimulant. But, as it is extremely improbable whether caffeine does counteract the harmful effects of acetanilid, it is not wise to recognize such a combination even to meet a supposed demand.

to produce collapse. All of these are now practically obsolete.

Another substance having antipyretic and collapse actions is phenylhydrazin, which is of interest because of its derivative, antipyrin. Hydrazin N_2H_4 (or H_2N-NH_2), which is formed by the union of hydroxylamin and ammonia, usually exists in combination with an organic radical. Starting with the benzene ring, C_6H_5 , or



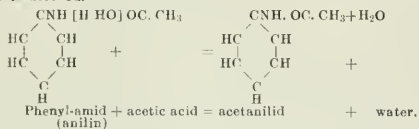
phenol (carbolic acid) is formed by replacing an H with OH. If this OH in turn be displaced by the hydrazin radical, phenyl hydrazin is formed thus:



Though many derivatives of phenyl-hydrazin have been exploited, antipyrin and its compounds are the only ones in general use.

When the practitioner uses drugs which at best are so potent for harm he will do well to employ them in their simplest form rather than in such unofficial combinations as hypnal (chloral and antipyrin) or salpyrin (salicylic acid and antipyrin).

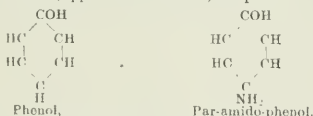
Acetanilid or phenyl-acet-amid is obtained by the action of boiling glacial acetic acid on anilin or phenyl-amid, as it may be termed. By introducing "acet" before "amid" the chemist name is derived.



When other acid radicals replace that of acetic acid similar compounds are formed, which are in no wise superior to the official. Thus we have benz-anilid and exalgin (or methyl acetanilid), the latter differing from acetanilid only in having a CH_3 group replacing an H.

It will be understood from its chemistry why acetanilid can be prepared so cheaply and, therefore, why it is so extensively employed in the nostrum traffic.

Phenetidin is important as the basis of the phenacetin group. Chemically it is the ethyl ether (sulphuric, so called) of amido-phenol. If an amid group (NH_2) replaces the H in the para position (opposite to the OH) of phenol



we have par-amido-phenol, and if the OH is then replaced by ether we have phenetidin. Various acid radicals may replace an H of the NH_2 . If it be the acetic acid radical we have phenacetin, if lactic acid we have lactophenin.

These formulas may appear complex, but a careful examination of them will show the relationship existing between the various members of the group. If a practitioner finds the official phenacetin unsuited to his purpose in a given case, it is not probable that another compound, differing merely in the nature of an acid radical, will prove more beneficial.

Among the phenetidin series there are, besides the official phenacetin, many in which the syllable "phen" indicates the phenetidin source. They include phenocoll, salophen, lactophenin and many others.

We shall have occasion to mention urethane (ethyl carbamate) among the chloral hydrate group, and it may be said

that several of its derivatives have been used as antipyretics, but they do not merit further consideration here.

In connection with the subject of antipyretics we may mention a number of substances which, except historically, are now of little interest. Kairin, discovered by Dr. O. Fisher in 1882, was the first of the coal tar compounds to be introduced as an antipyretic on the strength of physiologic experiments. It was also one of the first of the medicinal synthetic chemicals to be patented. The older physicians may remember its widespread use and some of the exaggerated claims that were made for it and how, despite this, it fell into disfavor and was soon forgotten.

Thallin, made by Dr. Skraup in 1884 and investigated in the clinic of Nothnagel, soon shared the fate of kairin, despite liberal advertising.

RESORCINOL.—U. S.—Resorcin (U. S. P. 1890) discovered by Hlasiwizt and Borth about 1862, was used as an antiseptic and later as an antipyretic, but was found to be too dangerous for the latter purpose. It may be absorbed even after external application, when its effects resemble those of phenol (carbolic acid).

The official salicylic acid, discovered in 1839, was introduced as an antiseptic in 1873 and later as an antipyretic. The salicylates now find their greatest usefulness in the treatment of acute rheumatism. They will be discussed later.

THE CHLORAL HYDRATE GROUP.

The chloral hydrate group includes, besides Chloral Hydrate, Chloralformamid (Chloralamid), Paraldehyd, Ethyl Carbamate (Urethane), Sulphonmethane (Sulphonal and Sulphonethylmethane (Trional). Several of these preparations are so well known that we may dismiss them with a few words, but some of them may be profitably discussed at greater length.

It is easy to drug anyone into unconsciousness, but the members of this group do not possess curative properties and at most they only secure rest and sleep for the patient. Chloral hydrate is dangerous and we wish to point out some of the dangers attending its use, either alone or in the nostrums which contain it.⁴

All authorities agree that it is unjustifiable to use large doses of chloral hydrate, either alone or in combination with other official drugs. When a moderate dose of chloral hydrate fails to induce sleep in cases of severe pain, it is very much more rational to give a dose of morphin, or other analgesic, than to repeat the chloral hydrate indefinitely. The chloral hydrate habit is not rare, and if its sale at cut rates in the shape of nostrums with fanciful names is to go on unchecked, we can hardly hope to see any diminution of the baneful practice. When we employ hydatid chloral and sodium, or potassium bromid in simple solution it is with full cognizance of the danger, but because the exigencies of the case demand their use, and we only use them with caution.⁵ In a general way the contraindications for chloral hydrate are the same as for chloroform. In the present edition of the Pharmacopeia it is official as:

CHLORAL HYDRATUM.—U. S.—Hydrated Chloral.

Average dose: 1 gm. (15 grains).

Of the unofficial, more or less closely related drugs, hypnal (antipyrin and chloral hydrate) has been mentioned. Dormiol

4. In Chapter II attention was called to Bromidia, which is directed to be given in as much as teaspoonful doses every hour until sleep is produced, pain being mentioned as one of the indications for its use. Since chloral hydrate is not an anesthetic, except in unsafe doses, it is readily seen how dangerous this advice is, particularly when we are dealing with such intense pain as that encountered in appendicitis, even admitting that the preparation contains the other ingredients claimed.

5. A fairly safe and very efficient hypnoptic commonly used in Bellevue Hospital in New York affords a convenient form of using sodium bromid with hydrated chloral.

| | | | |
|---------------------|-------|-----------|------|
| B. Chloral | ..... | ℥ss. xx | 1/30 |
| Sodii bromidi | ..... | ℥ss. lxxx | 5/20 |
| Syr. aurantii cort. | ..... | ℥iv | 16 |
| Aque q. s. ad | ..... | ℥i | 30 |

M. Two teaspoonfuls are given at a dose, and this may be twice repeated at intervals of an hour if necessary, but more than two doses are rarely required in the absence of severe pain.

The hydrated chloral may be slightly increased in the prescription in which case the dose should not be repeated more than once.

is a combination of amylene hydrate and chloral hydrate, while chloralose, a combination of chloral hydrate and glucose, partakes of the action of morphin and is rather expensive. Chloreton, a more recent product, is not entirely devoid of danger and is not always so certain in its action as chloral hydrate, while butyl chloral hydrate, or croton chloral hydrate, is one of the older compounds that has been found wanting and is now little used. Of the official compounds of this group we have:

Chloralamid and Paraldehyd.

CHLORALFORMAMIDUM.—U. S.—Chloralformamid. Chloralamid. This has practically the same action as therapeutic doses of chloral hydrate, the latter being formed in the body by decomposition of chloralformamid.

Average dose: 1 gm. (15 grains).

PARALDEHYDUM.—U. S.—Paraldehyd is slower in its action transparent liquid, slower in its action than chloral hydrate, but also safer. It has the disadvantage of a persistently disagreeable taste and odor. It is locally irritant and should not be used in irritable conditions of the stomach. It may be prescribed dissolved in 10 parts of water or in aromatic elixir, and is best administered cold, or followed by a cold drink.

Average dose: 2 c.c. (30 minims).

Sulphonal and Trional.

SULPHONMETHANUM.—U. S.—Sulphonmethane, Sulphonal, Diethylsulphonedimethylmethane, and

SULPHONETHYLMETHANUM.—U. S.—Sulphonethylmethane, Trional, Disulphonemethylethylmethane, may be considered together as they differ chemically only in the addition of an ethyl group in the latter.

Average dose of either: 1 gm. (15 grains).

Therapeutic Action.

The therapeutic action of these two preparations is practically identical, and the closely related tetronal might also be included in this statement. Trional is somewhat more soluble than sulphonal. While these substances are safer than hydrated chloral they are not wholly free from danger, as fatal cases of poisoning have been reported and the sulphonal or trional habit, while of more recent origin, bids fair to equal if not to excel the chloral habit in the number of its victims. These agents are usually given in powder, and owing to their slow absorption, should be given about two hours before they are expected to act. To insure more speedy action they may be given in solution, for which purpose they are dissolved, or at least suspended, in a cup of hot milk.

Urethane.

ETHYLIS CARRAMAS.—U. S.—Ethyl Carbamate, Urethane. This is a new official preparation which is claimed to be much safer than chloral hydrate, to which it would be distinctly superior but for the fact that its action is not so certain and because tolerance is soon acquired. It is best given in water, in which it is very soluble. The average dose is 1 gm. (15 grains).

THE BROMID GROUP.

The bromid group is so well known that it requires little therapeutic consideration here, but it is of considerable historic, as well as of practical interest. Potassium bromid was introduced by Balard about 1826, who supposed it to have properties analogous to those of potassium iodid. It was not until some time after 1850 that the present, sedative, uses of the bromids were accidentally discovered. During the past four decades the several alkaline bromids have received considerable attention and several of them are now official in every pharmacopeia. In our own Pharmacopeia, in addition to monobromated camphor, hydrobromic acid and the hydrobromids of a number of alkaloids, we have ammonium, potassium, lithium, calcium, sodium and strontium bromids official.

The average dose of any one of these alkaline bromids is 1 gm. (15 grains).

The abuses that have arisen in connection with substances belonging to this group are largely due to the misrepresentations that are made in connection with the efficiency or the character of the preparations containing them.

Strontium salts, especially the bromid, were brought forward some years since, at exorbitant prices, as being infinitely

superior to the corresponding compounds of other elements. Experience has shown that, in the main, these claims were unfounded, though many, even now, claim that strontium bromid disturbs the stomach less than the corresponding sodium or potassium salt. Another claim that is frequently made by manufacturers of nostrums, like "Peacock's Bromides," is that they use "chemically pure" salts. Exactly what is meant by this claim is difficult to say, but the Pharmacopeia gives us a number of readily applied tests by which the salts themselves may be tested. The manufacturers of nostrums, on the other hand, not infrequently add the very substances that are considered contaminations.

(To be continued.)

New Instrument

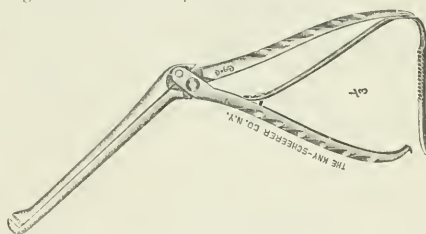
A NEW NEEDLE HOLDER.

JOHN EGERTON CANNADAY, M.D.
Surgeon in Charge Sheltering Arms Hospital.
PAINT CREEK, W. VA.

I have for some time felt the necessity for a needle holder which would give easy access to the deeper and less accessible cavities of the body, for example, the pelvis, the cardiac portion of the stomach in certain gall bladder and other cases, more especially in subjects having much adipose and muscular tissue. At the same time I desired a strong needle holder for purposes of general utility and one in which the closed hand on the handle would not in any way obscure the operator's field of vision.

The usual holder often fails to secure the needle firmly when tissues of any degree of resistance are encountered. More particularly does this obtain should the needle be a trifle dull. Several types of holder break the needle if too firmly closed.

Bearing the above in mind, I have had a pistol grip or angular needle holder made which consists of four parts, an upper jaw branch, a lower jaw branch, which is continuous with the upper handle; a separate lower handle, which is connected with upper jaw branch by a lock, and a spring with ratchet catch. The upper jaw slides on the lower one by means of a runner dovetailed into a slot in the lower jaw. The parts holding the needle are finely serrated.



The dimensions of the instrument are as follows: From back at angle of holder to jaw, $4\frac{3}{4}$ inches; from back to bottom of handle, $4\frac{3}{4}$ inches.

This I find to be a suitable length for work in most of the deep cavities of the body. Surgically speaking, a shorter holder would be better suited for work on exterior parts of the body.

The holder can easily be taken apart or assembled. By bringing the lower handle forward it can be unlocked, and the upper jaw can then be drawn out of the slot.

The advantages are: It renders areas comparatively difficult to reach more accessible; the hand is kept out of the line of vision; the needle is held firmly without breaking it; any kind of surgical needle is held perfectly, be it long, short, curved, straight, round, flattened, flat, large or small. While it is easily taken apart for cleaning and is readily assembled, this instrument will not fall apart if handled with the ratchet open, as do some others. The arrangement of fulcrum, weight and power is such that a firm grasp on the needle is obtained by comparatively slight muscular exertion on part of the hand.

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CHEMISTRY OF OSTEOMALACIA.

There is probably no class of diseases that is so little understood, and for which it is so difficult to obtain any conception of the etiology, as certain bone diseases. In the bone diseases in which the etiology is known, as in those of an infectious character, the processes going on are not at all understood. This is true in part because so little is known of the chemistry of bone metabolism. Of all the various chemical processes in the body, that which gives rise to bone formation appears to be the simplest because of the inorganic constituents involved whose chemistry is so thoroughly known. While the resulting products are known, however, as is true in many other tissue reactions, the manner in which these substances are brought there and the processes occurring before the final products appear are mostly in the realm of speculation. Bone absorption also is a process of the real nature of which we have little conception. We can not hope, therefore, to have a very clear understanding of diseases in which either the formation or absorption of bone is involved until much more is known about the process of normal calcification. Diseases of this kind should be studied carefully from the chemical point of view, for not only is it possible to obtain facts of importance in determining the nature of the disease, but it is also possible that such pathologic data may be of much importance in elucidating obscure points in normal physiologic processes.

It is with interest, therefore, that we note the recent contributions to the chemical study bearing on such problems as those referred to above. Wells recently reported before the Chicago Pathological Society the results of his studies on the chemistry of calcification. Using calcified material from tuberculosis and from other sources, he found a close correspondence between the proportion of inorganic constituents here and in normal bone. While not definitely demonstrating it, his results indicate that in these processes the fatty acids do not play an important part by combining with the calcium to form soaps. His experimental studies with animals showed the important fact that cartilage has the peculiar property of taking up the inorganic constituents much more rapidly than other tissues. The explanation of this probably depends on certain physical phenomena (absorption). Facts of this kind, of course, have a direct and important bearing on both normal calcifying processes and pathologic conditions.

A chemical study of the metabolism of the obscure bone disease, osteomalacia, has recently been reported by Goldthwait, Painter, Osgood and McCrudden.¹ This study was made in a case in which castration was performed for therapeutic purposes, and an opportunity was thus offered for a comparison of the metabolic products before and after the operation. From a chemical study of the food of the patient and the urine and feces it was found that there is a very marked increase in the excretion of calcium, chiefly in the urine, while there is a retention of sulphur and a small amount of magnesium. These results are interpreted as indicating that a decalcification of bony tissue occurs and that the calcium is replaced to a slight extent by magnesium, but chiefly by an organic substance rich in sulphur, similar to but not exactly like normal organic matrix. By castrating during this period of decalcification the process is reversed; that is, calcium is retained and there is a tendency for the sulphur metabolism to correct itself, though this is not very marked. These results agree with those of Neumann, who has also noticed the additional fact that in severe cases, when the disease has lasted a long time, the decalcification process comes to an end, and then castration is without avail in rectifying the metabolic processes. The histologic studies of osteomalacia made by others tend to support such conclusions drawn from chemical data. In sections of bone there is seen a zone of osteoid tissue on the margin of the trabeculae, in which may be seen the remains of the bone corpuscles. Along the osteoid tissue in close contact with it is a layer of cells, apparently belonging to the connective tissue type and suggestive of the idea that in some way these cells are concerned in the process of bone disintegration.

Just how the decalcification is brought about in osteomalacia is a problem about which there has been much theorizing and some experimenting, but it still remains unsolved. To lactic acid has been attributed the cause of the decalcifying process because it has been found in the urine. In this disease a decrease in the alkalinity of the blood has been observed, and this has been used to support the acid hypothesis. Lactic acid, however, occurs in the urine in other conditions with no softening of bones, and it does not occur constantly in the urine in this disease; the titration methods used to determine the alkalinity of the blood are not trustworthy and are of little importance, so that there is not much to substantiate the acid theory. Other acids, as carbonic and oxalic acids, have been suggested as playing some part in the process, but there is little or nothing to support such an idea.

The most rational view of the bone changes in osteomalacia appears to be that the normal function of either the marginal cells or bone corpuscles or both is so altered by certain substances, such as an abnormal ovarian secretion, and perhaps under certain circumstances other

substances also, that there results an abnormal absorption of the inorganic constituents. The deposition and absorption of substances depend on the chemical equilibrium of the cell, and only a slight shifting of this either way is necessary to give rise to extensive lesions in the form of osteoblastic or osteoclastic changes.

THE COMING OF AGE OF PHAGOCYTOSIS.

In 1881 two important articles on phagocytosis by Metchnikoff were published, so that it may be considered that this theory has just passed its majority. If at any time in its history a theory may be judged on its merits, it is when it has reached its maturity, and Professor Metchnikoff's recent book on "Immunity" supplies the details on which to base judgment.

Metchnikoff reviews the course of opinion from the first announcement of the theory, when Virchow, with his wonderful capacity for recognizing the truth, even when distinctly novel, was the only prominent pathologist to give it a welcome, to the present day, when practically every one concedes that phagocytosis is the most important element in the production of immunity, and when many consider it to be the origin of the most powerful immunizing forces within the body.

It is not strange that the theory of phagocytosis should have been looked at askance when it was first announced. In his presidential address before the Liverpool meeting of the British Association nearly ten years ago, Lord Lister said: "If ever there was a romantic chapter in pathology, it has surely been that of the story of phagocytosis." That the white cells of the body should array themselves in serried columns at points where bacteria were invading the tissues and at the call of some unknown force be ready to lay down their lives and be thrown off as dead pus cells for the protection of the body was an idea that could scarcely help but appear chimeric. Besides, the originator of this theory was not particularly known in the world of pathology. He was doing his work in Russia and it seemed as though the theory were the result of an almost oriental imagination rather than that of serious long-continued investigation.

Metchnikoff's theory, however, was founded on observation of the most acute and original kind. Consequently it was destined, in spite of many vicissitudes of opinion, not only to hold its own, but gradually to occupy the position of master spirit in the important field of immunity. All sorts of argument have been used against it. At first the writers of the best known text-books on pathology rejected it on *a priori* grounds; men like Baumgartner and Ziegler, and Weigert and Flüge at first refused to consider phagocytosis seriously, but now they recognize its supreme significance. The tracing of the gradual change of opinion of these distinguished

pathologists in the various editions of their text-books is one of the most interesting parts of Professor Metchnikoff's historical sketch of immunity.

It is curiously interesting to find just where in the realms of physiology and pathology the author of phagocytosis considers it to have a proper place. Phagocytosis is entirely in harmony with cellular pathology and co-ordinates our advance in knowledge in the nineteenth century much better than does any other theory of immunity. In the domain of physiology it ranges itself quite readily as one of the phases of the digestive processes within the body. Metchnikoff does not hesitate to say that as a consequence of this theory the study of immunity comes into the chapter on digestion regarded from the general point of view.

Though the subject is treated from a pathologic standpoint, it is only what might be expected from Metchnikoff that practical suggestions should occur here and there, some of which may prove to be of great value. For instance, in the closing chapter, which is a summary of all the work that has been done on immunity in the last twenty-five years, he suggests that phagocytosis may yet prove to be the surgeon's most efficient aid in the prevention of septic complications after operations.

He says: "We may even attempt to increase phagocytosis in surgical operations, especially in those on the peritoneal cavity, by there setting up an artificial aseptic inflammation, by means of various substances, innocuous in themselves, which attract a large number of leucocytes. In laboratory practice, this method is in daily use for the purpose of increasing the resistance of an animal against intraperitoneal injections of various micro-organisms, and Durham has suggested the extension of the same method to human medicine. Certain surgeons have already made attempts in this direction."

The author of the phagocytosis theory well deserves the congratulations of the medical profession on the coming of age of what has become so important a doctrine in the pathologic world.

PREPARATION OF ENDOTOXINS.

There is a small group of bacteria which, when grown in artificial media, produce substances that have marked toxic properties. In the given case this substance may be easily freed from the bacteria by filtration and is usually called the soluble toxin. Such bodies, of which diphtheria and tetanus toxins are typical examples, have received a large amount of study and are fairly well known. When introduced into the animal body there is produced a substance—the antitoxin—which counteracts their effect. The mechanism of the interaction of these bodies is fairly well understood and it is through the application of this knowledge that modern medicine has achieved some of its most successful results.

There is another and apparently larger group of organisms which, when grown on artificial media, do not

1. "Immunity in Infective Diseases," by Elle Metchnikoff. Translated from the French by Francis G. Binnie, University of Cambridge.

produce soluble toxic substances, but which, however, in the infected body give rise to symptoms that indicate the presence of violent toxins. Typhoid and cholera bacilli may be mentioned as typical examples of this class. If cholera bacilli, for instance, are grown for a few days in liquid media and the culture filtrated, the filtrate has practically no toxicity. The bodies of the bacilli, however, even though killed, are highly toxic as a result of their disintegration by the body fluids when introduced into animals. If an old culture which has stood in the incubator for several weeks is examined the toxicity is found to be considerably increased. Evidently, then, the toxic principle resides firmly fixed in the bacterial body; it has been called, therefore, an intracellular toxin or endotoxin. It is of a different character from the soluble toxin, being, as a rule, much less intense and not having the property of causing the production of real antitoxins in the body of the host; at least no antiendotoxins have so far been produced. Because of this fact the application of curative serum-therapy to diseases caused by this class of bacteria has been largely devoid of positive results.

Much work has been done with a view of obtaining these endotoxins from various bacteria in concentrated form for the purpose of producing antibodies that may be of service in the prophylaxis and treatment of the disease. McFadyean claimed that he obtained a toxic body by grinding and extracting typhoid bacilli rendered brittle by the temperature of liquid air, and for this substance he said an antibody could be obtained. It has not as yet been proved of practical value in treating the disease. Wright's method of vaccination in typhoid fever, which has been used so extensively and with apparent success in the British army, consists in the introduction into the body of typhoid bacilli killed by heating to 60 C. The endotoxins are liberated by the action of the body fluids, producing a marked reaction, and there subsequently results the formation of bactericidal substances which protect the individual from a later infection. The use of the products of autolysis of typhoid bacilli has also been suggested by Neisser, and the reaction is said to be less marked.

Besredka¹ has suggested the liberation of the endotoxin *in vitro* by treating the dried typhoid bacilli with normal horse serum for several hours and then separating the fluid from the bodies of the bacilli by the centrifuge. He states that the bodies of the bacilli are much less toxic than before treatment with the serum, while the fluid is distinctly toxic. The former he calls atoxic bacilli, and with them he is able to confer immunity in animals by using them as a vaccine and without any of the deleterious results which occur in using the bacilli before such treatment. The liquid endotoxin kills 300-gram guinea-pigs in peritoneal doses of 1.5 c.c., is precipitated by alcohol, and is destroyed by heating to 57 C. for fifteen hours. It is also neutralized by an

anti-endotoxic serum obtained by injecting typhoid bacilli—living or dead—into the veins of the horse. Besredka in the same manner has obtained the endotoxin for the pest bacillus, and found it likewise to be a fairly thermostable body which is neutralized by an antipest serum.

Slatineano,² employing the same technic as Besredka, obtained an endotoxin from Pfeiffer's bacillus (*B. influenza*) in such concentration that .5 c.c. injected into the brain of a guinea-pig killed it in sixteen hours with marked lowering of the temperature. Small quantities injected into the peritoneum also produced death with characteristic symptoms.

We give these results as indicative of what is being accomplished by experimental investigators of the problems presented by endotoxins. Whether actual anti-endotoxins have been discovered remains to be seen. This method may provide a means, however, of obtaining certain bodies in a more suitable form for work, and perhaps some interesting results may develop. The use of the so-called atoxic bacilli for immunization recalls Behring's announcement of the therapeutic effect of tubercle bacilli freed from certain toxic and injurious substances.

THE HOUSE FLY.

Two articles have recently appeared which may seem to indicate how the extremes of the pendulum too often characterize scientific presentations. The subject in this particular instance is the part played by the house fly in the causation of tuberculosis. One writer³ attributed to this source so large a proportion of cases of tuberculosis that on sober reflection one must surely regard his views as exaggerated. The other writer⁴ rather vehemently declared that the house fly is almost never an etiologic factor in this disease.

The judicious have here especial reason to grieve, for the propaganda against tuberculosis now being carried on is one which will certainly redound enormously to the well-being and the happiness of mankind if it be based on temperate, just and scientific deductions from accurately observed facts. We emphasize this "if"; for otherwise unreasonable and far-fetched statements, such as must seem absurd to the laity, will certainly prevent the goodly measure of fruition which the present campaign against tuberculosis should rightfully enjoy. We are in the habit of scolding the laity for its phthisiophobia—and our position here is somewhat grotesque; for this fear of consumption is in great measure developed in the lay mind by means of the intemperate and ill-balanced statements of medical men. Exaggeration may carry its point at the bar or in the pulpit; but moderation of statement is an essential—an absolute essential

2. Comp. rend. Soc. de Biol., 1905, vol. xlix, p. 339.

3. J. O. Cobb: "Is the Common House Fly a Factor in the Spread of Tuberculosis?" *Am. Med.*, March 25, 1905.

4. T. J. Mays: "The Fly and Tuberculosis," *N. Y. Med. Jour.*, Aug. 26, 1905.

—of the scientific mind. Undoubtedly, the house fly has been the carrier of tuberculous infection. No one can doubt this who has seen the nutrient film exhibited in the recent Tuberculosis Exhibition in New York City, on which flies that had previously been deposited on tuberculous sputum had walked; colonies of tubercle bacilli developed along the tracks which these flies made on the film. On the other hand, tuberculosis is of course disseminated in other ways than by flies.

The excessive infant mortality and the wide prevalence of typhoid fever would seem to be due in some measure to the *Musca domestica*. Milk, states Dr. J. T. C. Nash,² is one of the favorite foods of flies. Especially in the homes of the poor is this nutritious fluid open to their depredations. Thus is the milk contaminated with the excreta of flies and with the noxious matter clinging to their feet, and here the germs deposited must find a favorable culture medium. Nash has made a series of observations regarding the coincidence of infantile diarrhea with the number of flies. He concludes that milk is liable to pollution even more after delivery to the consumer than before it reaches him. Happily, much attention is now paid to flies in dairies. A measure emphasized by Dr. L. O. Howard is based on the fact that most house flies breed in horse dung; and the stable is generally an accompaniment of the dairy. Farmers and dairymen, therefore, should keep flies from manure pits, a proceeding easy of performance. Thus not only would infant mortality be reduced, but the number of typhoid cases would be decreased. Here, perhaps, may be an explanation of why city dwellers so often return from their vacation smitten with typhoid fever. May not the house fly have been responsible for many cases that have been attributed to "tainted" wells?

In our Spanish war it was abundantly demonstrated that the most careful system of water supply is unsatisfactory if the sewage system is bad and if flies are permitted to pollute the food and drink. One must observe that all the other conditions which produce typhoid—had sanitation, diet, lowered vitality and the like—exist all the time; while the multiplication of typhoid cases coincides with fly time. With regard to cholera, Chantemesse has demonstrated the rôle played by flies in the dissemination of the specific germ. Fortunately, however, as he has shown, the cholera bacillus in flies loses its virulence after forty-eight hours.

DEGENERATED SYMPATHY.

There is no limit to the extremes to which the professed well-wishers of the race will go. A little while ago we noticed the recommendation of a reforming woman to kill off the incurables, and now comes another one who advises murder of the children of the slums lest they should grow up to future poverty and misery. Perhaps, however, the most notable moral aberration is that of the distinguished ex-Harvard professor, Charles E. Norton, who comes out boldly for making

away with the so-called hopelessly insane, diseased or injured. Professor Norton is a sort of an esthete, and morals and esthetics do not always coincide, in spite of theories. In fact, we have learned to be somewhat suspicious of the moral convictions of those who profess to cultivate the esthetic sense to any extreme, and Professor Norton is apparently not an exception. While his published letter may give some impetus and encouragement to Miss Hall and her followers, it will not command much consideration from sensible people, and certainly not from the mass of the medical profession. He utterly misjudges the motives of physicians in asserting that they are deterred to any extent from following the course he advocates by the mere desire to avoid responsibility or to show their skill in overcoming difficulties. The ethics of the profession are apparently little understood by him and his kind.

CONTRACT PRACTICE.

Medical societies at various points throughout the country are condemning contract practice, more especially that form known as lodge practice, by which certain organizations exploit the medical profession. While the evil in this country is not so great as in Great Britain, it is sufficiently serious to enlist the attention of the profession. A recent instance shows not only the spirit of these organizations, but also affords an example of a thoroughly temperate yet absolutely unanswerable statement of the medical side of the question. A few weeks ago the Shasta County (California) Medical Society unanimously adopted resolutions condemning lodge practice as it there existed and pledging its members to have no professional intercourse with lodge-contract physicians—resolutions which were thoroughly justified by their experience. This called out a series of resolutions from a local benefit society denouncing the medical society's action and claiming fifty years' precedent and all sorts of moral claims for its conduct of the lodge contract medical service, and denying the right of the medical society to have anything to say about it. In reply the medical society shows that its resolutions were not aimed at the existence of fraternal organizations, or even at contract practice generally, provided that reasonable compensation was given. It pointed out that while corporations paid a certain rate, which might not, perhaps, be considered too low, the lodge practice rates were only 10 per cent. of those of the corporations and that, assuming the \$1 a month for each employé provided for by the corporations as reasonable, the fraternal order demanded that the physician should take 90 per cent. of that out of his own pocket for their benefit and serve its members and their families at an average rate of 10 cents a month for each individual. It was only when the lodge placed a valuation on its services comparable to those of the boot-black and peanut vender that the society made its protest. Certainly, if it should be condemned it should only be for its forbearance. It is a curious fact that the majority of these fraternities are largely made up of working men, who are in their organizations wide awake enough to secure every pecuniary advantage in their contracts with those to whom they render service, but are even more zealous, apparently, to take advantage of

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those whose services they demand. It is certainly time, when conditions are such as existed in this California instance, that the medical profession should take a stand in its own behalf, and it is only by organized effort that this can be successfully done. The case is not a unique one, even in this country, and our British confrères have had many analogous experiences. While human nature is as it is, we must expect injustice if we choose passively to permit it, and that from those who make the highest professions of general charity and benevolence. A professed love for all mankind is, as Thackeray says, a very vague and indefinite sort of virtue, and when the said love and charity are specially found in fellow-members of a lodge they seem to be still more diluted for outsiders. There is no profession that exercises the virtue of charity more than the medical profession, and we would not have it otherwise, but that does not imply the necessity of our unresistingly submitting to gross injustice, such as is inevitably the consequence when lodge practice is unrestrained.

PROFIT IN NEW YORK'S GARBAGE.

If a sanitary measure is cheaper in its execution than an insanitary method, the combination is a pretty strong one, favoring the hygienic method. For years the street-cleaning department of New York City was accustomed to dump garbage in the sea, and as a result the floating portions formed an unsightly and unsavory fringe along the shores of New York City and suburbs, while the heavier parts formed dangerous shoals. A recent report¹ of the present method of disposition shows a profit instead of an expenditure. The heavier portions of the refuse have been used to fill in eighty-four acres of land along the shore, each acre being estimated to be worth \$10,000 (and eighty other acres of less value). Other refuse is sold for salvage and the money received from the salvage contractor runs a lighting plant to illuminate a number of city buildings and public schools. Another portion of the refuse is used as fuel in this lighting plant. Thus was achieved an immense improvement, and the profitable result—representing an income of \$52,000 yearly instead of an expense—is a good example for other municipalities.

THE NOSTRUM EVIL.—*The Kentucky Medical Journal* hopes "that Kentucky doctors will give this . . . whole matter earnest thought, and will arrive at definite conclusions as to their duty in the matter of nostrums. They should give their own journal an active support in this fight which it is waging against this evil, with the assurance that the end is not yet, and that many bitter fights will have to be won before we will be able to free ourselves from these crafty ones, who snoop and flatter us, and behind our backs smile at the guilelessness which permits us to be docilely exploited to their great gain and good. More than this, look over the pile of journals on your table, and when you find an improper thing advertised, write to the journal protesting, and asserting your disapproval; or take other and still more drastic means of assuring editors and publishers that you are awake and alive to their misdemeanors."

Medical News

DISTRICT OF COLUMBIA.

Banquet to Dr. Fletcher.—Dr. Robert Fletcher, associate librarian of the Army Medical Library, was entertained at a banquet by the local profession January 11, and presented with a handsome loving-cup as a testimony of his valuable services in this library during the past 30 years. Dr. William W. Keen, Philadelphia, made the presentation speech.

Health of the District.—The report of the health officer for the week ended January 6 shows the total number of deaths to have been 135—white 71, colored 64; births, 118—white 73, colored 45. The following cases of contagious diseases were under treatment at the close of the week: Diphtheria, 30; scarlet fever, 36; typhoid fever, 62, and smallpox, 21.

Therapeutic Society Meeting.—At the annual meeting of the Therapeutic Society of the District of Columbia, January 13, Dr. D. Olin Leech read his annual address as retiring president. The election of officers resulted as follows: President, Dr. Noble P. Barnes; vice-presidents, Drs. Harry A. Robbins and Edgar W. Watkins; recording and corresponding secretary, Dr. Arthur J. Hall; treasurer, Dr. John S. McLain, and censors, Drs. Frank Leech, Charles M. Beall and John W. Chappell.

ILLINOIS.

Hospital Notes.—The addition to the Marietta Phelps Hospital, Macomb, is almost completed. Dr. Samuel C. Stremmel is surgeon-in-chief.—Minerva Hospital, erected by Dr. John A. Colbourne at Pontiac, has been opened.

State Board of Charities.—The following have been appointed members of the State Board of Charities: Dr. Frank Billings, Chicago, president; Rabbi Emil G. Hirsch, Chicago; Miss Julia Lathrop, Chicago, and Dr. John T. McNally, Carbondale.

Epidemic Diseases.—Stonington is under quarantine on account of five cases of diphtheria and the public school has been closed.—Smallpox cases have been reported to the State Board of Health from Bureau, Greene, Jersey, Kane, La Salle, Logan, McHenry, McLean, Macon and Sangamon counties.

Coroners' Inquests.—During the year ended December 1 the coroner of Cook County investigated 3,482 cases, including 25 cases in which the cause of death was given in the certificate. The nature of the fatalities follows: Natural causes, 1,185; suicides, 453; railway accidents, 355; falls, 221; homicides, 187; burns and scalds, 163; street-car accidents, 137, and other causes, 781.

Civil Service Examinations.—The State Civil Service Commission will hold an examination this month for attendants in the seven hospitals for the insane. This examination will be open to women between the ages of 18 and 45 years, and to men between 22 and 40 years. The subjects on which applicants will be examined and the weights or basis of marking will be: Common school requirements, 3; physical examination, 4, and oral examination as to qualifications, 3. The examining board consists of Dr. Harry G. Hardt, assistant physician at the Illinois Northern Hospital for the Insane, Elgin; Dr. Herbert A. Potts, assistant physician, Illinois Central Hospital for the Insane, Jacksonville, and Miss Nellie Fitzgerald, head nurse, Illinois Eastern Hospital for the Insane, Kankakee.

Personal.—Dr. and Mrs. Benjamin E. Jones, Rock Island, have gone to California for the winter.—Dr. Robert C. J. Meyer, has been appointed commissioner of health of Moline.—Dr. Franklin E. Wallace has been appointed health officer of Monmouth during the absence of Dr. William H. Wells.—Dr. Harry G. Hardt has assumed his duties as assistant physician at the Illinois Northern Hospital for the Insane, Elgin.

—Dr. Clifford U. Collins, Peoria, was operated on for appendicitis December 23.—Dr. James Henry, La Harpe, has retired from practice.—Dr. Ernest S. Reedy, Bloomington, has located in Blaine, Wash.—Dr. J. Whitefield Smith has been elected president; Dr. John L. Volton, vice-president; Dr. Horace W. Elder, secretary-treasurer, and Dr. Edson Hart, staff representative, of the staff of Brokaw Hospital, Bloomington.—Dr. Andrew J. McIntosh, Allendale, is dangerously ill with cerebral hemorrhage.—Dr. George A. Sihler, Litchfield, was operated on for appendicitis, December 18.

Chicago.

Smallpox Reappears.—After an interval of several months, a case of smallpox was discovered on the West Side, January 11.

Memorial Boulder Placed.—A mammoth boulder has been placed in Grant Park, by the Chicago Medical Society, in memory of Dr. Samuel Guthrie, the discoverer of the anesthetic properties of chloroform.

Personal.—Dr. Otto W. Lewke, coroner's physician, is seriously ill with septicemia from a postmortem wound.—Dr. Carl Beck has been chosen honorary president of the Society of Former German University Students, at its annual meeting held in New York City, December 21.

Not Illegal to Sell Eucaim.—In the case of Louis Re, arrested on the charge of selling eucaim, the judge held that eucaim is not mentioned in the state poison law, and that the city ordinance forbidding its sale is invalid because the state alone has power to make such prohibition. The defendant was accordingly acquitted.

Deaths of the Week.—The deaths for the week ended January 13 numbered 582, or 20 more than for the previous week, and 40 more than for the corresponding week of 1905. The respective annual death rates per 1,000 were 14.80, 14.31 and 14.19. Of the principal death causes, pneumonia heads the list with 114, followed by consumption with 66; violence, including suicide, 52; Bright's disease, 44, and heart diseases, 40.

Chicago's Health.—The summary of the Health Department for 1905 shows that the death rate for the year was 13.67 per 1,000. Compared with the death rate of other cities of more than half a million inhabitants, the report states that the death rate of Chicago is 9.4 per cent. lower than that of St. Louis; 20.7 per cent. lower than that of Philadelphia; 21 per cent. lower than that of Boston; 25 per cent. lower than that of New York, and 26.9 per cent. lower than that of Baltimore. The death rate of Chicago is also shown to have progressively decreased by decades since 1845, as follows: 40.52, 23.86, 24.11, 20.41, 20.06 and 14.98. During the year 546 cases of smallpox were treated at the Isolation Hospital, with 61 deaths. The typhoid fever death rate was the lowest on record and more than 90 per cent. below that of 1891. The mortality from diphtheria decreased from 13.7 per 10,000 in the decade ending 1894, and 4.9 in the decade ending 1904, to 2.1 per 10,000 in 1905, a reduction of 84.7 per cent. from the rate of the decade prior to the introduction of antitoxin. Pneumonia caused 552 fewer deaths in 1905 than in 1904, a decrease of 15.9 per cent. as compared with the previous year. Only three chronic diseases showed increase: Bright's disease increased 5.9 per cent.; cancer, 2.93 per cent., and heart diseases showed an increase of only 50 more deaths than in 1904. Pneumonia led in the death causes with 3,582, followed by consumption, with 3,203; acute intestinal diseases, with 2,570; heart diseases, with 2,110; Bright's disease, with 2,017; violence, with 1,638; cancer, with 1,191, and nervous diseases, with 1,093. Diphtheria caused 426 deaths; measles, 231; whooping cough, 350; scarlet fever, 79; smallpox, 61; typhoid fever, 320, and yellow fever, 1 death.

INDIANA.

Goes Free.—Dr. Sumner A. Edmands, Goshen, charged with having performed a criminal operation on Mrs. Anna Darnell, was found not guilty, January 10.

Fined for Illegal Practice.—Dr. Stephen A. Spees, Terre Haute, charged with practicing medicine without a license, was found guilty, January 5, and fined \$25 and costs.

New Hospital.—Hon. D. D. Dykeman has agreed to donate to Logansport a hospital for the use of its citizens, in memory of his wife, and to be known as the Mary Dykeman Hospital. He will build a hospital to cost \$75,000 and endow it with \$100,000.

Medical Course at State University.—The trustees of Indiana University, Bloomington, have decided to make its pre-medical course, a full medical course for four years, and to confer degrees. The reorganized school of medicine will begin its work next fall.

Hospital Dedicated.—The reconstructed and enlarged St. Elizabeth's Hospital, Lafayette, was dedicated with imposing ceremonies by Bishop Alrding, December 31. The addition was erected at a cost of more than \$50,000, and doubles the capacity of the institution.

Fountain County Society Meeting.—The January meeting of this society was held at Covington. The following officers were elected: President, Dr. Francis A. Shoaf, Veedsburg; vice-president, Dr. Albert C. Holley, Attica; secretary, Dr. George Rowland, Covington, and censors, Drs. Marshall Petet, Veedsburg, Charles J. Finney, Attica, and Walter H. Ross, Veedsburg.

Personal.—Dr. John H. Ross, Kokomo, has gone to Winter Haven, Fla.—Dr. Hugh A. Cowing, Muncie, has been reappointed secretary of the Delaware County Board of Health.—Dr. William H. Daniel, Corydon, has been appointed secretary of the Harrison County Board of Health.—Dr. Edwin O. Harrold, Marion, has been appointed local surgeon for the Big Four and Pennsylvania systems.—Dr. Stanley W. Edwins, Elwood, is critically ill.—Dr. Morton J. Compton, Evansville, has been appointed secretary of the Vanderburg County Board of Health, vice Dr. Willis S. Pritchett.—Dr. James D. Hillis, Lafayette, has been appointed secretary of Tippecanoe County Board of Health.—Dr. Daniel B. Cain has been appointed police surgeon of Evansville.—Dr. William M. Wright, Indianapolis, in a street-car accident, January 3, suffered severe lacerations of the face.—Dr. Charles E. Barnett, Evansville, returned from Vienna, January 15.—Dr. L. L. Williams has been appointed surgeon at Brazil for the C. & E. I. R. R.—Dr. Hezekiah C. Doster, Poneto, suffered a severe cerebral hemorrhage, January 3.

MARYLAND.

First-Aid Instruction.—The Baltimore & Ohio school for instruction in first aid to the injured was opened at Cumberland January 8, under the charge of Drs. John A. Doerner and L. S. Stitley of the relief department, assisted by local surgeons. Trainmen, foremen and minor officials are required to attend.

To Regulate Sale of Narcotics.—The attorney-general has drafted a bill to regulate the sale of narcotic drugs. It applies to cocaine, eucaim and morphin, but not to opium. The burden of proof is to be on the accused to show that he did not know or could not have ascertained that the article furnished contained prohibited drugs.

Appointments.—Dr. Armfield F. Van Bibber, Belair, has been appointed physician to the Harford County Almshouse, and the following have been appointed vaccine physicians for that county: First district, Dr. Charles E. Roth, Edgewood; second district, Dr. Jay H. Stier, Perryman; third district, Dr. E. Hall Richardson, Belair; fifth district, Dr. Walter B. Kirk, Darlington, and sixth district, Dr. W. L. Hopkins. Dr. Frank P. Smithson, Forest Hill, has been appointed subregistrars of the third district.

State Hospital Reports.—The tenth annual report of the Springfield State Hospital for the Insane for the year ended Oct. 1, 1905, shows that 166 patients were admitted and 129 were discharged, paroled and died, leaving 644 remaining in the institution. The annual death rate was 7.57 per 1,000. Two more hospital buildings, a new dining-room, kitchen and isolation building are needed.—The one hundred and eighth annual report of Maryland Hospital for the Insane, Spring Grove, for the year ended Oct. 31, 1905, shows that only 61 patients were admitted, the smallest number in the history of the institution and due to its crowded condition. There were 620 patients under treatment during the year, of whom 30 were discharged, 18 as cured, 7 improved and 5 unimproved, and 31 died. The number now in the hospital is 559. The net cost of maintaining the hospital was \$113,040, and the cost per capita \$201.50.

Baltimore.

Beriberi.—There is a case of beriberi in a Norwegian sailor at the City Hospital. The man came on a ship from Brazil. A similar case occurred at the City Hospital last year.

Portrait of Dr. Hurd.—The past and present house officials of the Johns Hopkins Hospital are to have a lifesize portrait painted of Dr. Henry M. Hurd, superintendent. It will be hung in the administration building.

Personal.—Dr. J. Hall Pleasants is ill with typhoid fever.—At the Johns Hopkins Hospital Dr. C. P. Emerson has been appointed resident physician, vice Dr. Rufus I. Cole, resigned. Dr. Cole has been appointed associate in medicine and Dr. Josiah M. Slemmons, associate in obstetrics. Dr. Roger Morris has been appointed assistant resident physician and Dr. J. A. Caldwell has resigned as assistant gynecologist.

MASSACHUSETTS.

Want Bowditch Back.—An earnest effort is being made to induce the governor and council to revise the action of the trustees of the Rutland Sanitarium in displacing Dr. Vincent Y. Bowditch as visiting physician.

Board of Insanity Report.—The Massachusetts State Board of Insanity states that it has under its care 10,153 insane persons, 4,832 men and 5,321 women, or one to every 296 of the general population. It asks that accommodations be pro-

vided for 200 more. The extreme overcrowding reported last year has been relieved and will continue so if the state will furnish this additional room each year.

Brigham Hospital Announcement.—The directors of the Brigham Hospital for Incurables announces that the accumulated income now amounts to \$277,884.47 and that it is, therefore, intended to proceed with the plans and erection of a hospital large enough to care for 200 patients. This will not be primarily for tuberculous patients, but chronic diseases like cancer, paralysis, etc., will probably constitute the larger number. The location is to be on the top of Parker Hill, Roxbury.

Vital Statistics.—The vital statistics for Massachusetts for 1904 as reported to the legislature, show that with a population of 2,805,346 there were 75,014 births, 25,993 marriages and 48,482 deaths. The birth rate was the lowest since 1879, while the number of marriages was greater than any year since 1850, except 1903. The death rate was 15.76 per 1,000, the lowest since 1851. Deaths among infants under 1 year old were 9,922, 740 less than the average of the past 10 years. There was a marked decrease in the deaths from infectious diseases, specially pertussis, scarlet fever, measles and diphtheria.

Personal.—Dr. Walter Remsen Brinckerhoff, assistant pathologist at Harvard Medical School, who has already made a name for himself as assistant to Dr. William Councilman in the search for the germ of variola, having carried out supplementary work in the government laboratories at Manila and subsequently studied the plague in the Transcaucasus, has been appointed pathologist in charge of the new hospital and laboratory for the study of leprosy on the island of Molokai, Hawaii.—Dr. Fred B. Lund, Boston, has been appointed one of the board of trustees of the Medfield Insane Hospital.

NEW YORK.

Violations of Pure-Food Law.—State Commissioner Weiting during the last year referred to Attorney-General Mayer 507 cases of violations of the agricultural law, including the following: Impure milk, 230; impure butter, 29; impure food, 126. There are 368 other cases under investigation.

Infected Milk.—As the result of information from Health Officer I. Adelbert Hix of Binghamton that milk had been shipped to New York City from a dairy near Binghamton which was infected with scarlet fever, the State Department of Health will direct the Board of Health of New York City to prevent the receipt of this milk. Dr. Hix threatens to prefer charges against the health officer in the town where the dairy is located, alleging that he failed to enforce quarantine on the infected premises.

New York City.

Yerkes Hospital Will be Built.—The hospital in the Bronx provided for by the will of the late Charles T. Yerkes will be begun as soon as the estate is settled, instead of waiting until the death of Mrs. Yerkes, as provided by the will.

Vital Statistics of Queens.—There were in this borough for the year 1905, 4,355 births, 3,191 deaths and 1,092 marriages. Of the various causes of death consumption led with 310. There were 611 coroner's cases, 413 accidentals or homicides, 56 were suicides, and 10 from sunstroke.

Health Board Wants More Money.—At the first meeting of the new board of estimate, which was held January 12, the Department of Health asked for \$135,000. One of the items called for \$15,000 for drugs and antitoxin. The matter was referred to Mr. Metz, who is a manufacturer of antitoxin.

Contagious Diseases.—There was reported to the sanitary bureau for the week ended December 30, 798 cases of measles, with 12 deaths; 358 cases of diphtheria, with 38 deaths; 365 cases of tuberculosis, with 163 deaths; 183 cases of scarlet fever, with 6 deaths; 36 cases of cerebrospinal meningitis, with 16 deaths; 45 cases of typhoid fever, with 7 deaths, and 117 cases of variella.

Large Hospital Collections.—At the annual meeting of the Hospital Saturday and Sunday Association, January 8, it was reported that the Woman's Auxiliary would present a fund larger than that of last year, which was \$12,000. The collection in general promises to be the largest in the history of the association. It is thought that it will exceed \$100,000, as against \$92,000 of last year.

No Expert Fees for City Physicians.—The assistant district attorney, when recently urged to have a prisoner examined as to sanity, said that whenever such a request was made the doctors posed as experts and put in a bill. Judge Cowing,

who had ordered the examination, said that the city physicians were on salary and that such services would have to be rendered without pay in the future.

Pasteurize All Milk.—The necessity for pasteurizing the entire milk supply of large cities is being kept constantly before the public by the daily papers. It is urged that this work should become a function of the municipality. Nathan Strauss, who has done so much of this work for New York, also urges the importance of the work, and says that while the entire work would transcend the bounds of private effort, in the budget of the government it would be but a small item, which could be met easily by the taxpaying population.

Beth Israel Hospital.—At the annual meeting of the association governing this hospital four new directors were elected. The report showed that during 1905 the hospital received \$84,133.31 and spent \$84,375. Since October 1 the hospital has received \$20,000 in subscriptions, Nathan Hermann subscribing \$5,000 on condition that \$10,000 more be obtained. The directors raised \$15,000, the largest gift coming from the estate of Solomon Bachrach, \$5,000. During the year the hospital treated in all 45,573 persons.

Object to Sanitarium.—A committee of business men of Staten Island called on Charities Commissioner Hebbard at Bellevue January 8 to protest against the proposed tuberculosis sanitarium at Port Richmond. The committee held that the climate of Staten Island was unsuited for this purpose and that the coming of 800 consumptives would threaten the health of the community, and depreciate the value of property in the vicinity. The complaint will be considered and a decision made known within a reasonable length of time.

Health Department Methods Criticized.—A case came to trial recently in which the defendant had been indicted under sanitary laws for keeping his premises in a filthy condition. The Board of Health had no record that the defendant had been notified and consequently Recorder Goff directed that the jury acquit him, and scored the Health Department for allowing its subordinates to initiate proceedings and to issue orders themselves without the slightest regard to the forms of law or without the knowledge of the heads of the department. Investigation showed that the Health Department had kept no records of such proceedings during the past eight years. It was recommended that some system be introduced that would be in conformity with the plain requirements of the law.

Cartwright Lectures.—These lectures, given under the auspices of the Alumni Association of the College of Physicians and Surgeons, will be given this year in the New York Academy of Medicine, January 25 and 29, and February 2. Baron K. Takaki, surgeon general (reserve) of the Japanese Navy, will deliver them, and he has selected as a title "Military and Naval Sanitation Experiences of the Late Japanese-Russian War." He studied medicine in England and was graduated from St. Thomas Hospital with honors. During his time of service in Japan he has busied himself in thoroughly reorganizing the sanitary and medical systems of the new Japanese navy. Up to the recent Japanese-Chinese war he was surgeon general, Japanese navy, and to his energy and genius are to be attributed, in large part, the wonderful results attained by the Japanese navy.

NORTH CAROLINA.

New Sanatorium.—The new sanatorium "Cragmont," for tuberculosis at Black Mountain, 11 miles above Asheville, is nearing completion and will be open about February 1.

Banquets.—The Haywood County Medical Society, with guests from Jackson and Swain counties, were the guests at a complimentary dinner in honor of the society at Waynesville, by Dr. J. Howell Way, January 8.—The Iredell-Alexander County Medical Society held its annual dinner early in January, at Statesville, with a goodly attendance.—The members of the Wilson County Medical Society were the guests of Drs. Charles Moore, Albert Anderson and E. Thomas Dickenson at a complimentary banquet January 4 at Wilson. A number of visiting physicians from adjoining counties were present.

Stand for Five-Dollar Fee.—The Caldwell County Medical Society January 1 adopted the resolutions recommended for adoption by the county societies at the 1905 session of the State Medical Society at Greensboro, fixing the insurance examination fee at \$5 for all regular old-line insurance companies. A large number of other counties which had previously not taken action on this matter, have since done so, and many physicians think the indications are that, unless insurance companies wish to pay \$5 for every insurance examina-

tion regardless of the amount of the policy asked for, they will not be able to secure examiners in the ranks of the regular medical profession.

PENNSYLVANIA.

Philadelphia.

Beriberi Here.—The British steamship *Ardoza*, from Chile, was quarantined at Marcus Hook, January 9, on account of a case of beriberi and three other suspected cases, which were placed in the detention hospital at the quarantine station. The victims were Chinese sailors.

Blockley Advisory Board.—Dr. W. M. Late Coplin, director of health and charities, announced, January 11, the appointment of an advisory staff for Blockley. The staff includes Drs. Alfred Stengel, Charles H. Frazier, Lawrence F. Flick, William L. Rodman, S. Solis-Cohen and Lewis W. Steinbach.

Fighting Nostrums.—A vigorous step in the crusade against nostrums was inaugurated at the meeting of the County Medical Society, January 10. Resolutions were adopted by the society against physicians who use medicines of secret composition, against all journals which print certain nostrum advertisements, and against the United States patent office and postoffice department. A full report is given on page 218.

Personal.—Dr. and Mrs. Henry M. Fisher sailed for Europe January 8.—Dr. Edward E. Montgomery was elected president, and Dr. Charles W. LeFever, secretary, of the Ohio Society, at Philadelphia, January 11.—Dr. Wilford W. Hawke, chief resident physician of the insane department of the Philadelphia Hospital, has resigned.—Dr. W. Reynolds Wilson gave a dinner in honor of Dr. Robert T. Morris, New York City, January 18. In the evening Dr. Morris addressed the gynecologic section of the College of Physicians.

Health Report.—The total number of deaths reported for the week aggregated 582, as compared with 536 reported last week, and 500 reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 23; measles, 17; whooping-cough, 4; diphtheria, 16; meningitis, 4; cancer, 28; apoplexy, 24; heart disease, 64; acute respiratory diseases, 101; enteritis, 16; appendicitis, 3; Bright's disease, 41; premature birth, 17; suicide, 1; accidents, 15, and marasmus, 4. There were 416 cases of contagious disease reported, with 40 deaths, as compared with 341 cases and 36 deaths reported last week. There were 202 new cases of typhoid fever with 23 deaths, the largest number of typhoid fever cases reported in any one week since the outbreak last spring. The disease prevails generally throughout the city, and only three wards are wholly free from it. Measles prevails throughout the city to an alarming extent. There were 431 new cases reported as compared with 353 reported last week, and 17 deaths resulted from this so-called simple affection.

The Death Rate in 1905.—According to the report prepared by Dr. Alexander C. Abbott, chief of the bureau of health, the health of the city during 1905 was exceptionally good, there being 1,200 deaths less than during the previous year. The proportion of deaths to the population was 17.25 per 1,000 for last year and 18.44 for 1904. The total number of deaths from all causes was 21,807. The principal causes of death, compared with the previous year, were as follows:

| | 1905. | 1904. |
|-----------------------------|-------|-------|
| Pneumonia | 2,591 | 3,361 |
| Tuberculosis, lungs | 2,829 | 3,107 |
| Other forms of tuberculosis | 402 | 503 |
| Typhoid fever | 689 | 744 |
| Diphtheria | 361 | 542 |
| Scarlet fever | 60 | 201 |

The authorities believe that the open winter was responsible for the low mortality from lung trouble during the latter part of 1905, and that the decrease in the number of cases of all transmissible diseases was due to the better methods of the bureau of health, covering the fumigation and disinfecting of all premises where cases of such disease occurred.

VIRGINIA.

Personal.—Dr. S. R. Jordan of Virgiliana, when returning from a call, was thrown from his buggy and painfully injured. He was found lying in the roadside two miles from home, with his elbow dislocated and head badly lacerated.

GENERAL.

Pathologist for Lepet Settlement in Hawaii.—Dr. W. R. Brinkerhoff of the Harvard Medical School, has been appointed pathologist in charge of the new hospital and laboratory at the government experiment station in the leper settlement on the Island of Molokai.

New Journals.—The *Bulletin of the Pharmaceutical Association* is a new publication, and the first number makes a very creditable appearance. We wish it success, and trust that this organization will take its stand on present-day subjects, realizing its mission. If this body does not stand for the best in pharmacy, then there is none that does.—The *Alkaloidal Clinic* has changed its name to the *American Journal of Clinical Medicine*, and is somewhat enlarged and has additional members on its editorial staff. As we announced at the time of the fire which destroyed its plant, it proposes to cover a larger field than heretofore. We wish it success.—The *New England Alkaloidist* is a new journal, hailing from Milford, Mass.

Government Exposes Nostrums.—The annual report of the chief of the bureau of chemistry of the Department of Agriculture includes an account of the work of the bureau in aiding the Postoffice Department in investigating various nostrums. Many have been found to be fraudulent and many injurious by reason of the presence of cocaine, morphia, chloral, or a large percentage of alcohol. THE JOURNAL has published the details of some of these investigations, and they well show the character of the work. Inspection of exported and imported foods has been continued, as well as physiologic experiments with food preservatives. Seven thousand three hundred and thirty-eight samples were analyzed, including 3,750 samples of imported foods, 2,579 samples for the hygienic table, and 1,009 miscellaneous samples.

Prevention of Importation of Smallpox from Canada.—Acting Assistant Surgeon Young reports the precautions taken on the Canadian border to prevent the importation of smallpox during the present epidemic. Trains were inspected, susceptible individuals vaccinated, cars disinfected and all other necessary steps taken to prevent the entrance of the disease. Admission was refused to some persons because of suspected contact with smallpox at Tracy or Fredericton Junction, on line of Canadian Pacific Railroad between St. John and Vanecboro, or because of positive knowledge that proper disinfection had not been done in the houses from which the individuals came and in which smallpox had occurred. The present epidemic is especially dangerous because of its mild character in the early stages, many persons concealing the disease so that in a large percentage of cases no disinfection had been done, and in many cases the health officials have no knowledge of its existence. Dr. Young states that three times within two weeks persons with face and hands partially covered with scabs have appeared at Fredericton Junction from points in surrounding country, and of these only one had broken quarantine.

CANADA.

Statistics of St. John, N. B., for 1905.—During the year 1905 968 births were recorded in the city of St. John, N. B., and 472 marriages. These returns show an increase of 8 births and 42 marriages over 1904.

Montreal Weekly Vital Statistics.—There were 68 deaths in Montreal during the first week of 1906, the lowest mortality for many years. The average weekly death rate in Montreal is 125. There was only one death from a contagious disease.

Vaccination in Toronto.—One of the members of the Toronto board of education is calling for opinions from citizens looking toward the abolition of compulsory vaccination among the school children of that city. The medical health officer advises that instead of abolishing vaccination, it should be extended to include the separate schools in the city.

Margaret Scott Nursing Mission, Winnipeg.—During December, 1905, the nurses of the Margaret Scott Nursing Mission of Winnipeg made 1,003 visits, which show that the work of the mission has nearly doubled since 1904, when only 528 visits were made. Two hundred and ninety-one visits were paid to typhoid fever patients and 186 to obstetrical cases.

Annual Meeting of the Canadian Association for the Prevention of Tuberculosis.—The executive council of the Association for the Prevention of Tuberculosis in Canada met in Ottawa, January 8. It was resolved to hold the next annual meeting in Ottawa in the last week in March, at a date acceptable to the governor-general. Dr. A. J. Richer of Montreal is to deliver an illustrated lecture on consumption at the annual meeting. The question of how the dominion government can best assist in stamping out this plague in Canada, will be submitted to the minister of agriculture at an early date by the president of the association, Senator Edwards.

FOREIGN.

Chair for Social Medicine.—The medical faculty of the University of Bonn, Germany, has created a professorship of social medicine. The first incumbent is to be Professor Rump, until recently director of the General Hospital at Hamburg, but now professor of internal medicine at Bonn.

Death from X-Ray Injury.—The death is reported from Paris of Mr. A. Radiguet, one of the best known designers, makers and demonstrators of instruments for application of the Roentgen rays to medicine. He was chairman of the committee in charge of the exhibition of radiotherapy at the international expositions at Paris, St. Louis and Liège last year. In his constant work with the x-rays, an x-ray burn of the right arm resulted in gangrene, which proved fatal after months of suffering.

Medical Inspection of Schools in Berlin.—The medical inspectors of the schools at Berlin have recently published a detailed report of their work during 1904-5. Each inspector has 127 classes, that is, 8 or 9 schools, to supervise, more than four times as many as in any other German city. The report shows the inestimable benefit of medical inspection from many standpoints. It was found that in one school 31.9 per cent. of the girls and 34.4 per cent. of the boys were habitually drinking beer every day, while 1.8 per cent. of the girls and 4 per cent. of the boys took alcoholic drinks. The development of nervous affections during school life is also confirmed by the report.

Quarantine Facilities in Northern Brazil.—The health officer of the republic, who has just returned from an inspection of quarantine methods and facilities and of the way in which health regulations are observed in northern ports of Brazil, expresses himself in his report as unsatisfied with the result of his inspection. He states that he intends to petition the government to provide the necessary money for the purchase of such indispensable appliances as will secure disinfection establishments, isolation hospitals and disinfecting launches for the fumigation of ships. He reports that the general health of the northern ports is good, but that there is a good deal of smallpox and yellow fever in Manaos, and that the latter malady is prevalent in Belem, the port and capital of Para.

What Shall We Call Schaudinn's Pale Pseudo-Spirochete?—Schaudinn has announced that the *Spirochete pallida* discovered by him has certain features which class it apart from spirochetes and also from spirilla. He is convinced that it is a new species, and, as mentioned in these columns on page 1992, he suggested the name *Spirocnema* for it. He has since learned that this name has been appropriated for a mollusc and for a flagellate, and he now offers the term *Treponema* to designate his pseudo-spirochete. A suggestion has recently been made in this country to call it the *Micro-spirocnema*, but Schaudinn has the priority, and his term is shorter. It now seems that some of the other so-called spirochetes in reality have no claim to this title. The *Semaine Médicale* remarks in regard to Schaudinn's, that even if we accept his name, *Treponema pallidum*, it will be many a day before clinicians refer to syphilis as "treponemiasis." There has been some confusion in regard to the spelling of spirochete. Spirocheta is the historical term, as first applied by Ehrenberg seventy years ago, but spirochate conforms better to the Greek derivation, and is the one now used by the Germans.

Fancy Dress Ball of the Paris Internes.—One of the features of medical life in Paris among the younger set is the annual *bal de l'Internat*, given in the heart of the Latin quarter. The procession of floats representing the various hospitals is reviewed by a committee of prominent physicians and surgeons, artists and theatrical managers. The first prize at the recent ball was awarded to the St. Antoine Hospital for its representation of the "History of Cholera." First came India, personified by a beautiful maiden, followed by the gilded form of the god Vishnu, brandishing the symbolic boudion culture medium. Then came with great flourish of trumpets and red and green fires, a ferocious giant strutting on an inaccessible erag, this car being labeled: "The True Cholera—the Cholera Descending the Russian Rivers." Lariboisière Hospital, with its representation of a glimpse into Hades, and the Charité Hospital, with its "Vasclimade," shared the second prize. Beaujon's Hospital float was a tableau representing Abel Faivre's famous painting, "The Auscultation," a white-haired physician ausculting the chest of a fair patient. The float of the new Aubervilliers Hospital showed a cart drawn by real oxen and other features of a native African village, all in the clutch of sleeping sickness. The *Journal de Méd. de Paris* for December 23 gives a description of the ball.

Pharmacology

Endorsement of Propaganda for Common Sense in Therapeutics.

Dr. Albert M. Eaton, Philadelphia, under date of December 26, writes:

"I thank those in authority for the protection given to us medical men throughout the United States by the work of the Council on Pharmacy and Chemistry. THE JOURNAL is doing good work for all of us in protecting us from schemes and fakes in and out of the profession."

Dr. J. A. Pettit, Portland, Ore., writes:

"I wish to congratulate you on the campaign you are conducting against nostrums. The profession has been 'used,' and an undue advantage taken of the gullibility of its less sagacious members. The result of your efforts along this line will be far reaching, not only in checking the chaos into which modern therapeutics has been gradually drifting, but also in bettering present existing conditions."

Dr. J. H. Ball, Crystal Falls, Texas, writes that he is greatly pleased with the work being done by THE JOURNAL in endeavoring to bring the profession to ethical terms.

Dr. C. E. Duncan, Flora, Ill., writes:

"I am with you heart and soul in your fight on nostrums. Also let me express my gratitude to you for opening my eyes on this important question. I am 'young yet' and have not erred very much in the use of these 'ethical' products. However, but for the 'news' you have printed I know I would have been drawn into the net of 'eloquent' drug salesman."

Dr. J. E. E. Olander, St. Paul, writes:

"Let the good work against poor drugs go on. We appreciate it. The special article is just what we need."

COUNTY SOCIETIES TAKE ACTION.

The Westmoreland County (Pa.) Medical Society, at its December meeting, passed resolutions commending the action of the American Medical Association in establishing a Council on Pharmacy and Chemistry to investigate non-official drugs and medical preparations, and expressing its hearty approval of the action THE JOURNAL has taken in regard to nostrums. The society also commended the work of *Collier's Weekly* and the *Ladies' Home Journal* in exposing the evils of "patent medicines."

Similar resolutions were passed by the Anglaize County (Ohio) Medical Society at its December meeting, by the Nacogdoches County (Texas) Medical Society and by the Northwest Branch of the Chicago Medical Society. The last-mentioned society in addition asked each member to refrain from prescribing proprietary medicines in any case in which it is possible to use the official preparations.

At a meeting held Jan. 10, 1906, the Philadelphia County Medical Society adopted the following resolution:

Resolved, That this society considers it highly unethical and improper for physicians to prescribe or to sanction the use of medicinal agents whose formula and composition are kept secret or concealed; it deprecates the manufacture and sale by pharmacists of nostrums of all kinds; it advises the public against the use of all so-called "patent medicines" and nostrums; it expresses its cordial appreciation and hearty endorsement of the action of the American Medical Association in creating a Council on Pharmacy and Chemistry, and of the officers of the Association, particularly the editor of THE JOURNAL of the Association, in their efforts to exclude advertisements of nostrums from the columns of THE JOURNAL and for their campaign against the nostrum evil; it acknowledges its obligation to and bespeaks the hearty support of those brave lay journals that have done so much to arouse popular and professional sentiment against the use of nostrums by exposing the character of the promoters of this nefarious traffic and the composition of their products; it urges on all editors and publishers, lay and medical, the exclusion from their columns of advertisements of nostrums and furtherance of the crusade against their use; it urges all physicians to refrain from subscribing to and publishing their scientific papers in medical journals that accept advertisements of nostrums; it recommends the appointment by the president of a committee of three to communicate in person and by correspondence with editors and publishers for the purpose of securing their co-operation in the present crusade; it calls the attention of the medical schools to the necessity of training their graduates more fully in the materia medica and in the art of pharmacy, and of pointing out the dangers from the use of nostrums; it heartily endorses the bill for the prevention of

the adulteration and misbranding of foods, drugs, medicines and liquors, now pending or shortly to be introduced in the United States Senate; it urges on the Legislature of the State of Pennsylvania the enactment of laws supplementing the contemplated action of the Federal Government; it condemns the granting by the United States Patent Office of copyright trade-mark registration to the class of nostrums; and by the United States Postoffice of the use of the mails for the exploitation of these nostrums; it requests members of the medical profession to make report of all cases of injury, death or drug habit due to the use of nostrums; it desires to give the widest publicity in both the medical and the lay press to the foregoing resolutions embodying its views on the nostrum evil as adopted, and asks that a committee of one be appointed to promulgate these resolutions.

Not Now Members of the Proprietary Association.

Messrs. Schieffelin & Co. ask us to announce that they have withdrawn from the Proprietary Association of America. They claim that their membership in the Association was merely nominal, and came about through their wholesale drug business, entirely apart from their pharmaceutical department.

Messrs. E. Fougere & Co. also announce that they have withdrawn from the Proprietary Association.

Messrs. Smith, Kline & French Co., Philadelphia, write that they were formerly members of the Proprietary Association, but that they have resigned.

PREYING ON THE INCURABLES.

Samuel Hopkins Adams' Fifth Article in the Series on the Great American Fraud.

Under the title of "Preying on the Incurables" appears the fifth installment of Samuel Hopkins Adams' article on the Great American Fraud in *Collier's Weekly* for January 13. We copy below part of the article, but the illustrations which accompany it are not the least important part of the presentation of the subject:

Incurable disease is one of the strongholds of the patent medicine business. The ideal patron, viewed in the light of profitable business, is the victim of some slow and wasting ailment in which recurrent hope inspires to repeated experiments with any "cure" that offers. In the columns of almost every newspaper you may find promises to cure consumption. Consumption is a disease absolutely incurable by any medicine, although an increasing percentage of consumptives are saved by open air, diet and methodical living. This is thoroughly and definitely understood by all medical and scientific men. Nevertheless there are in the patent medicine world a set of harpies who, for their own business interests, deliberately foster in the mind of the unfortunate sufferer from tuberculosis the belief that he can be saved by the use of some absolutely fraudulent nostrum. Many of these consumption cures contain drugs which hasten the progress of the disease, such as chloroform, opium, alcohol and hashesh. Others are comparatively harmless in themselves, but by their fervent promises of rescue they delude the sufferer into misplacing his reliance and forfeiting his only chance by neglecting those rigidly careful habits of life which alone can conquer the "white plague." One and all, the men who advertise medicines to cure consumption deliberately traffic in human life.

Certain members of the Proprietary Association of America (the patent medicine "combine") with whom I have talked have urged on me the claim that there are firms in the nostrum business that are above criticism, and have mentioned H. E. Bucklen & Co. of Chicago, who manufacture a certain salve. The Bucklen salve did not particularly interest me. But when I came to take up the subject of consumption cures I ran unexpectedly on an interesting trail. In the country and small city newspapers there is now being advertised lavishly "Dr. King's New Discovery for Consumption." It is proclaimed to be the "only sure cure for consumption." Further announcement is made that "it strikes terror to the doctors." As it is a morphin and chloroform mixture, "Dr. King's New Discovery for Consumption" is well calculated to strike terror to the doctors or to any other class or profession, except, perhaps, the undertakers. It is a pretty diabolical concoction to give to any one, and particularly to a consumptive. The chloroform temporarily allays the cough, thereby checking nature's effort to throw off the dead matter from the lungs. The opium drugs the patient into a deceived cheerfulness. The combination is admirably designed to shorten the life of any consumptive who takes it steadily. Of course, there is nothing on the label of the bottle to warn the purchaser. That would decrease the profits. The makers of this beneficent preparation are H. E. Bucklen & Co. of Chicago.

Chloroform and Prussic Acid.

Another "cure" which, for excellent reasons of its own, does not print its formula, is "Shiloh's Consumption Cure," made at Leroy, N. Y., by S. C. Wells & Co. Were it to publish abroad the fact that it contains, among other ingredients, chloroform and prussic acid, the public would probably exhibit some caution in taking it. Under our present lax system there is no warning on the bottle that the liquid contains one of the most deadly of poisons. The makers write me:

"After you have taken the medicine for awhile, if you are not firmly convinced that you are very much better, we want you to go to your druggist and get back all the money that you have paid for Shiloh."

But if I were a consumptive, after I had taken "Shiloh" for awhile I should be less interested in recovering my money than in getting back my wasted chance of life. Would S. C. Wells & Co. guarantee that?

Morphin is the important ingredient of Dr. Bull's Cough Syrup. Nevertheless, the United States Postoffice Department obligingly transmits me a dose of this poison through the mails from A. C. Meyer & Co. of Baltimore, the makers. The firm writes me, in response to my letter of inquiry:

"We do not claim that Dr. Bull's Cough Syrup will cure an established case of consumption. If you have gotten this impression you most likely have misunderstood what we claim. . . . We can, however, say that Dr. Bull's Cough Syrup has cured cases said to have been consumption in its earliest stages."

Quite conservative this. But A. C. Meyer & Co. evidently don't follow their own advertising very closely, for around my sample bottle (by courtesy of the Postoffice Department) is a booklet, and from that booklet I quote:

"There is no case of hoarseness, cough, asthma, bronchitis or consumption that *can not be cured speedily* by the proper use of Dr. Bull's Cough Syrup."

If this is not a claim that Dr. Bull's Cough Syrup "will cure an established case of consumption," what is it? The inference from Meyer & Co.'s cautious letter is that they realize their responsibility for a cruel and dangerous fraud, and are beginning to feel an uneasiness about it, which may be shame or may be only fear. One logical effect of permitting medicines containing a dangerous quantity of poison to be sold without the poison label is shown in the coroner's verdict herewith printed. In the account of the Keck baby's death from the Dr. Bull opium mixture, which the Cincinnati papers published, there was no mention of the name of the cough syrup. Asked about this, the newspapers gave various explanations. Two of them disclosed that they had no information on the point. This is contrary to the statement of the physician in the case, and implies a reportorial laxity which is difficult to credit. One ascribed the omission to a settled policy and one to the fear of libel. When the coroner's verdict was given out, however, the name of the nostrum got into plain print. On the whole the Cincinnati papers showed themselves gratifyingly independent.

Another case of poisoning from this same remedy occurred in Moreoco, Ind., the victim being a 2-year-old child. . . .

Absolutely False Claims.

A curious mixture of the cautious, semi-ethical method and the blatant claim-all patent medicine is offered in the Ozomulsion Company. Ozomulsion does not, like the "cures" mentioned above, contain active poisons. It is one of the numerous cod-liver-oil preparations, and its advertising, in the medical journals at first and now in the lay press, is that of a cure for consumption. I visited the offices of the Ozomulsion Company recently and found them duly furnished with a regular physician, who was employed, so he informed me, in a purely ethical capacity. There was also present during the interview the president of the Ozomulsion Company, Mr. A. Frank Richardson, former advertising agent, former deviser of the advertising of Swamp-Root, former proprietor of Kranitonic and present proprietor of Slocum's Consumption Cure, which is the "wicked partner" of ozomulsion. For convenience I will put the conversation in court report form, and, indeed, it partook somewhat of the nature of a cross-examination:

Q.—Dr. Smith, will Ozomulsion cure consumption?

A.—Ozomulsion builds up the tissues, imparts vigor, aids the natural resistance of the body, etc. (Gives into a long exploitation in the manner and style made familiar by patent-medicine pamphlets.)

Q.—But will it cure consumption?

A.—Well, without saying that it is a specific, etc. (Passes to an instructive, entertaining and valuable disquisition on the symptoms and nature of tuberculosis.)

Q.—Yes, but will Ozomulsion cure consumption?

A.—We don't claim that it will cure consumption.

Q.—Does not this advertisement state that Ozomulsion will cure consumption? (Showing advertisement.)

A.—It seems to.

- Q.—Will Ozomulsion cure consumption?
 1.—In the early stages of the disease.
 Q. (interrupting).—Does the advertisement make any qualifications as to the stage of the disease?
 1.—Not that I can find.
 Q.—Have you ever seen that advertisement before?
 1.—Not to my knowledge.
 Q.—Who wrote it?
 1. (by *Percival Richardson*).—I done that ad. myself.
 Q.—Mr. Richardson, will Ozomulsion cure consumption?
 1.—Sure; we got testimonials to prove it.
 Q.—Have you ever investigated any of these testimonials?
 1.—No.
 Q. (to Dr. Smith).—Dr. Smith, in view of the direct statement of your advertising, do you believe that Ozomulsion will cure consumption?
 1.—Well, I believe in a great many cases it will.

Health for Five Dollars.

Dr. Slocum puts out a "Special Cure Offer" that will snatch you from the jaws of death, on the blanket plan, for \$5, and guarantees the cure (or more medicine) for \$10. His scheme is so noble and broad-minded that I can not refrain from detailing it. For \$5 you get:

- 1 large bottle of Psychine.
- 1 large bottle of Ozomulsion.
- 1 large bottle of Coltsfoot Epectorant.
- 1 large tube of Ozojil.
- 3 boxes of Lazy Liver Pills.
- 3 Hot X-ray Porous Plasters.

"Which," says the certificate, "will in a majority of cases effect a permanent cure of the malady from which the invalid is now suffering." Whatever ails you—that's what Dr. T. A. Slocum cures. For \$10 you get almost twice the amount, plus the guarantee. Surely, there is little left on earth, unless Dr. Slocum should issue a \$15 offer, to include funeral expenses and a tombstone.

The Slocum Consumption Cure proper consists of a gay-headed substance known as "Psychine." Psychine is about 16 per cent. alcohol and has a dash of strychnin to give the patient his money's worth. Its alluring color is derived from cochineal. It is "an infallible and unfailing remedy for consumption." Ozomulsion is also a sure cure, if the literature is to be believed. To cure one's self twice of the same disease savors of reckless extravagance, but as "a perfect and permanent cure will be the inevitable consequence," perhaps it's worth the money. It would not do to charge Dr. T. A. Slocum with fraud, because he is, I suppose, as dead as Lydia E. Pinkham; but Mr. A. Frank Richardson is very much alive, and I trust it will be no surprise to him to see here stated that his Ozomulsion makes claims that it can not support, that his Psychine is considerably worse, that his special cure offer is a bit of shameless quackery and that his whole Slocum Consumption Cure is a fake and a fraud so ludicrous that its continued existence is a brilliant commentary on human credulousness.

Peruna, Liquezone, Duffy's Malt Whiskey, Pierce's Golden Medical Discovery and the other "blanket" cures include tuberculosis in their lists, claiming great numbers of well-authenticated cures. From the imposing book published by the R. V. Pierce Company of Buffalo I took a number of testimonials for investigation; not a large number, for I found the consumption testimonials rather scarce. From fifteen letters I got results in nine cases. Seven of the letters were returned to me marked "unclaimed," of which one was marked "Name not in the directory," another "No such postoffice in the state," and a third "Deceased." The eighth man wrote that the Golden Medical Discovery had cured his cough and blood-spitting, adding: "It is the best lung medicine I ever used for lung trouble." The last man said he took twenty-five bottles and was cured! Two out of nine seems to me a suspiciously small percentage of traceable recoveries. Much stress has been laid by the Proprietary Association of America, through its press committee, on the suit brought by R. V. Pierce against the *Ladies' Home Journal*, the implication being (although the suit has not yet been tried) that a reckless libeler of a noble and worthy business has been suitably punished. In the full appreciation of Dr. Pierce's attitude in the matter of libel, I wish to state that in so far as its claim of curing consumption is concerned his Golden Medical Discovery is an unqualified fraud.

One might suppose that the quacks would stop short of trying to deceive the medical profession in this matter, yet the "consumption cure" may be found disporting itself in the pages of the medical journals. For instance, I find this advertisement in several professional magazines:

"McArthur's Syrup of Hypophosphites has proved itself, time and time again, to be positively beneficial in this condition [tuberculosis] in the hands of prominent observers, clinicians, and, what is more, practicing physicians, hundreds of whom have written their admiring encomiums in its behalf, and it is the enthusiastic conviction of many that its effect is truly specific."

Which, translated into lay terms, means that the syrup will cure consumption. I find also in the medical press "a sure cure for dropsy," fortified with a picture worthy of Swamp-Root or Lydia Pinkham. Both of these are frauds in attempting to foster the idea that they will cure the diseases, and they are none the less fraudulent for being advertised to the medical profession instead of to the laity.

Consumption is not the only incurable disease in which there are good pickings for the birds of prey. In a recent issue of the *New York Sunday American-Journal* I find three cancer epilepsy cures and a "case of paralysis cured." . . . As space lacks to consider individually the nature of each nostrum separately, I list briefly, for the protection of those who read, a number of the more conspicuous swindles of this kind now being foisted on the public:

Rupert Wells' Radiatized Fluid, for cancer.

Miles' Heart Disease Cure.

Miles' Grand Dropsy Cure.

Dr. Tucker's Epilepsy Cure.

Dr. Grant's Epilepsy Cure.

W. H. May's Epilepsy Cure.

Dr. Kline's Epilepsy Cure.

Dr. W. O. Bye's Cancer Cure.

Mason's Cancer Cure.

Dr. Williams' Pink Pills for Pale People, which are advertised to cure paralysis and are a compound of green vitriol, starch and sugar.

Purchasers of these nostrums not only waste their money, but in many cases they throw away their only chance by delaying proper treatment until it is too late.

Properly, a "cure" known as Bioplasm belongs in this list, but so ingenious are its methods that it deserves some special attention. In some of the New York papers a brief advertisement reading as follows occupies a conspicuous position:

"After suffering for ten years the torture that only an ataxic can know, Mr. E. P. Burnham of Delmar, N. Y., has been relieved of all pain and restored to health and strength, and the ability to resume his usual pursuits, by an easily obtained and inexpensive treatment which any druggist can furnish. To any fellow-sufferer who mails him a self-addressed envelope, Mr. Burnham sends free this prescription which cured him."—*Ad.*

Now, people who give away something for nothing and spend money advertising for a chance to do it are as rare in the patent medicine business as out of it, and Delmar, N. Y., is not included in any map of Altruism that I have learned of. E. P. Burnham, therefore, seemed worth writing to. The answer came back, promptly inclosing the prescription and explaining the advertiser's purpose:

"My only motive in the notice which caught your attention is to help other sufferers. *You are not suffering. I have nothing to sell.* When you are benefited, however, if you feel disposed and able to send me a contribution to assist me in making this great boon to our fellow-sufferers better known, it will be thankfully received and used for that purpose."

I fear that Mr. Burnham doesn't make much money out of grateful correspondents who were cured of locomotor ataxia by his prescription, because locomotor ataxia is absolutely and hopelessly incurable. Where Mr. Burnham gets his reward, I fancy, is from the Bioplasm Company of 100 William street, New York, whose patent medicine he prescribed for me. I should like to believe that his "only motive is to help other sufferers," but as I find, on investigation, that the advertising agents who handle the "Burnham" account are the Bioplasm Company's agents, I am regretfully compelled to believe that Mr. Burnham, instead of being of the tribe of the good Samaritans, is probably an immediate relative of Ananias. The Bioplasm Company also proposes to cure consumption, and is worthy of a conspicuous place in the Fraud's Gallery of nostrums.

There are being exploited in this country to-day more than 100 cures for diseases that are absolutely beyond the reach of drugs. They are owned by men who know them to be swindles, and who in private conversation will almost always evade the direct statement that their nostrums will "cure" consumption, epilepsy, heart disease and ailments of that nature. Many of them "guarantee" their remedies. They will return your money if you aren't satisfied. And they can afford to. They take the lightest of risks. The real risk is all on the other side. It is their few pennies per bottle against your life. Were the facile patter by which they lure to the bargain a menace to the pocketbook alone, one might regard them only as ordinary followers of light finance, might imagine them filching their gain with the confidential, half-brozen, half-ashamed leer of the thimblegragger. But the matter goes further and deeper. Every man who trades in this market, whether he pockets the profits of the maker, the purveyor or the advertiser, takes toll of blood. He may not deceive himself here, for here the patent medicine business is nakedest, most cold-hearted. Relentless greed sets the trap and death is partner in the enterprise.—*Extract from Collier's Weekly*, Jan. 13, 1906.

Correspondence

Is Cancer Contagious?

MONTREAL, CANADA, Jan. 10, 1905.

To the Editor:—For more than ten years I have been convinced that cancer is a contagious disease, the cause of the contagion being either a cell or a microbe contained in the discharges. I am now gathering facts to prove that it is not hereditary, as most people believe. One of the facts which has become very apparent from the study of my cases is that it is the exception for a cancer patient to have had a father or mother who has died from cancer; while quite a number of them had come in contact with cancer patients who were not related to them and from whom I believe they contracted the disease. I would like to hear from any of your readers who have made similar observations. It would also be very interesting to know if there is any village, among the inhabitants of which no cases of cancer had ever occurred, until some one had imported the disease from another place, after which it has spread to others in the village. Any one sending me facts bearing on these two important points will receive due credit in the article which I am preparing for the meeting of the British Medical Association in Toronto this year. I recently published an article declaring that cancer was becoming very rare in my public and private practice, which I attributed to the fact that every woman with a lacerated cervix in the practice of myself and friends, had had the injury repaired or the cervix amputated so as to remove the scar tissue on which cancer grows best. Since then I have received a letter from a prominent gynecologist of Boston saying that this has been his experience also. Not only that, but I believe that a woman suffering from cancer of the uterus may, during a year or two before she dies, infect her friends and neighbors with cancer of the face, lips, throat, stomach and intestine. If this is so, it is important to make it known so that there may be a crusade for stamping out cancer by early operation, or when too late for that, then by isolation and disinfection. I am sure that no more important subject could occupy your pages than the investigation of the origin and spread of this terrible disease.

A. LAPHORN SMITH.

Queries and Minor Notes

SACCHARASCOPE ESTIMATION OF SUGAR IN URINE.

To the Editor:—1. Can you give me in full the method employed with the saccharascope (Nelson Baker & Co.)?

2. Is it an accurate means of estimating sugar in the urine? How does it compare in accuracy with the saccharometer (Fehnhorn's)?

3. What are the definite amounts of the reagents used in Ruhemann's uricometer?

G. K.

ANSWER.—The saccharascope of Nelson Baker & Co. consists of two chambers or receivers, one to contain the fermenting solution, the other to collect and measure the gas evolved in the fermentation. The fermenting chamber is filled to the mark with the urine, which is previously mixed with 15 grains of compressed yeast. A compensation tablet is then added, which will evolve just enough carbonic acid to saturate the liquid so that all the gas collected will represent sugar present in the urine. The measuring chamber is filled with water on which floats a layer of oil to prevent absorption of the gas, the upper surface of the oil being brought exactly to the zero mark. Insert the stoppers securely and set the instrument aside in a place where the temperature will be constantly 80 F., providing a container to receive the water which flows from the outlet tube as the fermentation proceeds. Allow the instrument to stand for 24 hours, and then read off the volume of gas collected, which will indicate directly the proportion of sugar present. If the preliminary examination has indicated more than three grains of sugar to the ounce, the urine will have to be diluted accordingly. The amount of urine used in this test is one ounce, and the amount of sugar indicated is grains per fluid ounce.

2. This method is as accurate as any such method can be, and depends on the accuracy of the calibration of the measuring chamber. If properly manipulated it should give a little more accurate results than Fehnhorn's method, but either are sufficiently accurate for clinical purposes.

3. The method and amounts of reagents used in the Ruhemann's uricometer are as follows: The test is based on the principle that a brown iodine solution is decolorized by a certain proportion of uric acid. Fill the dry glass tube to the lowest mark (S) with carbon bisulphide. A solution consisting of 1.5 grains iodine, 1.5 grains potassium iodide, 15 grains absolute alcohol and 185 grains distilled water is added up to mark J., Add urine to mark 2.45 (2.6 c.c.). Close the tube with glass stopper and shake well; the CS₂ becomes of a dark copper brown color. Add more urine under continued shaking, and the CS₂ will absorb all free iodine and the mixture will appear like urine. Slowly adding more urine will change the yellow foam into white foam. After a while the color of CS₂ will turn pink. Keep adding urine and shaking until only a slight reddish coloration of CS₂ remains. Now shake vigorously and the CS₂ will turn porcelain white and the urine will look like whey. The test is finished when the indicator appears snow white, showing that all the iodine has been decolorized by the urine. Read off the proportion of uric acid at the surface of the fluid as parts per M. For this test the urine must be slightly acid.

INTERNATIONAL SURGICAL AND MEDICAL CONGRESSES.

GOVERNORS HARBOR, BAHAMAS, Dec. 27, 1905.

To the Editor:—I would like to attend the International Surgical Congress to take place next spring (I believe) Madrid, Spain. Would you kindly inform me who the secretary is and how I may become a member?

E. L. GROSSMAN, M.D.

ANSWER.—The next International Surgical Congress is to be held at Brussels in 1908. Further particulars will be found in THE JOURNAL, Oct. 14, 1905, page 1418. Since our correspondent speaks of the congress as to take place next spring in Madrid, he probably means the International Medical Congress. By referring to the index to the last volume of THE JOURNAL, Dec. 30, 1905, page 2055, we find that the International Medical Congress was mentioned on pages 337, 932, 1010 and 1582. The program is given on page 337, July 29, 1905. The secretary of the American Committee is Dr. Ramon Gutierrez, 75 W. 55th St., New York. In volume xlv of THE JOURNAL, January to June, 1905, the International Medical Congress (according to the index on page 2033 of June 24, 1905) is mentioned on pages 159, 881, 1046, 1129, 1140, 1941 and 1942. On the two pages last mentioned are given the details of membership.

Marriages

JOHN W. BOLTON, M.D., Iola, Kan., at Kansas City, Mo., January 3.

CRAIG BARROWS, M.D., to Miss Elfreda De Reene, both of Savannah, Ga., January 3.

ALFRED P. HOLTZ, M.D., to Miss Minnie D. Droeger, both of Seymour, Wis., December 27.

LEWIS BERLIN, M.D., Norfolk, Va., to Miss Pauline Yaffee of Philadelphia, January 14.

JOHN P. MULRENNAN, M.D., to Miss Mary Carroll Byrne, both of Philadelphia, January 10.

BENJAMIN F. CORVIN, M.D., to Miss Ada H. Pettit, both of Brooklyn, N. Y., January 5.

FRANK W. FLEISCHAKER, M.D., to Miss Edna F. Levy, both of Louisville, Ky., January 10.

EDWIN R. KEEN, M.D., Caliente, Nev., to Miss Cora V. Achenebak of Ogden, Utah, recently.

JOHN ROSS SIMPSON, M.D., to Miss Alma Figue Parrott, both of Atlanta, Ga., January 2.

EDWARD T. ALFORD, M.D., Chicago, to Miss Bess Williston of Manchester, Iowa, January 17.

E. MARVIN DIBBLE, M.D., Marine, S. C., to Miss Aliem Nebb of Greenwood, S. C., December 28.

JOHN M. GARRINGER, M.D., Oelwein, Iowa, to Miss May McCool of Booneville, Ind., January 1.

CHARLES H. C. MILLS, M.D., Charlotte, N. C., to Miss Eliza Lamb of Williamston, N. C., January 9.

CHARLES F. GLADDING, M.D., Folsom, Cal., to Mrs. Harry Heywood of Berkeley, Cal., January 1.

EDWARD H. CLAUD, M.D., Portsmouth, Va., to Miss Daisy Camilla Nash of Norfolk, Va., January 16.

TAYLOR EDWIN DARRY M.D., Ancon, Canal Zone, to Miss Helen Story, at Barnesville, Md., January 11.

Deaths

Benjamin Walter Taylor, M.D. Medical College of the State of South Carolina, Charleston, 1858; a member of the American Medical Association; surgeon of the Second South Carolina Cavalry, C. S. A., and later medical director of the cavalry corps of the Army of Northern Virginia, with the rank of colonel; vice-president and president of the South Carolina Medical Association; three times president of the Columbia Medical Society; once president of the State Board of Health; delegate to the International Medical Congress at Philadelphia in 1876; a member of the Southern Surgical and Gynecological Association; visiting physician to the Columbia Hospital and to the South Carolina College Infirmary; a member of the board of regents of the State Hospital for the Insane, Columbia, since 1878, and for several years president of the board; one of the oldest and most distinguished practitioners of the state, died at his home in Columbia, December 27, from pneumonia, after an illness of six days, aged 71.

James W. Holland, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1894; a member of the American Medical Association; assistant medical examiner of the West Hampden district of Massachusetts; for two years an acting assistant surgeon in the Army, and on duty in the Philippine Islands; a member of the board of health of Westfield; a member of the staff of Noble Hospital; a member of the Massachusetts Medical Society, of the Hampden District Medical Society, of the Massachusetts Medicolegal Society, and of the Association of Military Surgeons of the United States, died at his home in Westfield December 29, from nephritis, after a short illness, aged 37.

James Lang Harriman, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1857; a member of the American Medical Association, Massachusetts Medical Society, Middlesex South District Medical Society and White Mountain Medical Society; assistant surgeon of the Thirteenth Massachusetts Volunteer Infantry in the Civil War; once a member of the legislature; for 37 years member or chairman of the Hudson school board; the oldest resident physician in Middlesex County, Mass., died at his home in Hudson, December 28, from nephritis, after an illness of nine weeks, aged 78.

Thomas Clifford Potter, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1871; a veteran of the Civil War; surgeon of the veteran corps of the First Infantry, N. G. Pa.; one of the founders of, and consulting physician to the Germantown Hospital; a member of the Philadelphia County Medical Society and a fellow of the College of Physicians of Philadelphia, died from heart disease, January 8, at his home in Germantown, Philadelphia, after an illness of several months, aged 57.

Theodore J. Bluthardt, M.D. Chicago Medical College of Chicago, 1861; assistant surgeon in the First Illinois Volunteer Cavalry during the Civil War; county physician of Cook County from 1866 to 1869 and from 1880 to 1888; a member of the board of county supervisors in 1869, and president of the board in 1870; in 1872 a member of the board of education and superintendent of compulsory education; United States consul at Barmen, Germany, died at his post in that city, January 15, aged 68.

Calvin Snook, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1869; local surgeon for the Burlington System; some-time president of the Southwestern Iowa Medical Association, and of the Tri-state Medical Society of Illinois, Iowa and Michigan; a member of the Iowa State Medical Society; a member of the school board and the city council of Fairfield, Iowa, who was found unconscious in his office, January 2, died at his home two days later, from cerebral hemorrhage, aged 57.

Emmet Cooper Dent, M.D. Bellevue Hospital Medical College, New York City, 1879; superintendent of the Manhattan State Hospital for the Insane, Ward's Island, and professor of nervous and mental diseases at the clinic of the New York Hospital of Physicians and Surgeons; member of the Medico-Psychological Society, New York Academy of Medicine, state and city medical societies, died suddenly of heart disease, January 12, aged 47.

Daniel Meigs Webb, M.D. Medical Institution of Yale College, New Haven, Conn., 1849; a member of the Connecticut Medical Society and the New Haven County Medical Association; for 56 years a practitioner of Madison, Conn., died at his home in that place, January 1, from senile debility, aged 83.

Harrison Hathaway, M.D. Miami Medical College, Cincinnati, 1870; a member of the American Medical Association; a veteran of the Civil War; for 10 years a member of the Toledo Public Library board; one of the most esteemed practitioners of East Toledo, was struck by a train while walking across a trestle and instantly killed, January 4, aged 64.

Thomas H. Nott, M.D. Long Island College Hospital, Brooklyn, N. Y., 1874; surgeon in the Confederate service during the Civil War; president of the Texas State Medical Association in 1886; ex-president of the Board of Medical Examiners for the Twenty-third and Twenty-fourth districts, died at his home in Goliad, Texas, December 29, from heart disease.

Karl O. Bendeke, M.D. Chicago Medical College, 1869; of Minneapolis, Minn.; a member of the American Medical Association; for the last 15 years a specialist in ophthalmology and otology; twice a member of the city council, died in St. Barnabas' Hospital, Minneapolis, January 5, a short time after an operation for disease of the kidney, aged 64.

Emil C. Brendel, M.D. University of Erlangen, Germany, 1853; for many years a practitioner of Springfield, Ill.; surgeon of the Eighty-second Illinois Volunteer Infantry in the Civil War; eminent as a scientist and entomologist, died at his home in Cedar Rapids, Iowa, January 6, after a long period of invalidism, aged 72.

David Thomas Jenkins, M.D. Western Pennsylvania Medical College, Pittsburg, 1897, Pittsburg; professor of orthopedics and assistant to the chair of nervous diseases in its alma mater; local surgeon for the Pennsylvania System, died at the West Penn Hospital, Pittsburg, December 21, from pneumonia, aged 41.

Joseph Warren Hancock, M.D. University of Buffalo (N. Y.) Medical Department, 1870; clerk of the Pierce County Board in 1877; county judge in 1885 and 1889, and a member of the State Board of Health in 1894, died at his home in Ellsworth, Wis., December 28, after an illness of about four years, aged 57.

John Dorrance Parsons, M.D. New Orleans School of Medicine, 1861; assistant surgeon of Bass' regiment, and Twelfth Texas Cavalry, C. S. A.; a member of the legislature in 1882; for several years president of the Dallas County Medical Association, died at his home in Dallas, December 26, aged 66.

Oswald M. Justice, M.D. College of Medicine and Surgery of the University of Minnesota, Minneapolis, 1897; formerly of Elysian, Minn., and coroner of Le Sueur County; convicted of crime in California and sentenced to six years' imprisonment, committed suicide in his cell by strangulation recently.

Charles F. Allan, M.D.S., a member of the American Medical Association, and chairman of the Section on Stomatology, 1906; orderly sergeant during the Civil War; member of the American Dental Association, died January 11 at his home in Newburgh, N. Y., from cerebral hemorrhage, aged 62.

Robert W. Steger, M.D. Vanderbilt University Medical Department, Nashville, 1877, formerly of Chicago, and since September last a resident of New York City, died in Bellevue Hospital, from the effects of morphin and chloroform, taken with suicidal intent, January 10, aged 48.

Clifford L. Stewart, M.D. Detroit (Mich.) College of Medicine, 1892; a member of the Wayne County Medical Society and for four years milk inspector for the Detroit Board of Health, died at Grace Hospital in that city, December 25, after an illness of six weeks, aged 38.

Frederick H. Simmons, M.D. Harvard University Medical School, Boston, 1851; for several terms justice of the peace; once a member of the city council of Provo, Utah, died at his home in that city, from senile debility, December 15, after a decline of two years, aged 74.

George H. Germain, M.D. Rush Medical College, Chicago, 1894, of Ponca City, Okla., died at St. Francis Hospital, Wichita, Kan., January 3, from septicemia following a railway accident four days before in which his foot was crushed necessitating amputation.

George Hasty, M.D. Cincinnati, Ohio, 1860; founder of a medical college and a member of its faculty for many years; for 20 years a medical editor, died at his home in Indianapolis, December 23, after an illness of four weeks, from tuberculosis of the larynx, aged 70.

W. H. McClain, M.D. St. Louis College of Physicians and Surgeons, 1893, assistant physician at the West Virginia Hospital for the Insane, Weston, died at that institution, December 27, from acute gastritis, after an illness of two weeks, aged about 40.

H. P. Monthorne, M.D. Faculty of Paris, France, 1870; a member of the American Medical Association; a specialist in electrotherapeutics; major-surgeon in the French army during the Franco-German War, died at his home in Spokane, Wash., December 3, from nephritis, after an illness of three weeks, aged 57.

Uhlér D. McDowell, M.D. Ohio Medical College, Cincinnati, 1888, formerly medical inspector of the Colorado State Board of Health and police magistrate of Longmont, died at his home in that city, January 3, after a long illness from tuberculosis, aged 40.

William Edgar Hemphill, M.D. Baltimore Medical College, 1892; of Arden, N. C.; coroner of Buncombe County, died at the Clarence Barker Memorial Hospital, Baltimore, N. C., December 25, a day after an operation for appendicitis, aged 35.

Selwyn A. Russell, M.D. Albany (N. Y.) Medical College, 1877, died at his home in Poughkeepsie, January 11, from starvation due to experimentation on himself in accordance to one of his theories in regard to the influence of mind over matter.

Horace M. Nash, M.D. University of Vermont Medical Department, Burlington, 1876, of Worcester, a member of the Massachusetts Medical Society, died suddenly in the City Hospital, Worcester, December 24, from heart disease, aged 61.

William Ernest Maddox, M.D. Medical Department University of Texas, Galveston, 1895; for three years hospital steward, United States Army in the Philippine Islands; died in Hobart, Okla., December 29, from pneumonia, aged 31.

Abbie Cutler Tyler, M.D. New England Female College, Boston, 1868, of Washington, D. C., a member of the Medical Association of the District of Columbia since 1893, died in Warren, Mass., January, from heart disease, aged 70.

Uriah H. McMullen, M.D. Jefferson Medical College, Philadelphia, 1898, a member of the American Medical Association, of Merrittstown, Pa., died at the Jefferson Medical College Hospital, Philadelphia, January 1, aged 33.

Daniel R. Hibbard, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1864, city supervisor of Sturgis, Mich., for several years, died at his home in that city, January 2, after a prolonged invalidism.

George H. Rheingans, M.D. Milwaukee Medical College, 1898, a member of the Washington County Medical Society, died at his home in South Germantown, Wis., January 7, after an illness of nearly two months, aged 39.

D. Heber Plank, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1867, a member of the Berks County Medical Association, died at his home in Morgantown, Pa., January 4, aged 63.

John F. Mulberin, M.D. Niagara University Medical Department, Buffalo, N. Y., 1888, of Syracuse, N. Y., died at St. Joseph's Hospital in that city, January 7, from diabetes, after an illness of one year, aged 39.

Milburn Hill Logan, M.D. San Francisco, 1881, of San Francisco, who had been under treatment at the Agnew State Hospital, escaped from his home in San Francisco, and died from exposure, December 26, aged 50.

Abraham Rosenthal, M.D. College of Physicians and Surgeons in the City of New York, 1890, died recently at his home in Farmington, N. M. He had been ill for several years with pulmonary tuberculosis.

Frank M. King, M.D. Cincinnati, 1892, of Damascus, Ohio, committed suicide by shooting himself in the head, while dependent on account of domestic trouble, at Alliance, Ohio, January 2, aged 45.

Mary A. Hayward, M.D. New York City, 1883, a practitioner for fifty years, died at the home of her daughter in Brooklyn, N. Y., January 3, from disease of the stomach, after an illness of a week, aged 77.

Clayton L. Hill, M.D. University of Buffalo (N. Y.) Medical Department, 1864, a surgeon during the Civil War, died suddenly at his home in Buffalo, December 25, from heart disease, aged 66.

John Nelson Bowers, M.D. Medical Department of Western Reserve University, Cleveland, Ohio, 1885, died at his home in Westfield, N. Y., January 7, after a long illness from nephritis, aged 48.

John Kane, M.D. College of Physicians and Surgeons of Ontario, Toronto, 1905, died at his home in Cornwall, Ont., December 7, from injuries received in a runaway accident, aged 31.

Jacob McDowell, M.D. (County License, 1897), for more than half a century a practitioner of Adams County, Ind., died at his home near Geneva, Ind., December 18, from senile debility, aged 77.

Oliver P. Askam, M.D. Kentucky School of Medicine, Louisville, 1884, died at his home in Mountain View, Cal., January 2, from disease of the liver, after an illness of three weeks, aged 42.

Alexander H. Cooke, M.D. New York University, New York City, 1846, once chief of staff at St. Joseph's Hospital, Chicago, died at his apartment in Chicago, January 8, aged 83.

Peter F. Bellinger, M.D. Bellevue Hospital Medical College, New York City, 1879, of Durango, Colo., died at Mercy Hospital in that city, January 5, after a short illness, aged 50.

Dryden Johnson, M.D. New York University, New York City, 1878, of Antonito, Colo., died at St. Joseph's Sanitarium, Albuquerque, N. M., January 7, from nephritis, aged 55.

George A. Martin, M.D. Pennsylvania, 1886, a veteran of the Civil War, died at his home in Boone, Iowa, January 7, from bronchitis, after an illness of two months, aged 64.

John Gordon Frierson, M.D. Vanderbilt University Medical Department, Nashville, Tenn., 1886, died at his home in Mount Pleasant, Tenn., January 5, from pneumonia, aged 41.

Richard Hodgson, M.D. New York, 1867, secretary and treasurer of the Society for Psychical Research, died suddenly in Boston, December 21, from heart disease.

William B. Stoner, M.D. Kentucky School of Medicine, Louisville, 1892, of Sunbury, Pa., died at Clifton Springs Sanitarium, N. Y., January 9, aged 60.

Dudley Robinson, M.D. Medical College of Alabama, Mobile, 1860, a Confederate veteran, died at his home in Robinson Springs, Ala., January 1, aged 66.

George H. Randle, M.D. University of Nashville Medical Department, 1856, died at his home in Waco, Texas, January 5, after a long illness, aged 69.

Abraham L. Lewis, M.D. New York University, New York City, 1897, died from starvation in his room in Brooklyn, N. Y., December 27, aged 33.

John R. Murray, M.D. Atlanta (Ga.) Medical College, 1895, of Hazen, Ark., died suddenly at De Vall's Bluff, Ark., December 27, from drug addiction.

G. S. Millikan, M.D. Joplin (Mo.) College of Physicians and Surgeons, 1883, died recently from dropsy at his home in Schell City, Mo., aged 55.

Alexius L. Middleton, M.D. University of Maryland School of Medicine, Baltimore, 1860, died in Prince George County, Md., January 8, aged 73.

Francis M. Hill, M.D. Examination, Iowa, died at his home in Persia, Iowa, January 1, after a short illness from neuralgia of the stomach, aged 61.

Curtis T. Hines, M.D. New Orleans School of Medicine, 1869, died at his home in West Monroe, La., January 5, after a short illness, aged 60.

Richard L. Kendall, M.D. Illinois, 1897, of Aurora, Ill., died from nephritis at San Diego, Cal., January 1, after a long illness, aged 33.

Joseph L. Davis, M.D. Starling Medical College, Columbus, Ohio, 1889, died at his home in Charleston, W. Va., December 29, aged 46.

William B. Kaiser, M.D. New York, 1897, died at his home in Hoboken, N. J., December 29, after a lingering illness, aged 31.

William C. Nelson, M.D. Kentucky School of Medicine, Louisville, 1859, died at his home in Salvisa, Ky., December 17, aged 68.

Harriet N. F. Cooke, M.D. New York, 1863, died from cerebral hemorrhage at her home in New York City, January 7, aged 75.

Thomas D. Goodwyn, M.D. Atlanta, 1884, a Confederate veteran, died at his home in Oakland, Ga., December 29, aged 64.

Alois Blank, M.D. St. Louis Medical College, 1869, died at his home in St. Louis, January 5, after a brief illness, aged 57.

Harry Munger, M.D. Ohio, 1892, died at his home in Carlisle, Ky., January 4, after a lingering illness, aged 48.

Stacy Jones, M.D. Pennsylvania, 1853, for 33 years a practitioner of Darby, Pa., died recently at Seattle, Wash.

Louis A. Melze, M.D. Pennsylvania, 1883, died at his home in Chicago, December 28, aged 55.

Richard Randolph, M.D., died at his home in Philadelphia, January 10, aged 83.

Association News

New Secretary of Section on Nervous and Mental Diseases.

Owing to the ill health of Dr. David I. Wolfstein, secretary of the Section on Nervous and Mental Diseases, the chairman has appointed Dr. T. H. Weisenburg of Philadelphia, as secretary for the ensuing year. Dr. Wolfstein will go abroad as soon as he is able to travel.

NATIONAL LEGISLATIVE COUNCIL.

*Proceedings of the Meeting, held at Washington, D. C.,
Jan. 9-11, 1906.*

Preliminary Meeting of the National Committee on Legislation.

The Committee on Legislation met at the New Willard Hotel, Washington, D. C., 10 a. m. There were present: Dr. William H. Welch (Maryland), Dr. W. L. Rodman (Pennsylvania), and the Chairman, Dr. Charles A. L. Reed (Ohio).

The various questions of legislation were taken up in the following order (a) The Army Medical Reorganization Bill; (b) the Pure Food and Drug Bill; (c) the Question of a Department of Public Health; (d) National Incorporation of the American Medical Association; (e) District of Columbia bills.

The address of the Chairman, to be presented to the National Legislative Council, was then delivered and, after some changes, was adopted.

The committee then adjourned to attend the conference with the National Legislative Council, January 9-11.

CHARLES A. L. REED, Chairman,
WILLIAM L. RODMAN, Secretary.

Opening Session.

The National Legislative Council of the American Medical Association met at the New Willard Hotel, Washington, D. C., Jan. 9, 1906, at 1:19 p. m.

Charles A. L. Reed, Chairman of the National Legislative Committee, called the meeting to order. At his request C. S. Bacon of Illinois was appointed Secretary. The roll was called as follows:

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| Dr. I. H. Moore | | Treadwell, Alaska. |
| Dr. W. H. Sanders | | Montgomery, Alabama. |
| Dr. C. T. Drennon | | Hot Springs, Arkansas. |
| Dr. Clarence E. Yount | ..... | Prescott, Arizona. |
| Dr. P. B. Carpenter | ..... | San Francisco, California. |
| Dr. Walter A. Jayne | ..... | Denver, Colorado. |
| Dr. Elias Pratt | ..... | Fordington, Connecticut. |
| Dr. Geo. N. Acker | ..... | District of Columbia. |
| Dr. J. D. Fernandez | ..... | Jacksonville, Florida. |
| Dr. F. M. Ridley | ..... | La Grange, Georgia. |
| Dr. L. P. McCalla | ..... | Indianapolis, Indiana. |
| Dr. A. E. Sterne | ..... | Indianapolis, Indiana. |
| Dr. B. F. Fortner | ..... | Winita, Indian Territory. |
| Dr. C. S. Bacon | ..... | Chicago, Illinois. |
| Dr. S. Bailey | ..... | Boise, Idaho. |
| Dr. Geo. K. Purvis | ..... | Wichita, Kansas. |
| Dr. C. Z. Ande | ..... | Cecilian, Kentucky. |
| Dr. Wm. M. Perkins | ..... | New Orleans, Louisiana. |
| Dr. Byron F. Barker | ..... | Bath, Maine. |
| Dr. John S. Fulton | ..... | Baltimore, Maryland. |
| Dr. S. D. Presbrey | ..... | Taunton, Massachusetts. |
| Dr. Flemming Carrow | ..... | Detroit, Michigan. |
| Dr. Arthur Sweeney | ..... | St. Paul, Minnesota. |
| Dr. B. L. Cully | ..... | Jackson, Mississippi. |
| Dr. F. J. Lutz | ..... | Kansas City, Missouri. |
| Dr. T. J. Murray | ..... | Butte, Montana. |
| Dr. A. S. von Mansfeldt | ..... | Ashland, Nebraska. |
| Dr. Geo. H. Thoma | ..... | Reno, Nevada. |
| Dr. Geo. Cook | ..... | Concord, New Hampshire. |
| Dr. L. M. Halsey | ..... | Williamstown, New Jersey. |
| Dr. G. W. Harrison | ..... | Bronx, New Mexico. |
| Dr. E. Elliott Harris | ..... | New York City, New York. |
| Dr. J. Howell Way | ..... | Waynesville, N. Carolina. |
| Dr. J. D. Taylor | ..... | Grand Forks, N. Dakota. |
| Dr. Chas. A. L. Reed | ..... | Chicago, Nebraska. |
| Dr. C. S. Babo | ..... | Norman, Oklahoma Territory. |
| Dr. Kenneth A. J. Mackenzie | ..... | Portland, Oregon. |
| Dr. Henry Beales | ..... | Philadelphia, Pennsylvania. |
| Dr. G. T. Swarts | ..... | Providence, Rhode Island. |
| Dr. O. B. Mayer | ..... | Newberry, S. Carolina. |
| Dr. R. C. Warner | ..... | Michelle, S. Dakota. |
| Dr. D. E. Nelson | ..... | Chattanooga, Tennessee. |
| Dr. J. T. Wilson | ..... | Sherman, Texas. |
| Dr. Henry La Motte | ..... | Salt Lake City, Utah. |
| Dr. B. T. Brady | ..... | Arlington, Virginia. |
| Dr. A. B. Bieshe | ..... | Montpelier, Vermont. |
| Dr. R. L. Thomson | ..... | Washington, D. C. |
| Dr. W. W. Golden | ..... | Elkins, W. Virginia. |
| Gilbert E. Seaman | ..... | Milwaukee, Wisconsin. |
| G. L. Strader | ..... | Cheyenne, Wyoming. |

† Surgeon-General Walter Wyman,
U. S. P. H. and M.-H. Ser., Washington, D. C.
Dr. R. A. Marmion,
U. S. Navy Medical Ser., Washington D. C.
† Surgeon-General H. M. O'Reilly,
U. S. Army Medical Ser., Washington, D. C.
* Deceased.
† Present.

William H. Welch and William L. Rodman of the National Legislative Committee; George H. Simmons, Chicago, Editor of THE JOURNAL A. M. A.; H. L. E. Johnson, resident trustee, Washington, D. C., and H. W. Wiley, chief of bureau of chemistry, Agricultural Department, were also present.

Dr. Reed announced that the work of the committees would be laid out at this session and that the committees could report on the following day. He also stated that calls of courtesy would be made on the President of the United States and on heads of the departments, senators and representatives, who had identified themselves with medical legislation. He then addressed the council as follows:

Address of Dr. Charles A. L. Reed on National Medical Legislation.

Medical legislation already pending before Congress is of the utmost importance to the public welfare, while other measures that are in contemplation are calculated still further to promote the agencies of the government created for the conservation of the life and health of the public. Some of these measures have already been brought to the attention of the Legislative Council and, through that body, to the attention of the profession and the public; but, in view of the fact that these same measures are now pending before a new congress, and in view of the fact that the personnel of the Legislative Council has largely changed, the National Legislative Committee has deemed it wise to submit them anew for your consideration.

THE ARMY MEDICAL REORGANIZATION BILL.

The Army Medical Reorganization Bill, which was considered by the former Legislative Council and which has been made the subject of referendum, is one in which the interests of the American medical profession are actively and earnestly centered.

It is to be remembered that the Army was reorganized by the act of Feb. 2, 1901, at which time Congress ignored the recommendations of the Surgeon-General with reference to the reorganization of the Medical Department. This failure on the part of the Congress amounted to a distinct discrimination against the medical department, whose proportionate increase in numbers was much less than that of the army in general. The incidental increases that were given to the Medical Corps were all of lower grades, as a result of which the prospects of promotion of medical officers were much less than those of any other staff corps. The logical result of this unjust discrimination was, first, the resignation of many able men from the service, and, second, the failure of the Army Medical Corps to attract desirable applicants for the vacancies which rapidly increased in number. To correct these defects the present Surgeon-General, through the General Staff, recommended amendatory legislation, by which the number of medical officers should be increased from 320 to 450, exclusive of the Surgeon-General; that the length of service required to secure promotion from the grade of first lieutenant to that of captain be reduced from 5 to 3 years; that examination be provided to determine the fitness for promotion up to and including the grade of colonel, and, finally, that a medical reserve corps be established, to consist of medical men who shall have been examined and, when found fit, commissioned without pay for service as medical officers, with a rank of first lieutenant, but, in case of war or other emergencies, to be subject to call with compensation pertaining to that rank.

The passage of this bill was urged by both Secretary Root and his successor, Secretary Taft, and was further recommended in a special message by President Roosevelt. The increase in number of the Medical Corps they hold is not excessive, while the reduction in the time of service necessary for promotion from first lieutenant to captain simply places the Army Medical Corps in this particular on a footing of equality with the most justly organized medical corps of the Navy. The increase in number of medical officers of the higher grades was simply a restoration of the order of things that existed before 1901, and is another instance in which the Medical Corps of the Army seeks to be placed on a footing equal with that of the Navy. The provision for examination for promotion up to and including the grade of colonel is simply a rational method of applying a wholesome stimulus to the intellectual activity of the corps, while the creation of a reserve corps is intended to do away with the universally condemned

system of contract surgeons, on which the regular Medical Department has been forced to depend for expansion in the presence of war or other emergencies.

It would seem, indeed, that a recapitulation of these facts, coupled with the demonstration that the proposed improvement will cost far less than the relative profits realized, would be all that is necessary to secure the approval of the measure by Congress. As a matter of fact the bill did pass the Senate in the last Congress and was reported favorably from the House Military Committee, but was excluded from consideration in the pressure of business in the closing hours of the short session.

An attempt has been made by the opponents of the measure in Congress to show that the proposed Army Medical Corps will interfere with the employment of medical officers of volunteers in time of war. This is not contemplated by the terms of the proposed measure and would not result in the event of its enactment.

The essential meaning of the Medical Reserve Corps is to furnish the Surgeon-General a reasonable basis of supply for medical services for the regular establishment and to furnish medical men thus employed a respectable military rank. At present the contract surgeon is a mere hireling, with absolutely no official status and no official authority. Under the proposed law he would be accorded a military rank that would give him a definite footing and command for him somewhat of the respect that is due to the representatives of a learned profession—a respect which, I regret to say, is not accorded to the contract surgeon under the existing order of things.

It is hoped that you will see your way clear simply to reaffirm the action of the previous Legislative Council and emphatically to memorialize Congress, urging the passage of this obviously just and salutary measure.

THE PURE FOOD AND DRUG BILL.

The Pure Food and Drug Bill, with the provisions of which you are already familiar and which was made the subject of a referendum to the medical profession by the previous Legislative Council, and which by that means received the unanimous support of the medical profession as represented in over 2,000 county organizations, is again brought to your attention at this time simply to launch it anew on the current of agitation throughout the profession. The bill was introduced into the House by the Committee on Foreign and Interstate Commerce and was passed early in the Fifty-seventh Congress by the House of Representatives by a very large majority. There was, however, no call for the "ayes" and "noes," in so far as I remember. It was laid before the Senate and was approved by the Senate Committee on Manufactures, but was never seriously considered by the Senate at all.

In the Fifty-eighth Congress the bill passed the House of Representatives early in the session by a vote of 201 "ayes" to 69 "noes." This was a very full vote, since the bill excited a great deal of interest and was adopted after two days' debate. It was laid before the Senate, approved with some amendments by the Senate Committee on Manufactures, was placed on the calendar, and after the holidays was taken up and made unfinished business. Judge Swayne, however, and the statehood bill took practically all of the time of the Senate until, finally, everything was out of the way and the bill came up for consideration, when a motion was made to displace it and take up the bill in regard to restoring cadets expelled from the naval academy. This motion received a majority vote, and so the Senate failed finally to consider the bill. Of course, the motion to take up the case of the cadets was made for the purpose of killing the bill and this succeeded. There is no doubt that the bill would have passed the Senate by a great majority if it had once reached the point of a vote.

It is probably unnecessary for you again to make it the subject of a general referendum, as the petitions and correspondence previously sent to Senator Heyburn are being utilized before the present Congress. It is important, however, that the medical profession, and, for that matter, the public, should be informed of the character of the opposition which was aroused by the measure before the last Congress. This opposition was active, insistent, persistent and, judging from the results of the conference, was effective. An analysis of the proceedings in committee showed that the antagonism was derived from the manufacturers of blended and otherwise adulterated liquors, from the fabricators of foodless foods, from importers of foods and medicines so worthless as to be denied a market in Europe where they are made, from the makers and purveyors of worthless or dangerous and enslaving drugs—interests which, in the aggregate, and judged by the character of their business, could not go clean-handed into

any court of justice or command an honest footing before any legislative committee or any legislative body in the country.

The interest of the medical profession in this measure is aroused from the special and intimate knowledge possessed by physicians of the influence of impure food on the public health, but more particularly of the disastrous results arising from the dispensing of medicines, many of which fall below the pharmaceutical standard. As a matter of fact while the pharmacopœia assumes to establish a certain standard of drugs there is at present no national law nor, so far as I am informed, any state law to enforce that standard. As a consequence manufacturing establishments, some of them enjoying a high-grade of commercial respectability, openly acknowledge that they manufacture pharmaceutical preparations of varying degrees of purity. They plead in extenuation that this is to meet the demands of the market. The better druggists—those enjoying a high-class trade—are presumed to dispense the purest of the preparations. Those located in middle-class localities take the second grade, while the lowest, or third grade, is sold to public health departments, hospitals and eleemosynary institutions and country drug stores, but more especially to country practitioners who dispense their own medicines. That there should be any but one grade, and that the highest grade of pharmaceutical preparations, is an idea so repugnant to every sense of honesty, decency and common humanity that the present situation becomes revolting. If, then, we go a step further and consider that class of copyrighted preparations that are dispensed by physicians—the so-called "professional proprietaries"—we discover that the trade interests are absolutely without other restraint than that which is presumed to come from the effects assumed or demonstrated of such medicaments on the patients to whom they are administered. In this class of remedies there is not even theoretically a pharmaceutical standard, save as it applies to the ingredients of compounds, and there is no law that will hold the manufacturers of such remedies to the standard which they assume to establish for themselves.

To meet this condition the American Medical Association has established a Council on Pharmacy and Chemistry, which is doing voluntarily in a purely advisory way what ought to be done by the national government—namely, analyzing and testing these preparations for the purpose of advising the medical profession, and, for that matter, the public, of their true character. It is obvious, however, that this movement, salutary as it is, can not be sufficiently far reaching to keep our interstate commerce from being loaded down with preparations, many of which are essentially fraudulent in character. Under these circumstances I feel that it is important that the council reaffirm its previous action, and by such means as it may select to express its high appreciation of the service which has already been rendered by Senator Heyburn, chairman of the Senate Committee on Manufactures, and by Mr. Hepburn, chairman of the House Committee on Interstate and Foreign Commerce, in endeavoring to secure the passage of these salutary laws.

NATIONAL INCORPORATION OF THE AMERICAN MEDICAL ASSOCIATION.

It will be remembered that, a few years ago, an agitation was started to secure a national charter for the American Medical Association, which was then and is now in operation under a charter issued by the state of Illinois. The reasons given for the proposed change were two, namely (1) that the Illinois charter made it necessary that all acts of the Association be to legal had to be either originally taken or subsequently ratified at a meeting held in that state; (2) that the Association was a national organization and ought, therefore, to have a national charter. A special committee was appointed in 1904 to procure the desired legislation by Congress. That committee at the Portland session filed a report of progress, from which it appears: (1) That a bill was framed providing for national incorporation with "power to transact business anywhere in the United States," and that, in spite of the fact that the subcommittee having it in charge held it to be unconstitutional, it was introduced and referred to the Committee on Judiciary; (2) that the Committee on Judiciary, holding with the subcommittee that the foregoing provision was unconstitutional, reported the bill back to the House so amended as to constitute the American Medical Association, "a body corporate and politic within the District of Columbia." (3) The original bill was introduced in the Senate, but was never reported from the Committee on Incorporation, to which it was referred. (4) The opinion of the Committee on Judiciary of the House that the original bill was unconstitutional was opposed by the opinion of a distinguished lawyer, who acted

as the adviser of the special committee and who had served as the chairman of that committee in a former congress. The report which was received and, after reference, adopted, contained the recommendation: "That the efforts to secure national incorporation of the American Medical Association be and are hereby continued and that the labors relating thereto become a part of the duty of the Committee on National Legislation and that these duties be no longer referred to a special committee appointed for that purpose."

On attempting the task thus imposed on it the National Legislative Committee finds itself embarrassed by the fact that the Trustees of the Association in their annual report, likewise presented at Portland, contained the following statement:

The Committee on National Incorporation presented to Congress a bill proposing to incorporate this Association with a national charter. The effort was futile. The bill was soon made to read in such a way as to limit its rights and privileges to the District of Columbia. . . . If through Congress a charter can be obtained limited to the District of Columbia only in its rights and privileges, subject to change at any time as may be dictated by a partisan Congress, then it would be better to leave the matter of incorporation alone. The property interests of the Association in the state of Illinois have now become too great to abandon our charter of incorporation in that state. Where our property interests are, there we should be domiciled. A home corporation, as a rule, gets more rights and privileges than does a foreign one. This is a matter to be viewed from a business stand-point alone. A District of Columbia charter will be no better than an Illinois charter, and would have to be registered as a foreign charter in that state, as would be the case with a charter granted by any state in the Union.

The foregoing recommendations by the Trustees, on the formal adoption of their report, became as much the expression of the House of Delegates as was the adoption of the report of the special Committee on National Incorporation. It thus happens that the National Legislative Committee is unable, from the record, to determine the wishes of the House of Delegates touching this matter. The situation is, furthermore, confused by representations made by the trustees directly to the National Legislative Committee to the effect: (1) That our property is in Chicago; (2) that we can best protect it as an Illinois corporation; (3) that a District of Columbia charter would make us a corporation foreign to the state in which our property is located; (4) that the present charter permits the Association "to carry on its business and have the annual session in any state in the union"; (5) that the dissolution of the Association under the present charter and its reorganization under a District of Columbia charter would entail complications dangerous to the welfare of the Association. In the dilemma created by the conflicting expressions of opinion by the House of Delegates, increased by the doubtful constitutionality of a national charter (assuming that such a thing is possible), emphasized by the undesirability of a charter limited to the District of Columbia, and still further confused by the questionable necessity for any change at all, the National Legislative Committee respectfully submits to you as its counsellors and advisers, whether or not it would be better to refer the matter back to the House of Delegates for more specific instructions coupling the reference with the recommendation that the movement be abandoned.

Certain new measures of more than usual importance are already under consideration. Two of them, emanating from the Department of the Interior, are local to the District of Columbia.

AMENDMENT TO THE LUNACY LAWS OF THE DISTRICT OF COLUMBIA.

The laws relating to the commitment and care of the insane in the District of Columbia are in certain particulars not only strikingly defective, but strikingly primitive. Thus commitment by a lay jury only after inquisition conducted in open court as now practiced is neither scientific, just nor humane, either to the patient or to the patient's friends and relatives. To remedy this evil, for an evil it is, it would seem a law is demanded which shall establish in the District of Columbia, just as the majority of states have established, the office of examiners in lunacy and prescribe their qualifications and duties and which shall furthermore provide that inquisitions by such examiners on lunacy may be conducted in chambers. To make such a course mandatory might theoretically lead to serious abuse and consequently to protect the personal rights of those alleged to be insane they, their friends, relatives or legal custodians ought to have the right to demand, and the court ought to have the authority to direct that proceedings be conducted in open session, but always before disinterested experts competent to exercise the most enlightened judgment on mental states. There should be some provision, too, whereby persons skilled in handling the insane, men for men and

women for women, should be designated as official custodians to conduct insane patients from their homes to court and from court to the hospital.

I lay before you a copy of the lunacy laws of the District of Columbia, a résumé of the laws of the different states relating to the commitment of the insane, and finally, a copy of the bill by which it is proposed to remedy the serious defects to which I have alluded. You are urged to give this question, with which, as medical men you are already familiar, that studious attention which will enable you to formulate safe and practicable recommendations for the consideration of Congress.

A LAW REGULATING THE TREATMENT OF INEBRIATES IN THE DISTRICT OF COLUMBIA.

Your attention is called to the fact that the laws and practices of the District of Columbia relating to inebriates is, likewise, far from satisfactory. At present inebriates are committed by proceedings obviously based on the theory that they are insane—at least the fact that they, like the insane, are committed after inquisition by jury in open court to a hospital established and conducted for the insane bears, out this theory. This, of course, is fundamentally and scientifically wrong. But assuming that the implied classification of such patients as insane were justified by the facts, the failure to commit them for a long enough time to subject them to successful treatment places the whole proceeding at variance with public policy. Thus, these cases as soon as they are sober, demand to be dismissed, and if this is denied, institute *habeas corpus* proceedings, with the result that they make such an appearance of physical health and mental soundness that they secure their discharge. The inevitable result of such premature discharge, before the physical conditions have been so far restored that the will power and the moral sense can reassert themselves, is a relapse into former habits. The final consequence is that the whole system, extensive enough, has a tendency to perpetuate rather than to curb inebriety. It is, however, the obvious duty of Congress to protect these victims of disease and, as far as possible, restore them to health. To this end you are invited to consider the terms of a measure by which inebriates in the District of Columbia may voluntarily commit themselves, or may be committed by court for a definite period, having possibly a maximum limit of one year.

THE REGULATION OF MEDICAL PRACTICE IN THE GOVERNMENT RESERVATION OF HOT SPRINGS, ARK.

In the early days of the country when Hot Springs, Ark., first became famous for its waters there were no laws, state or national, governing the practice of medicine. As a consequence this Mecca of invalids speedily became infested with many mere adventurers who, without professional qualifications, preyed on the public in the guise of physicians. Their numbers so increased that the struggle for existence, coupled with the spirit of rapacity, forced them to resort to the most dishonorable methods to secure patronage until no patient could be sent to Hot Springs with any assurance that he would reach the reputable physician to whom he had been accredited by his home attendant. The able physicians of the place were unable to protect themselves against this outrage until the government finally took over the springs and immediately adjacent territory as a reservation and placed its administration under the Secretary of the Interior. This officer sought to correct the evils of medical practice by executive order, in which "touting," "drumming" or "steering" patients was prohibited and by which a competent board of medical examiners was appointed to pass on the qualifications of practitioners. The disreputable element resisted this order, with the result that the court set it aside, declaring that it was without warrant of law, but adding significantly that Congress might enact such a law.

The matter is now brought to your attention by the effort of the organized medical profession of Arkansas to procure such legislation from Congress. It is important, therefore, to determine whether it is desirable to secure an act prescribing detailed provisions governing the practice of medicine on this reservation, or whether it is better simply to enlarge the powers of the Secretary of the Interior in the premises. Either means may accomplish the purpose. But something ought to be done to insure protection to the large public that annually visits this, the greatest natural sanatorium in the western hemisphere.

You are urged, therefore, to make some specific recommendations before the conclusion of our present conference.

A DEPARTMENT OF PUBLIC HEALTH WITH REPRESENTATION IN THE CABINET.

A measure to increase the powers and scope of the Public Health and Marine-Hospital service, more particularly with reference to giving it control of all coast and frontier quarantine, is in course of preparation. This step is the result of the recent disastrous epidemic of yellow fever in New Orleans, an epidemic that occurred, in the first instance, by a lack of such powers by the national health service, and that was controlled and promptly stamped out, in the second instance, by the scientific ability and superb executive force of that same service. The step is, however, the immediate result of one of the most remarkable and impressive conferences ever held in this country—a conference participated in by the governors of practically all of our southern seaboard states and of the states contiguous to them. This conference, held in Chattanooga, Nov. 9, 1905, unanimously requested Congress to enact a law placing coast maritime and national frontier quarantine exclusively under the control of the national government and to make necessary appropriations for a systematic campaign against the mosquito pest. The legislatures of different states were petitioned to enact laws as nearly as possible in conformity with the national measure asked for. In the meantime the American Medical Association, in July, had commended Congress for enlarging the powers of the national health service and took the following action:

Resolved, That the American Medical Association recommends to Congress that said service be aided in every proper manner in the prosecution of its important duties and that in its efforts to protect and improve the public health it be strengthened in any manner to promote its efficiency and character as the national health organization.

We are now called on to give effective expression to the sentiment of the national profession as indicated in this resolution. In doing so, however, it is important to consider not only the actual powers vested and to be vested in the national health service, but to take into the account the status that that service is now accorded and the status that ought to be accorded to it in our general scheme of government. It is not now accorded even the dignity of a bureau in charge of a commissioner, but, instead, is a service anomalous in organization and made subordinate to a department of the government to which it bears no more logical relation than it does to practically every other department of government. As a matter of fact the public health problems of this country are of strictly fundamental importance and underlie success in agriculture, manufacture, commerce and every other branch of human activity. This was shown in Cuba, where successful military operations depended on the work of the sanitary corps; it was shown in New Orleans, where the commerce of a city and of a great section of the country was paralyzed pending the suppression of an epidemic; it was and is being exemplified by the brilliant achievements of Colonel Gorgas in the Isthmus of Panama, where the gigantic operations of engineering stands at rest until successful sanitation makes their successful prosecution possible. The administrative machinery necessary to make effective a national public health service is already large, diverse and far reaching; but it is not yet as comprehensive as will be necessary when that service has been expanded to meet the actual demands of the country. Many bureaus, laboratories and other agencies conservative of the public health now exist in other departments of the government and either work at cross-purposes or unnecessarily and at considerable expense duplicate the work of each other. It is perfectly manifest that agencies of such importance ought to be correlated in a single department and that interests of such paramount importance ought to be distinctly and specifically represented in the supreme executive council of the country. These facts give further force to the declared policy of the American Medical Association, that the medical profession ought not to be placed in positions of responsibility without executive authority, subordinate only to that of the chief executive to control and determine results. The logical application of this principle found expression at the session of our national body held in this city as long as fourteen years ago, when a resolution was adopted calling for the organization of a department of public health, with representation in the cabinet of the President.

This question is now in the hands of the Committee on Legislation and is submitted to this conference for counsel and advice. It is suggested that in approaching the problem of creating a department of public health certain cardinal principles ought to be observed. The movement ought to be evolutionary rather than revolutionary, care being taken to conserve and expand rather than to hamper or disturb existing agencies. The national health-conserving agencies now scattered

throughout the governmental departments ought to be gathered into a single department with reference to both economy and efficiency. The scope and power of the department consistently with the exercise of the police power reserved to the several states ought to be greatly increased, particularly with reference to coast and frontier quarantine and sanitary control of interstate commerce and of all streams and waters under national jurisdiction. Facilities for hygienic research already established should be expanded, and a policy, both educational and executive, of the widest reaching influence ought to be inaugurated. These are but a few desultory observations, but they culminate in one of great importance, namely, that the movement ought to be undertaken with deliberation, care being taken to draft a proper law, after which there should be no pause until a Department of Public Health becomes an accomplished fact.

Committees Appointed.

Dr. von Mansfeldt moved that the subject matter of the chairman's address be divided up, distributing it to the different committees, and that the chairman and secretary help in the deliberations of the committees. Carried.

Dr. H. L. E. Johnson of Washington was then called on to present more in detail the matters referred to by the chairman concerning the subject of canteen legislation in the Army and also the bill for the relief of the widow of General Hammond.

Dr. Reed then announced committees as follows:

ARMY MEDICAL REORGANIZATION BILL: C. S. Bacon, S. Bailey, G. K. Furvis.
PURE FOOD AND DRUG BILL: A. S. von Mansfeldt, J. S. Fulton, S. D. Presbrey.

DEPARTMENT OF PUBLIC HEALTH: J. T. Wilson, C. Z. Aude, G. E. Seaman.

REGULATION OF MEDICAL PRACTICE AT HOT SPRINGS: W. H. Sanders, C. T. Drennan, O. B. Mayer.

HAMMOND, CANTEEN AND DISTRICT OF COLUMBIA BILLS: G. N. Acker, J. F. Fulton.

NATIONAL INCORPORATION OF THE AMERICAN MEDICAL ASSOCIATION: W. H. Welch, J. F. Fulton.

Dr. von Mansfeldt moved that Dr. Simmons, Secretary of the American Medical Association, be requested to serve on all committees.

The members were requested to meet at 9:30 Wednesday morning to make the calls of courtesy previously announced by the chairman. The session then adjourned to meet at 2 p. m. on Wednesday.

Second Session—Visits to Cabinet Officers and the President.

The members met promptly at 9:30 a. m., and proceeded to the War Department, where they were received by the Secretary of War, William H. Taft.

In the course of the interview that followed the Secretary of War emphasized the brilliant success and the continued importance of the sanitary administration on the Isthmus of Panama and invoked the assistance of the council and, through the council, that of the medical profession in maintaining the present scale of compensation paid to the sanitary department on the Isthmus. This schedule of salaries, he explained, was being antagonized in Congress. In his opinion the great value of the work being done by the sanitary corps justified the compensation that was now being paid. He spoke, furthermore, of the Army Medical Reorganization Bill and of the great importance of making it attractive to the highest grade of medical talent and of providing a reserve corps of competent men on whom the surgeon general could rely for expansion under emergencies, whether in war or peace.

The next visit was made to Mr. Hepburn, chairman of the House committee having in charge the Pure Food and Drug Bill known by his name. Mr. Hepburn explained to the committee many details of the campaign to secure the enactment of the bill, and dwelt in particular on the opposition that it had encountered.

Following the call on Mr. Hepburn the council went by invitation of the Secretary of War, Mr. Taft, to be present at the White House on the occasion of the presentation of a medal of honor to Captain James Robb Church of the Medical Corps for distinguished services in carrying wounded soldiers off the field in the midst of the battle of Las Guasimas.

Remarks of President Roosevelt.

At the conclusion of the ceremony the Secretary of War introduced the council to the President, who addressed them as follows:

I want to say just a word of greeting to you, and to ask your influence on behalf of the medical corps, not only of the army, but of the navy. There is not a more exacting profession; there is not a profession which makes greater demands on those following it, and which more entitles them to the gratitude of mankind than is the profession which is yours. The army surgeon has to combine the work of your profession with the work of the military men of the line. In saying that, I want to call your attention to two specific things; one that is now being done by the men of your profession, and one the need of men of your profession.

First, the thing that is being done: All the United States is the debtor to the medical men who have accomplished such remarkable work on the Isthmus of Panama. You hear very loose talk about making the dirt fly in Panama. Before making the dirt fly it was necessary to get the microbes under; it was necessary to grapple with the mosquitoes; necessary to eradicate disease.

That has been done to perfection. We have had the foundation laid for that wonderful piece of constructive engineering work, to dig the giant canal. Too much praise can not be given to those who have done this work in Panama. So much for tribute to your compers.

You recollect the complaint about hygienic conditions during the war with Spain. Complaint was made that the troops were not properly treated, etc. The blame rested not on any man then in office, but on our people as a whole, who had declined, through their representatives, to make provision long in advance for meeting such a need.

The Japanese have given us a good lesson in this, as in many other particulars, by the way they handled their army in the recent war. One of the reasons why their medical department did well—the main reason—was the fact that they had an ample supply of doctors who had been practiced in time of peace in doing the duties they would have to do in war. And until we have provision for an ample corps of doctors in the army so that they can be practiced in time of peace we will not have prepared, as we ought to prepare, for the possibilities of war. Until we thus prepare we can make up our minds that we are ourselves responsible for any disaster that occurs to any army that the United States may raise in the future, not the man who may be at the head of the army at the time. That is utterly unjust; and the people themselves and the representatives of the people in public life who have failed to provide the necessary means in advance—they are responsible when disaster comes. That applies to the Medical Department, and it applies to every other branch of the military establishment just as much.

Third Session—Report on Army Medical Bill.

The council met promptly at 2 p. m. The report on the Army Medical Reorganization Bill was presented by Dr. C. S. Bacon as follows:

The subcommittee on Army Medical Bill recommends to the National Legislative Committee the adoption of the following propositions:

1. The American Medical Association, through its National Legislative Council, reaffirms its support of the bill "to increase the efficiency of the medical department of the United States Army," and desires to express its deep conviction of the importance of this bill for the welfare of the Army of the United States.

2. It desires to express its appreciation of the interest shown in the advocacy of this measure by President Roosevelt, ex-Secretary of War Root, Secretary of War Taft and Surgeon-General O'Reilly, and its thanks to the Senate for the passage of the bill in the fifty-eighth session of Congress.

3. It recommends to the National Legislative Committee that further work with the congressmen be left to the discretion of the legislative committee.

4. It recommends the adoption of the following address to the Committee on Military Affairs of the House of Representatives:

There is widespread interest in the bill "To Increase the Efficiency of the Medical Department of the United States Army." Many medical societies from all parts of the country have taken the initiative in recommending action similar to that proposed by the bill, while the unanimous endorsement of the action of the Legislative Committee of the American Medical Association by the representatives of the profession in nearly all the counties of the United States shows that the physicians of the entire country believe that the measure is important and necessary.

Many of our physicians are more or less familiar with the objects and provisions of the bill, and so far as we know there has been a unanimous approval of its chief features, namely, the elimination of contract surgeons from the Army, the establishment of a Medical Reserve Corps, and the increase of the number of officers to encourage young physicians to enter the service of the Army.

Whether the bill drawn up two years ago by Surgeon-General O'Reilly is the best possible bill in all details we do not feel competent to judge, but his masterly presentation of the reasons for its various features in the memoranda which accompany the former bill inspires us with confidence that he understands the subject and knows what he wants, and that anyone of ordinary common sense and common sense of the medical profession is that the bill is too modest in its requirements and that a thoroughly efficient service may require a larger force than is provided for. In particular the Medical Reserve Corps should be fostered with care, and we hope that if any changes are made by the committee they will be in the line of increasing the efficiency of this corps.

Now why is there such a deep and general interest among physicians in this bill? This question would be a useless one if the committee of congress which is considering the measure was composed of physicians. As there are no members of the medical profession on the committee, however, it is probable that the point of view of the physicians is somewhat foreign to the committee and some consideration should be given to the influence of this erroneous ideas concerning the forces that may have influenced us.

The medical profession feels itself the natural protector of the health of the state. One important function of medicine has always been to prevent disease. In recent years this function has become to be more important than any other. The greatly increased interest in reports of boards of health and in vital statistics which show the causes of epidemics and of all other causes of sickness and death demands that the medical profession should be able to do more.

Necessary provision to guard against unhealthy conditions and epidemics of disease are obligatory and failure in forest and sanitary measures are medical crimes. An epidemic of smallpox or typhoid fever in a city is a disaster to the health of the city, and is shared by the whole medical profession of such a municipality. The public respect for the medical profession should fall if its public spirit and interest in the health of the community does not keep it awake and alert to the problems and make it earnest and efficient in its battling public danger.

In support of this proposition the history of the action of the medical profession in a number of communities could be cited. Unfortunately lack of organization of the profession in the past has made it impossible for it to exert that influence which by right belongs to it. The recent remarkable growth of organization in the medical profession in the United States has led it to feel its responsibility much more deeply.

This inherent interest in public health caused the profession to be most deeply moved and humiliated by the events of the Spanish war. The terrible epidemics of typhoid, quite unnecessary and avoidable, now when we know the cause of the disease and its modes of propagation, that led to the sacrifice of many lives and to the accumulation of thousands of cases of ill-health, made a deep impression on the physicians of the country.

All knew that there had been some great mistake that was responsible for these epidemics and one which should be discovered and remedied when found. When the Dodge Commission, appointed by President McKinley reported that one of the principal defects under which the medical department labored was a lack of trained surgeons of the regular medical corps and recommended an increase in their number, attention was called to the fundamental need of a medical department of an army. Viz, men trained in army sanitation and administrative detail. Civilian physicians, no matter how skilled in their own special field of work, can not at once take charge of the medical supervision of an army.

All know the proper selection and sanitary preparation of camp grounds with proper disposal of sewage and the prevention of infection of drinking water and food, as well as keeping track of patients by means of a system of records, are matters that require much preparation. Military medical practice is, indeed, a specialty, as much as any other medical specialty and a military specialist can not be created in a day or a month, any more than a great abdominal surgeon can be made in that time. In the emergency of war these specialists are of inestimable value.

When in the reorganization of the Army in 1901 the recommendation of the Dodge Commission was ignored, when the suggestions of the then Surgeon-General Sternberg were dismissed without a hearing and the Medical Department not only not increased but greatly reduced in efficiency, those who kept informed of the situation became very indignant. The situation of the medical profession. As the knowledge of the situation has gradually been disseminated during the last four years and as the condition of the Army in respect to sanitation has been brought into comparison with that of the medical profession, the situation of the medical profession if this condition is not remedied now after the need for it has been set forth so often by the General Staff of the Army, by the Secretary of War, the President of the United States and after it has been shown without contradiction that the medical profession of the country favor such action it seems likely that the interest of the physicians of the country will grow until they will want to know why their views on so important a subject should not be given consideration.

Those who oppose the bill make a variety of objections. Some of these are irrelevant; for example, it is said that the Army is already top-heavy, with the officers numbering one-sixteenth of the Army, as if too large a number of officers in other departments. If such an excess exists, was a reason for objecting to a proper number in the Medical Department. Also irrelevant is the petulant assertion that every Army Bill is simply one to increase the rank and pay of the officers. Aside from these there are about five objections that should be considered.

1. No change in the present law is necessary. The condition of the health of the Army is good, as shown by the annual report of the Secretary of War. Should war break out, the civilian physicians would be called upon to do the work of the medical corps. If contract surgeons are now employed, they have no certain authority even over the hospital corps. They are being constantly changed, they are not trained in their work, and much less officers, they are not in the line of the Army. In the event of war a corps of trained men is absolutely necessary properly to care for the sanitation of the Army.

2. The increase in the number of officers in the higher ranks is not necessary. Answer: The best quality of men can not be secured without adequate compensation. In the Army both rank and pay are regarded as compensations. The pay is not large enough to make up for a low rank. The pay, indeed, is determined by the rank. The restricting of the number of the higher prizes in the medical department as compared with those in other departments of the Army is unjust to the medical officers, as it is unjust to the medical profession.

3. The proposition to promote lieutenants in three years is not desirable. Answer: This is a detail best understood by the Surgeon-General, but in a general way the same answer can be given as to objection 2, namely, it is necessary as an inducement to obtain a medical corps of the proper quality and standing.

4. The plan of the reserve corps is not practicable, nor well thought out. Answer: What better plan can be proposed? Certainly not the contract system now in vogue, which every one condemns. The plan proposed is elastic and leaves much to development, and that is its good feature. It will probably and certainly lead to the organization of a fine body of men, who will keep informed of the essentials of the Army practice and who, through voluntary association will have a great influence in the improvement of the service. The Reserve Corps will not necessarily interfere with the medical corps of the national militia, but it will probably, have an important influence in developing and molding such a change in the military service as will benefit the national guard and to any emergency army of the United States.

5. The country is now spending more than it takes in. Under these conditions we can not increase the expense. Answer: The increase in expense will be but slight, because the change from the contract system will be a considerable saving. The change contemplated will require four years, and as the new members of the staff must spend some months in the Army Medical School, there will be practically no increase during the first year. Then the change is complete in four years, the deficiency in income should have disappeared. The cost is truly very little, for the great saving it will secure in life and health.

C. S. BACON, Chairman.

S. BAILEY.

G. K. PURVIS.

Report on the Pure Food and Drug Bill.

The report of the Committee on Pure Food and Drug Bill was presented by Dr. A. S. von Mansfelde, chairman of the committee, as follows:

Your committee appointed to consider legislation for honest foods and pure drugs begs leave to report that it has considered the suggestions of the chairman and has examined in detail the provisions of the Heyburn and Hepburn bills and finds nothing in these bills which, in the opinion of the members of the committee, would injuriously affect any legitimate business concerned in the manufacture and sale of foods, liquors or drugs, and that the bill would afford adequate protection to honest manufacturers of and dealers in such products and security against imposition, fraud or danger to the buyer.

Finally, your committee respectfully recommends that this legislative council lend its influence to the passage of the Hepburn and Heyburn bills and ask the profession at large to second the endeavor.

A. S. VON MANSFELDE, Chairman.

SILAS B. PRESBREY.

JOHN S. FULTON.

Dr. von Mansfelde, chairman of the committee, submitted the further recommendation that, in submitting the report of the council relative to the pure food and drug bill, to the committee of Congress, said report be accompanied by the section of the address by the chairman, Dr. Reed, relating to this subject.

Dr. H. W. Wiley, chief of the bureau of chemistry, Department of Agriculture, was on motion invited to address the council on the general subject of pure food and drug legislation. At the conclusion of his remarks the report of the committee was unanimously adopted.

Report on Department of Public Health.

The Committee on Department of Public Health submitted its report in the form of a preamble and resolution as follows:

WHEREAS, The medical profession, at the Portland Session of the American Medical Association, had good reason for endorsing the excellent work done by the Public Health and Marine-Hospital Service during the preceding ten years, has now better reason for asking for an amplification of its powers in view of the valuable services rendered commerce and the most vital interests of this country during the recent epidemic of yellow fever in the south and realizing that the national public health service should be placed on an independent basis. Therefore be it

Resolved, That it is the sense of the American Medical Association that a Department of Public Health, with representation in the cabinet of the President ought to be established, such department to embrace an expansion of the present Public Health and Marine-Hospital Service, with the addition of other public health agencies now existing and in operation in other departments of the government, together with such additional agencies and functions as may best subserve the public welfare.

Resolved, That the National Committee on Legislation be and is hereby instructed to proceed at once with the preparation of a bill for this purpose to be presented to Congress at the earliest practicable date, if possible during the present session.

Resolved, That the Trustees of the Association be and are hereby requested to appropriate one thousand dollars (\$1,000.00), or so much of the same as may be required to defray the expenses of the Committee on Legislation in employing a competent constitutional lawyer to draft a bill for a department of public health contemplated by these proceedings.

J. T. WILSON, Chairman.

C. Z. AUDE.

G. E. SEAMAN.

This report was adopted.

Anti-Nostrum Crusade Supported.

The chairman, Dr. Reed, called the attention of the council to the fact that the agitation long carried on by the medical profession against patent and secret proprietary medicines, had at last been taken up by two powerful periodicals, namely, the *Ladies' Home Journal* and *Collier's Weekly*, with the result that popular interest had been aroused as never before in this important subject. He felt, therefore, that it was due not only to these periodicals, but to the general public, that the co-operation of the medical profession should be made active and effective along the lines which, now that popular co-operation had been reasonably secured, promised something definite in the way of results. A letter from Mr. Edward Bok relating to this subject was then read, after which the chairman said that he would take the liberty of offering from the chair the following preamble and resolutions, which were adopted:

WHEREAS, The American Medical Association has long maintained the position that all proprietary remedies prepared and dispensed by the medical profession, to be entitled to confidence, must carry their respective formulae in all advertising matter, and,

WHEREAS, The same principle applies with even greater force in respect of drugs and medicines sold directly to the general public, therefore be it

Resolved, That the Committee on Legislation of the American Medical Association be and is hereby directed to bring the influence of the entire medical profession to bear in securing the enactment by the various state legislatures, of an act as nearly as possible uniform prescribing that all "patent" or "proprietary" medicines shall carry an exact formula of their contents plainly printed on each original package and make the contents conform to the formula.

Resolved, That the said committee memorialize Congress to enact a law which shall prescribe that all "patent" or "proprietary" medicines and all advertising matter relating to the same which shall fail to comply with the foregoing conditions shall be excluded from the United States mails and from interstate commerce.

Resolved, That the Committee on Legislation be and is hereby requested to take such other steps as it may deem necessary and expedient to limit the evil results arising from the consumption of drugs and remedies the contents of which are unknown.

Report of Committee on National Incorporation.

The committee to whom were referred the recommendations of the chairman of the Legislative Council concerning the question of national incorporation of the American Medical Association beg to report that they approve of these recommendations.

It seems to be practically certain, in view of the unsuccessful efforts of the special committee of the association to secure a truly national charter and of the weight of legal opinion, that the only form of charter which can be secured from Congress would be a District of Columbia charter, which would be no more national in character than the existing Illinois charter, and would offer no advantages over the latter; indeed, would be less beneficial, inasmuch as the property interests of the association are now located in the state granting the charter.

The committee, therefore, recommend that the Legislative Council advise the Legislative Committee to refer the question of a national charter back to the House of Delegates, with a statement which shall make clear the impracticability of securing a charter of a truly national character or any congressional charter which will be more advantageous to the association than a charter from the state where the property interests of the association are located.

WILLIAM H. WELCH, Chairman.

JOHN S. FULTON.

The report of the committee was unanimously adopted.

Report on Regulation of the Practice of Medicine at Hot Springs, Arkansas.

The committee to which was referred the consideration of the situation at Hot Springs, Ark., as respects the regulation of the practice of medicine, respectfully reports that the conditions existing are as follows:

Two jurisdictions exist side by side, one that of the general government over the grounds occupied by the springs, called the Reservation; the other that of the State of Arkansas over the surrounding territory, occupied by the municipality of Hot Springs.

The State of Arkansas has enacted a law regulating the practice of medicine in the state, which law, of course, applies to the city of Hot Springs. The United States Congress has authorized the Secretary of the Interior to establish rules regulating the privilege of using the waters, both of which are intended to prevent illegal practitioners of medicine from pursuing their vocation. The law of the state and the rules established by the Secretary of the Interior have both been assailed in the courts, the cases are now pending, decisions will sooner or later be reached in both cases, and in the event of the law of the state and the rules promulgated by the Secretary of the Interior being upheld all legislation necessary to suppress the evil will have been achieved.

The committee, therefore, recommends that the medical profession of the United States use its influence to uphold both the law and rules, and also recommends that a vote of thanks be extended to Secretary Hitchcock for the wise and vigorous position he has maintained in regard to this matter.

W. H. SANDERS, Chairman.
C. TRAVIS DRENNEN,
O. B. MAYER.

This report was adopted.

Report on Bill for the Relief of Mrs. William A. Hammond.

Your committee has carefully considered this bill (Senate 290), introduced by Mr. Elkins, entitled "A Bill to Amend the Act Approved March 15, 1878, entitled 'An Act for the Relief of William A. Hammond, late Surgeon-General of the Army,'" and recommends its approval by Congress.

JOHN S. FULTON, Chairman.
GEORGE N. ACKER.

This report was also adopted.

Report on Bill to Restore the Canteen in the Army.

Your committee finds that the bill to restore the canteen in the army occurs as a House measure (H. R. 8433), introduced by Mr. Morrell, entitled "A Bill to Repeal Section Thirty-eight of 'An Act Entitled an Act to Increase the Efficiency of the Permanent Military Establishment of the United States,' Approved Feb. 2, 1901, and for Other Purposes," is in the following language:

WHEREAS, The Secretary of War has submitted a report on the operation of this law, which shows that its effect has been to increase drunkenness, disease, insubordination, and desertion, moral and physical degeneration; and

WHEREAS, The present Chief of Staff, in his report for this year all of the generals in the service except two, all of the ten colonels of the cavalry, all of the seven colonels of the artillery, all of the forty-nine colonels of the infantry save one, and five hundred and four out of five hundred and sixteen commanding officers of companies, batteries and troops, for one reason or another, are opposed to the law; and

WHEREAS, The testimony of 90 per centum of those who in command of posts have expressed a positive opinion is that the law has increased drunkenness, desertion, absence without leave, and trials by court martial; ninety-five per centum saying that the condition of health has deteriorated, and all agreeing that morality and discipline have been injuriously affected; and

WHEREAS, The present Chief of Staff, in his report for this year just published, calls attention to the reports of the division and department commanders, nearly all of whom agree as to the bad results which have followed the passage of the law: Now, therefore,

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section thirty-eight of an Act entitled "An Act to Increase the efficiency of the permanent military establishment of the United States," approved Feb. 2, 1901, be, and the same is hereby repealed.

Sec. 2. That this Act shall take effect from and after its passage.

For the reasons set forth in the preamble to the foregoing bill, the bill itself is recommended for passage.

JOHN S. FULTON, Chairman.
GEORGE N. ACKER.

This report was also adopted.

Report on Government Recognition of the Services of Dr.

James Carroll.

Dr. John S. Fulton, of Maryland, introduced the following:

WHEREAS, In the year of our Lord nineteen hundred, a Yellow Fever Commission was appointed by the Army of the United States to investigate the causes of yellow fever and to devise means for its eradication, the said Yellow Fever Commission consisting of Dr. Walter Reed, surgeon in the Army of the United States, Dr. James Carroll, Dr. Jesse Lazear and Dr. Aristides Agramonte, and

WHEREAS, The said Yellow Fever Commission, consisting of Dr. Walter Reed, Dr. James Carroll and Dr. Aristides Agramonte

(Dr. Jesse Lazear, deceased), did then and there determine the cause of yellow fever, and devise means for its prevention, by which means yellow fever was eradicated from Havana and Cuba, and thousands of lives have been saved in the United States and other parts of the Western Hemisphere; and

WHEREAS, Dr. Jesse Lazear, an acting assistant surgeon in the Army of the United States, did subject himself to the bite of an infected mosquito, from which bite Dr. Jesse Lazear suffered death; and

WHEREAS, Dr. James Carroll, an assistant surgeon in the Army of the United States, did subject himself to the bite of a mosquito infected with yellow fever, and suffered a grave and almost fatal attack of yellow fever, being the first attack ever experimentally produced; be it

Resolved, That the National Legislative Council of the American Medical Association expresses its appreciation of the valuable work accomplished by the Yellow Fever Commission in the interest of humanity, the material and bodily welfare of the people and of the Army of the United States, and of the heroism and devotion of the aforesaid Major Walter Reed (deceased), Dr. James Carroll, Dr. Aristides Agramonte and Dr. Jesse Lazear (deceased); and be it further

Resolved, That this Council commend to the Government of the United States adequate recognition of the gallant and meritorious services of the said Dr. James Carroll, the only surviving member in the Army of the United States of the said Yellow Fever Commission.

This report was unanimously adopted by a standing vote.

Report on Government Regulation of Indigent Consumptives.

Dr. J. T. Wilson of Texas presented the following preamble and resolutions, which were adopted:

WHEREAS, The wandering indigent consumptives who seek relief from change of climate, go from state to state, without friends and without means become a burden, filling poor-houses, hospitals, and cheap boarding-houses, but of greatest interest by being a menace to public health in scattering the germs of tuberculosis wherever they go; therefore be it

Resolved, That the Committee on National Legislation take the matter under advisement looking to the passage of a law by which these people should be placed under national control for the protection of the public.

Resolved, That this committee take further action in an effort to have the government establish institutions for the care and treatment of indigent consumptives and thus subserve a great humanitarian purpose.

Fourth Session—Visits to Government Offices.

The council met at the capital at 10 a. m., Thursday, January 11, and waited in a body on Hon. W. B. Heyburn, United States Senator from Idaho, to whom they expressed their high appreciation of his services in endeavoring to secure pure food and drug legislation for the country.

At 10:30 a. m. the council appeared before the House Committee on Military Affairs, consisting of:

REPUBLICANS.

| | | |
|--------------------------------|----------------|---------------------|
| 1. Hull, John A. T., Chairman. | 7th District, | Des Moines, Iowa. |
| 2. Ketcham, John H. | 21st District, | Dover Plains, N. Y. |
| 3. Parker, R. W. | 7th District, | Newark, N. J. |
| 4. Appron, A. B. | 2d District, | San Antonio, Texas. |
| 5. Pringle, G. W. | 15th District, | Galesburg, Ill. |
| 6. Holliday, E. S. | 5th District, | Brazil, Ind. |
| 7. Yonng, H. O. | 12th District, | Ispsheiming, Mich. |
| 8. Patterson, T. R. | 12th District, | Ashland, Pa. |
| 9. Kahn, Julius | 4th District, | San Francisco, Cal. |
| 10. Fletcher, Loren | 5th District, | Minneapolis, Minn. |
| 11. Dawes, B. G. | 15th District, | Marletta, Ohio. |
| 12. Miller, James M. | 4th District, | Council Grove, Kan. |
| McGuire, B. S. | | Oklahoma Territory. |

DEMOCRATS.

| | | |
|-----------------------|----------------|---------------------|
| 13. Sulzer, William | 10th District, | New York, N. Y. |
| 14. Hay, James | 7th District, | Madison, Va. |
| 15. Sladden, James | 14th District, | San Antonio, Texas. |
| 16. Broussard, R. F. | 3rd District, | New Iberia, La. |
| 17. Talbott, J. F. C. | 2d District, | Towson, Md. |
| 18. Wiley, A. A. | 2d District, | Montgomery, Ala. |

* New members of the committee.

The chairman, Dr. Reed, explained the mechanism by which the medical profession of the United States arrives at a consensus on public questions, and presented its verbal but unanimous petition for the passage of the Army Medical Reorganization Bill (then before the House).

Dr. C. S. Bacon (Illinois) presented the formal report of the National Legislative Council.

Remarks were made by Drs. William H. Welch (Maryland), A. S. von Mansfelde (Nebraska), and G. E. Seaman (Wisconsin). After numerous questions had been asked by the members of the committee and answered by members of the council, the latter withdrew.

Visits of courtesy to the Secretary of Agriculture, Mr. Wilson, and to the Secretary of the Interior, Mr. Hitchcock, closed the session.

C. S. BACON, Secretary.

Approved.

CHARLES A. L. REED, Chairman.

State Boards of Registration

COMING EXAMINATIONS.

New York State Boards of Medical Examiners, Albany, January 30-February 2. Secretary, Charles F. Wheelock, Albany.

NEBRASKA State Board of Health, State House, Lincoln, February 7-8. Secretary, George H. Brush, Beatrice.

Personal.—Dr. E. L. Godfrey of Camden, Secretary of the State Board of Medical Examiners, who was granted leave of absence recently, has had an attack of appendicitis but has been operated on successfully.

Reorganization of the Wisconsin Board.—Dr. A. P. Andrus was elected president, and Dr. J. V. Stevens, secretary, of the Board of Medical Examiners, taking the places of Dr. J. R. Currens and Dr. Vilp Forsbeck, the retiring president and secretary. Two new members have been appointed on the board. Dr. P. H. McGovern and Dr. M. A. Barndt, both of Milwaukee.

Wisconsin's New Law.—Dr. J. V. Stevens, secretary of the Wisconsin State Board of Medical Examiners, sends us a copy of the law recently enacted by the legislature of Wisconsin. It is given entire as follows:

A bill empowering and requiring the Wisconsin State Board of Medical Examiners to refuse to grant licenses or certificates of registration to persons guilty of immoral, dishonorable or unprofessional conduct, and empowering the courts to revoke and annul any license or certificate issued to any person guilty of immoral, dishonorable or unprofessional conduct or fraud or perjury in connection with obtaining such license or certificate, or through error.

SECTION 1. It is hereby made the duty of the Wisconsin State Board of Medical Examiners to refuse to license or grant a certificate of registration to any person guilty of immoral, dishonorable or unprofessional conduct. The circuit courts of this state are hereby vested with jurisdiction and power to revoke and annul any license or certificate of registration which has been heretofore or which may be hereafter issued to any person to practice medicine or surgery, or osteopathy in this state, who is guilty of immoral, dishonorable or unprofessional conduct, or who has procured such license or certificate of registration by fraud or perjury, or where the same was obtained through error. On a verified complaint in writing being made by any person, to the district attorney of any county, charging any person holding such license or certificate with having, in said county, been guilty of any immoral, dishonorable or unprofessional conduct, as defined in this act, or with having procured such license or certificate of registration by fraud or perjury, or error, said district attorney shall commence and prosecute an action in the circuit court of said county, against the person so complained against, to revoke and annul such license or certificate of such person. Such action shall be commenced and prosecuted as a civil action in the name of the state of Wisconsin as plaintiff, and against such person complained against as defendant, and the rules of pleading, evidence and practice in civil actions in the circuit court shall be applicable thereto, and either party may appeal from the circuit court to the supreme court as in other civil actions. Either party in said action may demand a jury trial, and the defendant shall have the right to be represented by counsel, and the court may permit counsel to assist the district attorney in the prosecution of such action. The costs of such prosecution shall be paid by the county in which said action is brought. If, on the trial of such action, the court finds, or the jury returns a verdict in favor of the plaintiff, judgment shall be rendered revoking and annulling such license and certificate of the defendant, and the clerk of the circuit court shall forthwith cause a certified copy of such judgment to be sent to the Secretary of the Wisconsin State Board of Medical Examiners to be filed for record in the office of said Secretary. Any person whose license or certificate has been revoked under the provisions of this act, who shall thereafter practice, or offer or attempt to practice medicine, surgery or osteopathy in this state, or who shall be punished in Chapter 436 of the Laws of 1903. No person shall be excused or privileged from testifying fully under oath or producing evidence documentary or otherwise, in any action, proceedings or examination brought under the provisions of this act, but no person shall be prosecuted or subjected to any penalty for or on account of any transaction, matter or thing, concerning which such person may so testify or produce evidence, documentary or otherwise, except for perjury committed in giving such testimony. If the court before which the trial is had shall determine that the complaint made to the district attorney was wilful and malicious and without probable cause, it shall enter judgment against the person making such complaint for the costs of such action, and judgment of the same may be enforced by execution against the body of such complainant as in tort actions.

SEC. 2. The words "immoral, dishonorable or unprofessional conduct" as used in Section 1 of this act are hereby declared to mean: First, procuring, aiding or abetting a criminal abortion; second, either in his own name or in the name of another person, firm, association or corporation, in any newspaper, pamphlet or other written or printed paper or document, in any obscene manner or in a manner derogatory to good morals, the advertisement of any medicine or any means whereby the monthly periods of women can be regulated or the menses re-established, if suppressed, or being employed by or in the service of any person, firm or association or corporation, to advertise or third, the obtaining of any fee on the assurance that a manifestly incurable disease can be permanently cured; fourth, wilfully betraying a professional secret; fifth, indulging in the drug habit; sixth, conviction of any offense involving moral turpitude.

SEC. 3. This act shall take effect and be in force from and after its passage and publication.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending January 13, 1906:

Allen, John H., asst.-surgeon, granted twenty days leave of absence.

Kilbourne, E. D., asst.-surgeon, left Army General Hospital, Presidio, of San Francisco, Cal., on thirty days' leave of absence.

Huntington, P. H., asst.-surgeon, ordered, on arrival at San Francisco, Cal., to proceed at once to Fort Rosecrans, Cal., for station.

Barney, Charles N., asst.-surgeon, reports for treatment at General Hospital, Fort Bayard, N. M.

Thompson, George H., contract surgeon, relieved from duty in the Philippines Division, and ordered to sail February 15 from Manila, P. I., for San Francisco, Cal., there to receive further orders.

Waddell, Ralph W., dental surgeon, left Fort Mackenzie, Wyo., for duty at Fort Washakie, Wyo.

Mason, George L., dental surgeon, left Fort Fremont, S. C., and arrived at Fort Moultrie, S. C., for duty.

Whinnery, Jean C., dental surgeon, returned to Vancouver Barracks, Wash., from leave of absence.

Wolven, F. Homer, dental surgeon, returned to Fort McKinley, Maine, from leave of absence.

Carpenter, Alden, dental surgeon, left Vancouver Barracks, Wash., on leave of absence for one month.

Relftz, Hugo C., dental surgeon, left Fort Sheridan, Ill., on leave of absence for twelve days.

Newlove, George, contract surgeon, leave of absence extended fifteen days; at expiration of leave, proceed to New York City for duty as surgeon of the transport *McClellan* on its next voyage to Manila, P. I.

Kennedy, James S., contract surgeon, returned to Fort Omaha, Neb., from leave of absence.

Low, John S., contract surgeon, sailed from San Francisco, Cal., for Manila, P. I., on the transport *Thames*, after leave of absence in the United States.

Ryers, Caspar R., contract surgeon, returned from Fort McIntosh, Tex., to duty at station, Fort Sam Houston, Tex.

Macy, Fred S., contract surgeon, ordered to accompany B., 9th Infantry, from Allegheny Arsenal, Pa., to Fort Porter, N. Y.; to accompany the 1st Infantry thence to New York City, and there report for further orders.

Dickenson, Clarence F., contract surgeon, relieved at Fort Logan, Colo., and directed to accompany the 2d Infantry to Philippine service.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending January 13:

Leach, P., surgeon, detached from the *Massachusetts*, when placed out of commission, and ordered to the *Indiana*.

Angwin, A. A., asst.-surgeon, detached from the *Massachusetts* when placed out of commission, and ordered to the *Indiana*.

Schetky, L. O., pharmacist, ordered to the Naval Hospital, Norfolk, Va.

Blanchard, T. C., acting asst.-surgeon, detached from the *Franklin*, ordered home, and granted leave until expiration of appointment as acting assistant surgeon, January 23.

Curtis, E. E., acting asst.-surgeon, ordered to the *Franklin*.

McMurdo, P. F., acting asst.-surgeon, detached from the *Franklin*, ordered home, and granted leave until expiration of appointment as acting assistant surgeon, January 23.

Miller, J. T., acting asst.-surgeon, ordered to the *Franklin*, January 15.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending January 10:

Wasdin, Eugene, surgeon, leave of absence granted for one month from Dec. 15, 1905, amended so as to be effective from Dec. 17, 1905.

Carlington, P. M., surgeon, directed to proceed to El Paso, Tex., for special temporary duty.

Nydegger, J. A., P. A. surgeon, granted leave of absence for one day, January 2.

Spencer, E. P., P. A. surgeon, relieved from duty at Ellis Island, N. Y., and directed to proceed to Cape Fear Quarantine Station and assume command of the service.

Goldherzer, Joseph, P. A. Surgeon, relieved from special temporary duty at New Orleans, and directed to rejoin his station in Washington.

Earle, E. H., P. A. surgeon, granted leave of absence for four months from February 4.

McKean, F. E., P. A. surgeon, relieved from duty at Tanapa Bay Quarantine and directed to proceed to San Francisco, Cal., and report to the medical officer in command for duty and assignment to quarters.

McKean, F. E., asst.-surgeon, relieved from duty at New Orleans, La., and directed to proceed to San Francisco Quarantine Station, reporting to the medical officer in command for duty and assignment to quarters.

Spencer, E. E., asst.-surgeon, relieved from duty at Louisville, Ky., and from temporary duty at Gulf Quarantine Station, Miss., and directed to proceed to Mobile, Ala., assuming temporary charge of the service at that port.

Quinn, M. C., asst.-surgeon, relieved from duty at Cape Fear Quarantine Station, and directed to proceed to New York and report to Surgeon Storer, Ellis Island, N. Y., for duty.

Bean, L. C., acting asst.-surgeon, granted leave of absence for two days from January 8.

BOARDS CONVENED.

Board convened to meet at Boston, Mass., for the physical examination of an Inspector in the Immigration Service. Detail for

the board: Surgeon R. M. Woodward, chairman; Acting Asst.-Surgeon F. H. Cleaves, recorder.
Board convened to meet in Philadelphia, Pa., Jan. 9, 1906, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon F. Irwin, chairman; Assistant Surgeon H. McG. Robertson, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended, January 12:

SMALLPOX—UNITED STATES.

District of Columbia: Washington, Dec. 31-Jan. 6, 4 cases.
Florida: Jacksonville, Dec. 31-Jan. 6, 6 cases; Mayo, 3 cases; Newberry, 2 cases.
Louisiana: New Orleans, Dec. 31-Jan. 6, 2 cases.
Maryland: Baltimore, Dec. 31-Jan. 6, 6 cases.
Missouri: St. Louis, Dec. 24-Jan. 6, 2 cases.
Virginia: Norfolk, Jan. 3, 45 cases (5 in city and 40 on Craney Island).
Wisconsin: Appleton, Dec. 31-Jan. 6, 3 cases.

SMALLPOX—FOREIGN.

Brazil: Bahia, Nov. 25-Dec. 9, 39 cases, 1 death; Rio de Janeiro, Nov. 20-Dec. 3, 15 cases, 11 deaths.
Ecuador: Guayaquil, Dec. 3-10, 2 deaths.
France: Paris, Dec. 16-29, 19 cases, 1 death.
India: Calcutta, Nov. 25-Dec. 3, 6 deaths; Karachi, Dec. 3-10, 1 case; Madras, Dec. 2-8, 3 deaths.
Italy: Messina, Dec. 9-16, 1 case.
Mexico: City of Mexico, Dec. 8-16, 4 cases, 2 deaths; Tuxpam, Dec. 26-Jan. 2, 2 deaths.
Russia: Odessa, Nov. 11-18, 19 cases, 1 death.
Turkey: Constantinople, Dec. 3-10, 3 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, Nov. 20-Dec. 3, 4 cases, 2 deaths; Sao Paulo, Nov. 5-12, 1 death.
Columbia: Barranquilla, Nov. 27-Dec. 4, 6 cases, 4 deaths; Cartagena, Dec. 16-29, 1 case, 1 death.
Cuba: Habana, Jan. 1-4, 1 case, 1 death.
Ecuador: Guayaquil, Dec. 3-10, 4 cases.
Mexico: Merida, Dec. 24-30, 2 cases; Vera Cruz, 1 case, 1 death.

CHOLERA—FOREIGN.

India: Bombay, Dec. 5-12, 1 death; Calcutta, Nov. 25-Dec. 2, 1-2 deaths.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Nov. 20-Dec. 3, 43 cases, 18 deaths.
India: General, Nov. 4-11, 3,611 cases, 2,760 deaths; Bombay, Dec. 5-12, 15 deaths; Calcutta, Nov. 25-Dec. 2, 20 deaths; Karachi, Dec. 3-10, 5 cases, 5 deaths.
Russia: Government of Astrakhan, Nov. 19-Dec. 3, 680 cases, 651 deaths.

Medical Organization

What Can the County Society Do?

IV. CLINICAL MEETINGS.

Wherever they have been thoroughly tried, clinical meetings, as contrasted with meetings given over to the reading and discussion of essays, have proved both popular and instructive. Members will come out to see interesting cases when too tired to feel interested in any one's paper. Cases are always interesting, no matter how commonplace they seem, if they are well worked up and briefly and concisely presented. The methods of physical diagnosis are in this way tried and perfected, and the relative merits of different modes of treatment are discussed. If the county has a hospital an occasional meeting should be held in it and the cases used for study and demonstration.

V. BUSINESS MEETING.

If the society meets weekly or bi-monthly, there may profitably be one or two meetings a year given over to "business." This would include consideration of fees and collections, of drug-store prescribing and substitution, expert testimony in court, consultations, contract practice, legislation, quackery, the hospital and dispensary evil, and, not least, methods of advancing the members and prestige of the organization.

VI. CONSULTATIONS.

Probably no one phase of professional life has given rise to more misunderstanding and bickering than the matter of consultations. Out of this little matter of conduct grew the great schism that some twenty years ago rent the American Medical Association, and only now is the breach at last closed by the reunion in New York. It is a rare village in the union where there is not or has not been a medical quarrel arising in a consultation. In nine cases out of ten the quarrel arose be-

cause the patient or his friends either deliberately or unwittingly placed a false construction on some remark of one of the consultants, but the doctors on that account disagreed none the less bitterly. One of the chief objects of a county society is to promote such a feeling of good-fellowship among the physicians that little gossiping misstatements will be smiled away in confident trust of a brother physician's honor. And so it is a wise plan at one or more meetings frankly and squarely to discuss consultations. The text of the discussion can be drawn from Article III of the "Principles of Ethics" of the American Medical Association, and the illustrations from the experience of every member. The discussion should be guided through this thorny subject in such a way as to give each member a clear idea of the best methods to be followed in calling and conducting consultations. The members can agree among themselves as to just what forms shall be adopted as necessary to the local circumstances.

(To be continued.)

Society Proceedings

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting, held Dec. 27, 1905.

The president, DR. JAMES M. ANDERS, in the Chair.

The Nostrum Evil.

DR. ALBERT P. FRANCINE outlined the development of the reform against the nostrum evil which, he said, had reached the high water mark in the action of the American Medical Association in creating a Council on Pharmacy and Chemistry. He said that one hundred million dollars was spent by the public in a year in the purchase of patent medicines, of which forty million goes to the newspapers. Within the past year nine county medical societies have taken action and the crusade has been prosecuted vigorously by two notable lay journals, *Collier's Weekly* and the *Ladies' Home Journal*. He said that the medical journals, with a few gratifying exceptions, are as badly hoodwinked by the so-called ethical concerns as is the lay press by the quack nostrums. He instanced two government agencies as lending themselves to the purposes of the patent medicine venders. The Patent Office issues to them trademark registration without inquiring into the nature of the article thus safeguarded against imitation. The Postoffice Department permits them the use of the mails. He feels that the onus of the responsibility in the widespread use of these nostrums must rest, at least, indirectly with the medical profession.

With reference to the so-called ethical preparations, he said there is technically no difference between the proprietary medicines manufactured for the physicians' use and the patent medicines exploited to the public. In theory they reflect the advance made in pharmaceutical science; in fact, taking the greater number as criteria, they discredit pharmaceutical science. For the solution of the difficulty he made the following suggestions: There should be eliminated from the medical journals all advertisements of proprietary medicines of unknown formula, or those not sanctioned by the Council on Pharmacy and Chemistry of the American Medical Association. Physicians should never, under any circumstances, prescribe these mixtures or give testimonials. Medical schools should give their graduates a wider and more thorough knowledge of compounding and prescribing drugs. United action should be taken by medical organizations in the adoption of resolutions condemning this abuse, and in the appointment of committees to visit lay editors and publishers and urge on them the elimination of these advertisements from their columns. He believes that if the newspapers and lay journals could be brought to see the wrong they are committing by publishing advertisements of nostrums, legislation would become of secondary importance. Pending the awakening of the journalistic conscience, he believes legislation to be the most obvious remedy. State laws should be enacted to supplement the contemplated action of the federal government. He be-

lieves that the campaign of publicity and education should be vigorously carried forward so that the true nature and composition of these nostrums shall become public and common property.

The "Patent Medicine" and Secret Nostrum Evils.

DR. JAMES M. ANDERS read a paper which will appear in *THE JOURNAL*.

The Elimination of the Nostrum Traffic, an Evident Duty of American Physicians.

MR. M. I. WILBERT's paper on the above subject will appear in *THE JOURNAL*.

DISCUSSION.

DR. S. SOLIS COHEN spoke of the inauguration of the movement against the nostrum evil by the Philadelphia County Medical Society in 1892. These resolutions, Dr. Cohen said, had grown out of an experience of his own with a patient, the proprietor of a very influential newspaper in Philadelphia, who, when spoken to about his advertisements of nostrums, said: "Clean your own house, and then come to me." On further looking into the question, the same character of advertisements were found in several leading medical journals. Reference was made to the great improvement made in this respect in the pages of *THE JOURNAL* of the American Medical Association, and of the assurance that ultimately the work would be completed.

He thought a distinction should be made between "patent medicines" and "patented medicines," and instanced Lydia Pinkham's preparations as "patent medicines," but not "patented." Antipyrin was, but is no longer, a patented preparation, because the patent has expired. Antipyrin and phenacetin were mentioned as "patented" remedies which might with propriety be prescribed in suitable cases. "Patent medicines" he designated as purely nostrums, secret preparations advertised to the laity and for which unfounded curative virtues are claimed. The so-called "ethical proprietary" remedies are not ethical, because they are secret. The synthetic remedies are in an entirely different class, being of definite chemical composition which will respond to recognized tests for identity, quality and purity. These, he said, might be called "ethical remedies," but the so-called "ethical proprietaries" form another class. He thought there is a certain definite limited field for the class of proprietary remedies of known and definite composition, which are made up with peculiar pharmaceutical skill; that there is also a very definite place for the synthetic remedies of definite chemical composition subject to definite chemical tests for identity and purity. The patent medicines, however, and the secret remedies advertised to the profession no self-respecting physician can possibly use. He recognizes the power exercised by the money interests of the advertisements and that the principal fight must be with the power exercised over the medical press. If the members of the profession confine their subscriptions and articles to those journals which have perfectly clean columns, all the other medical journals will fall into line. He favors the passage of resolutions approving the stand taken by the president and officers of the American Medical Association, and offering a vote of thanks to the Council on Pharmacy and Chemistry and pledging the support of the society.

DR. ALFRED STENGEL agreed with Dr. Cohen in the idea of withholding subscriptions or articles from journals advertising such nostrums as are excluded from *THE JOURNAL* of the American Medical Association. He said that due credit should be given to Mr. Bok of the *Ladies' Home Journal* and to Mr. Adams of *Collier's Weekly* for having taken the initiative in this matter. He feels also that the profession should aid in this further exploitation through lay journals. He agreed that there are a certain number of proprietary preparations which owe their value to the efficiency of the chemist or to the method of preparation, and that this method of preparation can be patented, and the remedy will then become an entirely ethical proprietary remedy. The difficulty lies in deciding where the line should be drawn. Before such preparations can become ethical their exact formula should be printed.

Relative to secret remedies, he said there can be no question

where the profession should stand; how any one can prescribe for a sick person a remedy, the composition of which he does not know, is incomprehensible. He believes the cause of the extraordinary use of nostrums is largely the delinquency of the medical profession, shown in indifferent study and careless diagnosis; and that a greater respect for the profession of medicine as a scientific calling, a more decided attempt to ascertain the real cause of pathologic conditions, and a greater desire to be candid and honest when conditions are not solved, would insure a greater respect on the part of the public toward the profession and a tendency to accept medical judgment rather than to dose themselves with anything happening to fall under their notice. He felt that every physician in the country, certainly every member of the American Medical Association, should read the publications of the Council on Pharmacy and Chemistry when that Council shall have become operative. He believes that then physicians will give more consideration to the older remedies and not be so ready to take up with the new; also that the public will not be so prompt to use them without sanction from the medical profession.

MR. SAMUEL P. SALTIER thought there should be the effort to distinguish between the relative standing of the so-called newer remedies. The United States Pharmaceutical Committee has approved about 18 or 20 of the newer synthetics, a relatively small percentage of the three or four hundred of the standard synthetics. He said that the Council on Pharmacy and Chemistry has much sifting work to do. Even among the compounds claimed to be definite, investigation has shown one preparation not to be what was designated by the patent, and he hopes that the Council will see fit to make this information public. The medical profession should continue its support of the American Medical Association and make possible the accomplishment of definite results.

DR. J. HENDRICK LLOYD said that one of the obstacles to the proper control of the matter is the apathy of the members of the medical profession. He spoke especially with reference to proprietary medicines in their relation to medical journals and referred to his own experience as editor-in-chief of a medical journal in refusing advertisements of nostrums. He cited an instance of a paper brought to him for publication extolling the virtues of a certain lithia water, said to have been written by a professor in one of the Philadelphia medical colleges and for which the professor had been paid three hundred dollars. Dr. Lloyd thought it needless to state that the paper did not appear in the *Philadelphia Medical Journal*. Dr. Lloyd said that the fight against the nostrum evil should not be the fight of the medical profession alone, because more is involved than the interests of the profession; but as guardians of the people the medical profession owes a duty to the public. In his judgment, an opinion of a medical journal should not be based on the editorial columns. The reader should not be taken in by an editor who is shouting for ethics, but should look at the advertising pages to see whether they contain a lot of quack advertisements.

DR. M. C. THURSH said it is well known that if the formulae of the secret nostrums were published they would soon meet their Waterloo, and instanced a certain sulphur bitters advertised to contain no alcohol, when in reality it contains no sulphur and 20 per cent. of alcohol. Physicians should absolutely condemn the sale of such preparations and call the attention of the people to the great harm they are doing.

DR. H. C. WOOD, JR., did not agree with Drs. Cohen and Stengel in placing the fault on the medical profession. The medical profession, he said, as a whole, does not know what these things are; no one but a trained pharmacologist can differentiate between patent medicines, the secret pharmaceutical, the synthetic, and the so-called synthetic preparations. The only way possible for the medical profession to know the truth is to have it set forth in medical journals, and this truth, he said, the medical journals will not publish. From actual personal knowledge of a large number of medical journals, only those published in the interests of medical societies are willing to publish the truth about proprietary remedies. In some respects they can not be blamed, because the existence of the journals depends on the income from these sources. He felt that the most valuable remedy is exposure; that as soon

as the truth is known concerning the ingredients of the nostrums, they will cease to exist. He said the society should cast its influence toward the passage of the bill for the regulation of food and drugs.

DR. A. B. HIRSH thought that if societies would be somewhat heroic and not have for their official organs publications receiving such advertisements much good would be accomplished. He favored the holding of symposiums by the different branches of the County Society, the data of the same to be furnished the Committee on Legislation for further action.

DR. A. B. KIRKPATRICK cited a case showing all the evidences of chloral poisoning, the result of the use of one of the nostrums. He referred to the custom under some governments of having proprietary medicines analyzed by official chemists, the formula, with the correct price, printed and sent to the householders in the municipality. This naturally was a direct blow to the trade. He thought that some such plan in this country would be of advantage.

DR. FRANCINE thought the profession should support the American Medical Association in its work and endorse the work of the lay journals. He favored the appointment of committees to visit the lay editors for further accomplishment.

DR. ANDERS said that the best cure for the evil is continued exposure. This is to be carried on through the lay press in addition to the medical.

MR. WILBERT emphasized the necessity of the medical profession to devote the time to the correction of some of the phases of the fraud which is complicated and far-reaching. "Patent" medicines, he said, are called "patent," because they are not patented. The word "patent" means open, honest, evident, and there is nothing evident, except that the manufacturer is making money. "Ethical" means "honest," and there is nothing honest about a secret proprietary medicine. The greatest danger in regard to synthetic chemicals is the fact that the journals will not print a harmful effect when it is found. Physicians should acquaint themselves with the harmfulness of the various phases of the proprietary nostrum evil, be it called patent medicine, ethical remedies, or synthetic chemicals.

On motion of Dr. A. A. ESHNER, the following resolutions were adopted:

Resolved, That it is undignified and unbecoming for physicians to prescribe medicinal preparations of secret or concealed composition and that the practice of so prescribing them is to be strongly condemned.

Resolved, That the Philadelphia County Medical Society heartily endorses the action of the American Medical Association in establishing a Council on Pharmacy and Chemistry for the purpose of investigating drugs of a non-official character.

BOSTON MEDICAL LIBRARY MEETING.

Regular Meeting, held Jan. 3, 1906.

DR. RICHARD C. CABOT in the Chair.

The Nostrum Evil.

The chairman had sent out to the profession, with the notice of the meeting, an abstract of an article from *Collier's Weekly* and distributed in the hall a partial list of the members of the Proprietary Association of America. In introducing the first speaker, Dr. Frank Billings of Chicago, he took occasion to explain the terms nostrum, patented medicines and patent medicines, proprietary remedies, etc.

DR. BILLINGS explained the relation between the terms "patented" and "copyrighted." One can not patent a mere mixture unless one patents the process by which it is made. Such a patent lasts seventeen years and is not really secret. But a copyright, usually of the name, lasts forever. Phenacetin is an example of the former class. Its patent expires in a few months. The patents protecting acetanilid and antipyrin have already expired. Gray's glycerin tonic is an example of the second class. A nostrum is a secret preparation, and the adjective "secret" is really unnecessary. For the widespread use of nostrums this profession is primarily to blame. There are "millions in it." The doctors are dupes. The majority of physicians do not practice rationally. They make no real diagnosis, but note symptoms and treat them. Each symptom calls for a drug or drugs. Often these must be changed.

They must be palatable and the dose indicated. The physician is instructed (?) by the agent who brings him samples and who is either a doctor who has failed in practice or a druggist. Testimonials and explanations of the way in which the potency of the preparation is enhanced by a special method of preparation are believed and the latest sample employed. The nomenclature of nostrums is wonderful and without any semblance of system. Well-recognized drugs are used as a basis for a multitude of these preparations. Thus urotropin is the basis of at least twelve, and acetanilid of an even larger number. Poisons should be indicated on the labels and the exact amount contained indicated. Chronic acetanilid poisoning is a common occurrence in Chicago. Many of these products claimed to be synthetics are really simply mixtures. The acetanilid pulvis compositus of the new pharmacopeia is a mixture too dangerous to use. This heterogeneous nomenclature is bad enough for medical progress, but even worse is the material published in the medical press containing the statements of what the given remedies will do. Examples were quoted from the *New York Medical Record*, *Medical News*, *Philadelphia Medical Journal*, *Boston Medical and Surgical Journal*, *American Medicine*, *British Medical Journal*, and *London Lancet*. Their absurdity was clear in the reading without comment.

THE JOURNAL of the American Medical Association has set an example which others should follow. The editor should be responsible also for the reading material in the advertisements. So far has this abuse progressed that the phrases used might with very little change be transferred *in toto* to the reading notices of such remedies as castoria or Ayer's cherry pectoral in the lay press. The medical press, with its great power for good as an educator, has an equal power for evil. Unfortunately, the editor edits only his part, and the publisher prints what pays him best. The average man believes what he reads.

The patent-medicine evil, then, is due, first, to the credulity, if not the ignorance, of doctors, and second, to the cupidity of proprietors and promoters, and of medical journals. Fifty per cent. of the doctors prescribe them. Mr. James J. Walsh of New York City reports that 70 per cent. of the prescriptions written there contain them. In one large Chicago pharmacy 42 per cent. of the prescriptions filled contained such ingredients and were signed by doctors of high standing. In another pharmacy 50 per cent. were of the same kind, and were sent by family physicians. For example, one prescription called for castoria and syrup of figs, aa, one teaspoonful every two hours. In Boston one drug store reports that of 14,895 prescriptions received in a year 38 per cent. contained proprietary medicines, and another had 48 per cent. in 12,000. In the country the proportion is even greater.

Modern medicine has shown that specific medicines for diseases are very limited in number. Medicines are mainly palliative or useful for the relief of organs. The doctor must first make a definite diagnosis and then seek to remove the cause. Besides hygiene, diet, etc., the pharmacopeia furnishes an abundance of suitable drugs. A good druggist can fill any prescription desired and at far less expense than the corresponding nostrum. Thus acetanilid costs 30 cents per pound, but is sold in these preparations for 100 times that amount. Students should be better instructed in botany, materia medica and therapeutics. They should know when not to give drugs as well as when to prescribe them.

For the present evil the great remedy is publicity. Medical meetings should not be marked by the presence of great pyramids of proprietary remedies and stacks of literature. Testimonials should be frowned on. Advertising in the medical journals should be guarded; formulae with the exact amounts should be printed. The well-educated physicians do not wish to use a stock formula, but will adapt the prescriptions which they give to the individual needs of the patient.

Ready-Made Remedies.

DR. FRANK G. WHEATLEY of North Abington, house chairman of the committee on public health, Massachusetts General Court, 1904-1905, said he did not speak as a legislator, though incidentally he believes that both the commonwealth and the profession would be benefited if doctors were willing

more frequently to become members of the legislature. The medical profession is in some degree responsible for the present deplorable condition of affairs and has a certain duty to perform in the warfare against this evil. For practical purposes patented and proprietary medicines are alike. In either case the object is pecuniary gain. The duty of any worker in scientific medicine who discovers a new remedy of value or a new method of combining old remedies is as clear as that of the surgeon who has hit on some new method in operative surgery. To say that anything which has to do with the treatment of the sick should be restricted in this way is to say that the practice of medicine is commercialism pure and simple. The public is injured, physically, morally and financially, by these alleged remedies. While a few of them may be intrinsically valuable, in no single instance are they indispensable to the successful practice of the healing art, and the prescribing of them by the profession is, on the whole, a monumental blunder and works an endless degree of harm. Probably no one would prescribe peruna instead of the official spiritus frumenti, but, perhaps, some one might order listerine instead of a solution of boric acid. This robs the patient, for it has been demonstrated that as much antiseptic value can be obtained from a solution of any of the common antiseptics for one cent as from \$4.95 worth of listerine. Moreover, the physician by thus prescribing, throws his influence in favor of the whole class. The public is not logical, and jumps to this conclusion.

If better results are obtained by using them, it is because the average physician does not know enough about the science and art of prescription writing. This ignorance is one of the parts of a movement which dates back to Bigelow's "The Self Limitation of Disease," and has gone to the brink of therapeutic nihilism. Emphasis is laid on diet and hygiene, and drug treatment is considered of little moment. If this theory were applied to every branch of medical science we could very materially shorten the required courses in medical schools. Our medical students must be impressed with the fact that there are certain definite results which can be obtained by the use of drugs, and that a thorough knowledge of prescription writing is a *sine qua non* for a degree in medicine. Patients have the right to demand a prescription adapted to the individual needs of the case, rather than one ready-made which has to recommend it the dictum of a financially interested manufacturer. Medical schools should produce graduates who can write individual prescriptions. Not long since there was formed in Paris an association for the postgraduate study of drugs, the reason given being that the average French graduate knows little or nothing of the subject.

A second reason for using the ready-made article is that it is easier to order it. True, but it would be easier still and in most cases better to prescribe nothing. The leaders in the profession lessen the validity of their claim by so prescribing and give proof of lack of education, laziness or ape-like imitativeness. Commercialism is back of the whole subject. Any legislation which interferes with the business is sure to encounter tremendous opposition. The fellow-townsmen of Lydia Pinkham, J. C. Ayer & Co., and the residents of other municipalities where the business is carried on, advertising agencies and the drug trade, with some honorable exceptions, join forces with the manufacturers and prevent legislative interference. The time has come when there are no "ethical preparations." We should ignore the whole list. If we will confine our prescribing to articles recognized by the national authority, we shall confer one of the greatest boons on the public and incidentally on ourselves that the annals of medicine record.

Dr. DAVID W. CREEVER said that physicians have two duties, that which they owe to their patients and that which they owe to the public. He must first find out what is the matter and then give not an opinion, but a remedy. This may be advice as to hygiene and sanitation, or it may include drugs, and the physician should know the character, qualities and purity of these drugs. Prescriptions which are made up at the time by a reliable apothecary are likely to be pure and fresh and, therefore, potent. The great danger in all these secret remedies is that the manufacturers either do not state what they contain, or make false statements regarding the

composition of these remedies. Drugs especially dangerous in such preparations are opium, chloral, cocaine, the coal-tar products, and last but not least, alcohol. If a physician prescribes an unknown remedy and a drug habit results, it is certainly as much his fault as that of the manufacturer.

Dr. JAMES C. WHITE said that though in practice fifty years, he had never prescribed a single remedy outside of those contained in the pharmacopœia. The success of nostrums and proprietary medicines lies in the advertising. The daily press, the religious press, literary weeklies, monthlies and quarterlies, and even the medical press, are all at fault. Medical journals should have no nostrum advertisements. A few medical journals adopting this plan would have general support and would not need to depend on advertisements for their pecuniary success. A medical journal with which Dr. White is connected, which has only twenty advertisements, can not pay its way at \$4 a year, while a similar journal with seventy advertisements is entirely self-supporting at \$1 a year. Agents of proprietary medicines should be kept away from the physician's office. Dr. White would establish in every locality a pharmacy which would agree to have no dealings with proprietary remedies and to supply only pharmaceutical preparations. He believes that at least 50 per cent. of the profession would support such a pharmacy.

Dr. MORTON PRINCE believes that if a medical journal would exclude nostrums and appeal to the medical public it would receive support. This would be a duty. Advertisements are put in because the profession does not give the needed support. Dr. Prince referred to the work of *Collier's Weekly* and to the exposure by the *Ladies' Home Journal* of the methods of manufacturers in advertising for correspondence regarding various ailments. These letters, he said, are classified and answered by stock letters. Dr. Prince stated that this is a fraud in that it violates state law by practicing medicine without a license. A patent medicine is not a success unless it is a "repeater." Frequently this means that a drug habit like alcoholism has become established and can be broken off only with great difficulty. Proprietary medicines whose ingredients are known and whose manufacture is conducted by honest business methods may be useful. The evil of those whose ingredients are not known, Dr. Prince said, might be remedied by the publication of their formulæ. For many years he has received no agents at his office, and now no agent goes there to leave samples.

Dr. F. C. SHATTUCK spoke of the "Index Medicus." There are no advertisements in that journal. Though only valuable for every library, it was not supported by the profession even when the price was only \$5 a year. It was allowed to die and was revived by Mr. Carnegie's money. The medical men are the recipients of his bounty.

Dr. JOHN LOVETT MORSE said that we can hardly fail to appreciate the importance of this subject. Physicians realize their indebtedness to the Council on Pharmacy and Chemistry of the American Medical Association. He thinks that physicians ought to realize also how much they owe to the *Ladies' Home Journal* and *Collier's Weekly* for bringing this to the public. These magazines reach the public where doctors do not. Dr. Morse presented the following resolutions:

Resolved, 1. The members of the Suffolk District Section of the Massachusetts Medical Society here present heartily approve of the action of the American Medical Association in establishing the Council on Pharmacy and Chemistry for the purpose of investigating and reporting on non-official drugs and cordially welcome the results of the work already done by that Council.

2. We also our hearty support to the educational campaign now being carried on by *Collier's Weekly*, by the *Ladies' Home Journal* and by THE JOURNAL of the American Medical Association and we warmly commend the action of these journals in exposing the humiliating subservience of the press, lay and medical, to the manipulations of the Proprietary Association of America, and in showing up the fraudulent use of sham testimonials and the loss of life due to the use of the products exploited by members of the Proprietary Association.

3. Copies of these resolutions should be sent to journals mentioned in the foregoing resolutions.

This resolution was unanimously adopted.

Dr. CABOT suggested one other remedy, namely: If the 200 or 300 physicians who are contributors of articles to the best of medical journals would refuse to allow their papers to be printed in any journal which admits nostrums to its advertising pages, their influence might be decisive.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

*Fifteenth Annual Meeting, held in Kansas City, Mo.,
Dec. 28-29, 1905.*

(Concluded from page 148.)

Treatment of Appendicitis.

DR. O. BEVERLY CAMPBELL, St. Joseph, Mo., summarized his paper as follows: 1. In incipient appendicitis, until the patient is placed in the hands of the surgeon, all food and drink should be withheld, and the patient nourished per rectum. 2. Every patient should be advised of the advantages of an early operation. 3. The removal of the appendix, or the closure of an opening in the cecum, should be made, in abscess cases, when it can be done without additional risk to the life of the patient. 4. The practice of merely draining in every abscess case should be condemned as nonsurgical. 5. Operation during a progressive diffuse peritonitis is attended with a higher mortality than the method of procedure recommended by the writer. 6. If the internist will direct his efforts in the treatment of appendicitis toward the protection of the peritoneum until he can transfer his case to the surgeon, the mortality in this disease will be greatly lessened. 7. The adoption of the more rational method of dealing with diffuse peritonitis will convert a large percentage of these cases into circumscribed peritonitis, when they can be rightly classed as large abscess cases, having the same mortality.

Treatment of Appendicitis in Its Various Stages as It Comes to the Surgeon.

DR. C. H. WALLACE, St. Joseph, Mo., summarized his paper as follows: 1. Appendicitis is always a surgical case. 2. Every case should have and is entitled to operative measures within the first forty-eight hours. 3. The rapidly progressing stage is the stage of applicability of the Ochsner treatment, and by it offers the lowest mortality. 4. Cases coming to the surgeon with evidence of gradually subsiding symptoms should be deferred for a more favorable operative period. 5. In every interval or chronic case operation should be urged. 6. Abscess cases should be given two safe rather than one hazardous operation. 7. Diffuse peritonitis should have all accumulated dependent cavities primarily and carefully incised and drained and not flushed, and secondarily the offending organ incised.

Extrauterine Pregnancy.

DR. J. W. ANDREWS, Mankato, Minn., reported having operated on a woman who was ten weeks pregnant; the sac ruptured and the operation was delayed thirty-six hours. The steps of the operation performed were not very different from those of an ordinary laparotomy. He argued in favor of accuracy and rapidity in operating on these cases, and emphasized the necessity in many cases of thrusting the hand down through the pool of blood and securing the blood vessels before attempting to mop out or otherwise remove the blood and blood clots. He thought drainage, as a rule, should be employed after laparotomy for extrauterine pregnancy.

Postclimacteric Hemorrhages; Their Cause and Treatment.

DR. A. L. WRIGHT, Carroll, Iowa, called attention to the frequency of occurrence of postclimacteric hemorrhage after the establishment of the menopause. He spoke of how often it is passed over slightly, with the thought that it is incident to the woman's age until grave complications are at hand, or the true cause—carcinoma, in most instances—is so far advanced as to place the patient beyond the pale of surgical interference. Dr. Wright called attention to the several changes that take place in the uterus at this time and cause hemorrhage. The trend of his argument was to early recognize the pathologic changes taking place in the uterus, and, if in doubt, remove the organ rather than take chances that will invariably result in death.

Gunshot Injuries of the Stomach.

DR. J. N. WARREN, Sioux City, Iowa, gave the history and analysis of 144 cases of gunshot injury of the stomach. In operated cases the time elapsing from the time of injury and

the operation shows that the earlier the operation is performed the more favorable is the result. In complicated cases the number of lesions found and viscera injured add to the gravity of the case. He referred to the results in cases that were not operated. He said the presence of food in the stomach, with the discharge of the same into the abdominal cavity, adds to the danger of general peritonitis, either with or without operation.

Symptoms of Spinal Disease.

DR. S. C. BALDWIN, Salt Lake City, Utah, called attention particularly to the early symptoms of spinal disease, in order that suffering may be earlier relieved and deformity avoided. The general or more common symptoms, and then such symptoms as rigidity, abnormal gait, pain, paralysis, abscess, etc., were considered. The symptoms differ when different regions of the spine are involved. For instance, in the cervical region the first symptom noticed may be pain in the head, or earache. Before there is any sign of deformity the patient may complain of difficulty in swallowing and even in breathing. There may be and often is the grunting respiration. Such general symptoms as weakness, loss of appetite, loss of weight, rigidity and general change of gait are apparent in disease of all parts of the spine. The writer has seen a number of cases of Pott's disease developing in patients over 40 years of age, and two cases which he recalls developed after 50. Weakness may show itself in a general drooping of the trunk, in an unsteady and stumbling gait, and exhaustion requiring rest after the slightest exertion.

Drainage of the Male Pelvis.

DR. WILLIAM JEPSON, Sioux City, Iowa, spoke of the obstacles in the way of instituting such drainage as compared with the female pelvis. He described a method of instituting drainage of the male pelvis and reported the results he obtained in 19 cases. In all of these cases there existed a diffuse pelvic peritonitis, with accumulations of purulent fluid, often elevating the distended bowel high into the abdomen, and in two cases ascending between the mesentery and descending colon and overflowing from the pelvis into the left subrenal fossa, which was also opened and drained. In all but five cases free pus existed in the space to the outer side of the ascending colon, which in each instance was drained through the ileocecal space. In one case the distended paretic bowel necessitated opening and the establishment of an artificial anus. Three of the cases thus treated died, one after an illness of nearly five months, during which time death on three or four occasions was threatened by intestinal obstruction, while a number of abscesses followed in the abdominal wall. Death resulted from exhaustion incident to the prolonged suppuration. In the second fatal case death took place ten days after the operation, due to toxemia.

Gastric Dyspepsias Amenable to Surgical Treatment.

DR. WILLIAM E. GROUND, Superior, Wis., said it is now recognized that many forms of digestive disturbance are dependent on conditions entirely outside the stomach, and involve this organ either by direct extension of the pathologic process, or indirectly by nerve influence. Among these may be mentioned inflammatory or irritative conditions in the biliary apparatus, pancreas, duodenum, or appendix, and adhesions of the stomach to the surrounding viscera. Within the stomach conditions remediable by surgical means are perforative and non-perforative gastric ulcer, chronic gastric ulcer, hemorrhage, pyloric obstruction, gastric dilatation with stasis, hyperchlorhydria, and cancer. The question of operative interference in some of these conditions is still in dispute, but the wisdom of referring cases of perforating gastric ulcer, with or without adhesions, cicatricial stenosis of the pylorus, adhesions of the stomach to any of the surrounding structures and perhaps chronic gastric ulcer, to the surgeon is now quite firmly settled.

Closely associated with ulcer is the sequence of cicatrization and contraction, and when this process involves the pylorus, it leads to stenosis and obstruction, and later, if this is prolonged, gastric dilatation and atony will result. When the

pylorus is obstructed by spasm due to the presence of the ulcer or to hyperchlorhydria, which almost always accompanies non-malignant ulcer, or to the cicatricial contraction following the healing of an ulcer, the pylorus is rendered incapable of readily transmitting its contents, the stomach becomes distended, and its muscular walls weakened, leading ultimately to permanent atonia gastrica. Stomach dilatation may be due to atony alone, but it is much more frequently due to mechanical obstruction at the pylorus. In this condition of gastric stasis, food may remain in the stomach a day or more, whereas it should empty itself within seven days at the most. In fairly advanced cases, when the obstruction has given rise to a compensatory hypertrophy of the stomach, the peristaltic movements may be seen and felt through the abdominal walls, usually accompanied by pain and vomiting. Later, when the stomach begins to dilate and assumes a more passive state, the patient complains of fullness and epigastric pains after meals. Fermentation takes place, causing eructations and heartburn, and frequently vomiting. Vomiting is a most prominent symptom when gastrectasia and fermentation are well established. When this sequence of events is set up there is but one remedy, and that is surgical intervention.

In view of the information of the curative effects of operation, they can not be attributed alone to drainage of the stomach or to short circuiting of the food current, as is so often contended, for unless the pylorus is closed food will pass through it. The explanation the writer has arrived at is that the cutting off of the circular fibers in the pyloric end of the stomach does away to a considerable extent with the muscular unrest accompanying gastric digestion, especially where ulceration is present. A gastroenterostomy acts much the same as cutting the fibers of the sphincter and in anal fissure. In this latter condition the feces continue to pass over the ulcer, but the paralyzed sphincter prevents friction and it heals readily.

Restoration of the Perineum.

DR. HOWARD HILL, Kansas City, Mo., said that the ideal operation consists in restoring the different planes of tissue to their normal position. He has used a transverse incision which raises a flap of the posterior vaginal wall and has done the operation by using three layers of sutures. The first includes the levator ani and its fascia, reattaching that portion of the muscle which helps to form the perineal center in front of the rectum. Next he identifies and sutures the triangular ligament and attaches the sphincter ani to the perineal center. A single suture is used for the bulbo-cavernosus.

Preoperative Thrombi in Field of Operation as a Cause of Postoperative Complications and Death.

DR. A. W. ABBOTT, Minneapolis, Minn., said that thrombosis, especially of the veins, is often to be found, if looked for, in the vicinity of the field of operation. Thrombi may result from the pressure of a tumor, from cancer, or tuberculosis, etc., or they may be the result of adjacent inflammation or traumatism. Usually no attention is paid to the condition. Thrombosis in the field of operation increases the danger. The author believes many cases of fatal sepsis, pulmonary embolism, and particularly cases of so-called ether pneumonia, can be rightly ascribed to the infection of a clotted vein or its disturbance by rough handling, or both; so also pyemia, abscess of the liver, osteomyelitis, and other evidences of a metastatic infection. Aural surgeons have formulated a definite operation for thrombi of the lateral and sigmoid sinuses, namely, ligation of the internal jugular vein and clearance and drainage of the sinuses. He thinks a similar course should be pursued in all operations complicated by thrombosis.

Conservatism in Postoperative Treatment.

DR. S. C. BREDE, David City, Neb., criticised the increasing tendency among surgeons to hasten their patients out of bed and hospital after grave operations. Nature will work only so fast, and he thinks there is a limit in time beyond which it is unsafe to urge her. He contends that this limit has been overstepped, and that the perfect result which should be the aim in every case is thereby marred.

The following papers were also read: "Talipes Calcareus," by Dr. A. F. Jonas, Omaha; "Tubercular Peritonitis," by Dr. T. E. Potter, St. Joseph, Mo.; "Management of Appendicitis Cases," by Dr. Van Buren Knott, Sioux City, Iowa; "Gluteal Cavernous Angioma," by Dr. J. E. Summers, Jr., Omaha.

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

SECTION ON GENERAL MEDICINE.

Regular Meeting, held Nov. 13, 1905.

The president, DR. SAMUEL M. HAMILL, in the Chair.

Medical Versus Surgical Treatment of Stomach Diseases.

DR. FRANK BILLINGS, of Chicago, presented an elaborate paper which will appear in THE JOURNAL.

Indications for Surgical Intervention in Diseases of Stomach in the Absence of Perforation or Hemorrhage.

DR. GEORGE E. BREWER, of New York City, stated that the question of treatment of gastric and duodenal disorders can be settled only by careful review of reliable statistics regarding the end-results of cases treated both medically and surgically. There is not recorded a single case of carcinoma cured by medical treatment. Surgery has cured from 12 to 15 per cent. of cases submitted to radical operative treatment at a time when the disease could be completely removed. Surgery also gives great temporary relief in a large number of cancer cases which have passed beyond the period where radical operation is advisable.

The surgical treatment of gastric ulcer has shown results far in advance of those published from the best medical clinics of the world. The statistics of Greenough and Joslin, who followed and obtained the end-results of 187 cases of gastric ulcer treated at the Massachusetts General Hospital, show that, while 80 per cent. were reported as cured at the time of leaving the hospital, only 40 per cent. remained well, and that, while the hospital death rate was stated as 8 per cent., the actual death rate from the disease was found to be 20 per cent. Russell's statistics, published in *The Lancet* for January, 1904, show even a smaller percentage of final cures by medical treatment. These statistics conclusively demonstrate that 60 per cent. of all cases of gastric ulcer treated medically must look forward to death or chronic invalidism. The statistics of von Eiselsberg, Mayo, Deaver, Robson, Munro and others show from 50 to 90 per cent. of positive cures by operation.

Regarding the treatment of pyloric stenosis from ulcer or other causes, he said it might be stated positively that in no other diseases of the alimentary canal are the results of surgical treatment more strikingly satisfactory. von Eiselsberg reported 90 per cent. of his cases cured on an average of two years after operation. Mumford collected the end-results in 169 cases from 8 different surgical clinics. Of these he reported that 89 per cent. were immediately relieved of their symptoms as the result of operative treatment, while 71 per cent. remained permanently cured. The death rate from gastroenterostomy has been so reduced that at present, in the hands of expert operators, it should be less than 3 per cent. These facts, he thinks, conclusively demonstrate the superiority of surgical treatment in this class of cases. Regarding the surgical indications in diseases of the stomach and duodenum Brewer stated: 1. All cases of perforation of an ulcer of the stomach or duodenum should be immediately subjected to surgical treatment. 2. Repeated attacks of hemorrhage, threatening the life of the individual, should be treated surgically. 3. Exploratory operation should be advised in all cases of suspected cancer to establish the diagnosis and to render it possible to inaugurate radical treatment at a time when the disease can be thoroughly eradicated. 4. Gastroenterostomy should be advised in all cases of gastric cancer with pyloric stenosis before the patient becomes exhausted from suffering and starvation. 5. All cases of gastric ulcer not relieved by six weeks of intelligent medical treatment, all cases of chronic indurated ulcer, and all cases of recurrent symptoms from uncured ulcer should be subjected to surgical treatment. 6. All cases of progressive pyloric stenosis from

whatever cause, except those due to gummatous infiltration, should be referred to the surgeon as soon as the diagnosis is made.

Relation of Carcinoma to Ulcer of the Stomach, Especially as Influencing the Treatment of Ulcer.

DR. JOHN H. MUSSER said that, in view of the conclusions of Fitterer, of Chicago, in his study of some 56 cases of carcinoma of the stomach, the origin of which was in the site of an ulcer—namely, that ulcer of the stomach was followed by and might, perhaps, be considered in one sense causal of carcinoma of the stomach—and, in view of the fact that in 8 per cent. of all cases of carcinoma of the stomach a clear family history of carcinoma could be obtained, he thought it fair to the patient with a chronic ulcer of the stomach, in whom there was a family history of cancer, not amenable in six or eight weeks to medical treatment, to operate. If acute gastric ulcer can be diagnosed, medical treatment should be employed; but, in the large majority of cases, it is difficult to determine whether or not the condition is an acute manifestation of a chronic ulcer. Chronic ulcer might remain latent over a long period and suddenly manifest acute symptoms, such as hemorrhage. Such an occurrence in a patient over 40 years of age should be managed as one of chronic ulcer. In both classes of cases, however, there should be the individual study of the case. Carcinoma of the stomach, if diagnosed early, should be at once treated surgically. In cases of doubt he advised exploratory incision. He unhesitatingly demands operation in pyloric stenosis due to adhesions of all kinds. In cases of supposed ulcer where the diagnosis rested between pyloric stenosis due to ulcer and stenosis due to adhesions, if medical treatment has been unavailing, in a very short time he advises immediate operative procedure. In the doubtful differential diagnosis of pyloric stenosis due to adhesions and that of carcinoma, immediate surgical intervention was urged on the ground that if the stenosis were benign the patient would be relieved; if malignant, the patient would be given the benefit of the best chance. Dr. Musser thinks all are in accord with Dr. Billings regarding the inadvisability of operating generally in cases of ptosis and in cases of gastric neurosis in which there had occurred organic lesions, although occasionally operation brought about cure. An illustrative case was cited of a woman who for five years had been under the best medical care to overcome the neurosthenic condition, associated with ptosis and extreme gastric dilatation. Finally operation entirely relieved the dilatation, and after a period of 8 months the general phenomena disappeared. The patient gained 50 pounds, and is at present perfectly well. Dr. Musser concluded by saying that, while there are some cases in which the indications for operative procedure are positive, there are numbers which should be under careful medical attention for some time, but not too long, and that now and then a neurosthenic subject is cured only by surgical means. He said that he would rather give the patient the advantage of an exploratory operation by a competent surgeon, in cases in which the diagnosis is doubtful, than allow them to rest in the too often false security of a dogmatic diagnosis. He has never had reason to regret surgical procedures, while he has been chagrined at its non-employment in three cases that died of hemorrhage.

Final Results of Gastroenterostomy and Pyloroplasty in Stomach Diseases.

DR. JOHN B. DEEVER said that chronic non-malignant gastric affections of the stomach are attributed largely to ulcers of the stomach which produce various grades of gastric indigestion. He did not believe that the stomach exists as an isolated organ, but that it forms a part of the digestive apparatus found in the upper abdomen. Pathologic experience has shown that persistent gastric indigestion depends for its chronicity on structural organic change which can not be remedied by medical and dietetic measures. In support of this the figures of Hartmann were given of a mortality of 2 per cent. in cases treated surgically and of 24 per cent. in those cases primarily treated medically and later referred to the surgeon.

The two main therapeutic objects of gastroenterostomy and pyloroplasty are rest and drainage of the stomach. In gastric

ulcer without pyloric stenosis or dilatation of the stomach, rest is the main therapeutic object. Hemorrhage, chronic in nature, is an important symptom produced by ulcer of this character, and for this symptom the surgeon's aid is most frequently sought. The value of nutrient enemata for putting the ulcerated stomach to rest, he felt, has been overestimated. Edsall had shown that, even under the best conditions possible, patients fed only by nutrient enemata are slowly starving to death. To secure this required rest, surgery short-circuits the ingested food so that when it is received into the stomach it passes directly into the jejunum by an artificial opening and never comes in contact again with the ulcerated pyloric area. Among the last 38 operations performed by Dr. Deaver for non-malignant diseases of the stomach there has been one death, a mortality of 2.63 per cent. This death occurred in a patient with chronic Bright's disease, who also had chronic appendicitis, the appendix being removed at the time the stomach operation was performed. Dr. Deaver said it should be remembered that figures given for the surgical side of the argument include not only operations to procure rest to the stomach in patients with non-stenosing ulceration, but many operations on stomachs very extremely diseased, also that the operative mortality is constantly lessening. Mumford found that of the cases treated by medical means and apparently cured, averaging about 80 per cent. of the whole, probably one-half did not remain cured. With surgical treatment Mumford's figures were given as follows: Of 7 patients Barling had, 7 remain cured; of 28 Mayo had, 27 remain cured and only 1 had recurrence of symptoms; of 37, Moynihan succeeded in tracing 29 and found that all were permanent cures; of 28, Mayo Robson traced about 20 and learned that they were all permanently cured. Dr. Deaver traced 30 patients operated on by himself and all had entire immunity from digestive disturbance. It was urged that surgical treatment allowed from 95 to 98 per cent. of these patients to recover from the operation; medical treatment, from 70 to 80 per cent. from its treatment; that surgery practically cures every patient who recovers, and that medicine permanently cures only 40 to 50 per cent. of its patients; that medical treatment is long and uncertain; surgical, rapid and sure. Dr. Deaver does not urge surgical intervention in every case of ulcer of the stomach; for instance, acute peptic ulcers are frequently cured by medical rest and by therapeutics founded on the well-known physiologic laws elaborated by Pawlow. The second object of surgical intervention is that of drainage. This is indicated in practically every case of pyloric obstruction. He does not favor the operation advocated by Beyea, that of shortening the lesser omentum, because of the danger of wounding important nutrient blood vessels and because dilatation is not materially aided and probably will increase. The problems of the proper treatment of gastric diseases, Dr. Deaver believes, can only be worked out by the physician and surgeon together. He urged that the surgeon be called earlier in consultation that, with the aid of his medical colleague, he might decide which are the proper cases for surgical treatment and at what period of the disease surgical treatment can with best advantage be applied.

Therapeutic and Prognostic Value of Occult Blood in the Stools.

DR. J. DUTTON STEELE said that the conditions in which the test for occult blood in the feces are of prognostic and therapeutic value in the course of gastric ulcer are as follows: 1. To determine the length of the various periods of the medical treatment of ulcer. The patient should be kept on liquid diet and at rest until all bleeding has stopped. 2. To detect the tendency to bleeding during the course of gastric ulcer and by appropriate medical and surgical means to anticipate and prevent serious hemorrhage. 3. To determine when the medical treatment may be considered to have failed and surgical treatment is needed. This is indicated by repeated recurrence of bleeding when the patient is started on solid food after being on liquid diet. 4. Perhaps the best test may prove helpful under certain circumstances in detecting the development of a cancer on the floor of an ulcer; as, for instance, when the bleeding recurs and will not stop, although the patient is on a milk diet and in bed.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Treatment of Bronchitis in Children.

Clinical experience, according to Joseph E. Winters, in *Medical News*, teaches that bronchitis in young children is never mild. A slight coryza may rapidly spread to an involvement even of the small bronchi within twenty-four hours. In the treatment of bronchitis the temperature of the room should be uniformly at 72 F., both day and night. The room should be so situated as to admit the sun's rays and an open fire should be present, if practicable. Fresh air must be the rule at all hours. The child, according to Winters, should be in a crib and not in a bed. The crib should be flannel lined and placed in the center of the room, never near a wall, window or door. Screens should be placed about the crib for protection against draughts of air. The child should be clothed in light flannel, both arms and legs. The shirt should be loose and open in front, secured by safety pins, so that ready access may be had for physical examination. In cases of moderate severity this treatment is all that is required.

MEDICINES.

In severe cases this author recommends aconite as a remedy of perhaps the greatest efficacy, in order to restrain and to limit the amount of blood to the arteries. This preparation limits the arterial pressure and should be given in frequent doses during the first hour, gradually diminished after four or six hours, and not continued for any great length of time. He recommends the following combination for this purpose:

R. Tinct. aconiti. m. iv 25
Aque dest. 3iij 90

M. Sig.: One teaspoonful every fifteen minutes for one hour; every half-hour for four or six hours; then every hour for twenty-four hours.

The foregoing is the correct dose for a child of 1 year.

Arterial pressure is also lessened by means of diaphoresis, and as a diaphoretic he recommends spiritus etheris nitrosi as without an equal in such cases. Potassium citrate and liquor ammonii acetatis may be used in a similar manner. These preparations, however, more frequently cause nausea and so affect the sense of taste of the child, on account of this disagreeable effect, that nourishment is persistently refused. Intestinal elimination must also be properly looked into. Baths or sponging are not so necessary in these cases, according to this writer, as he states that cold to the cutaneous capillaries is an unphysiologic procedure and pernicious, and tends to extension of the disease.

STAGE OF SECRETION.

In the stage of excessive secretion agents must be employed which tend to diminish this condition. These are camphor, carbonate of ammonia, nux vomica, oxygen inhalations and counter-irritation. He recommends the spirits of camphor as the most valuable agent, and for a child 1 year of age he prescribes the following combination:

R. Spiritus camphoræ 3i 4
Saccharin gr. i 60
Spiritus etheris nitrosæ 3ii 8
Syrupi toluani 3iv 15
Aque gaultheria, q. s. ad. 3iij 90

M. Sig.: One teaspoonful every half-hour.

In the foregoing prescription the sweet spirits of nitre is added to prevent the precipitation of the camphor, and the syrup of tolu diminishes the pungency of the mixture.

The ammonium carbonate in one-grain doses is a valuable addition to the foregoing mixture unless it provokes nausea.

When the bronchi are loaded with tenacious secretion mustard is of valuable service. A paste composed of six parts of flour, one part mustard, and mixed with cold water and the white of egg, and covering the entire region over which the

moist râles are to be heard, is recommended, and allowed to remain for twenty or thirty minutes, and renewed at intervals of from two to four hours, according to the condition of the skin.

When the air tubes are blocked by tenacious muco-purulent secretion they may be freed by active emesis. This method of treatment should not be repeated more than once or twice in the twenty-four hours, and the child must be kept in the prone position to secure gravitation of secretions to a sensitive mucous membrane, in order to avoid refilling.

In cases of laryngo-tracheitis and tracheobronchitis, in which a harassing cough is present, indicating inflammation of the upper respiratory passage, oleum ricini is recommended, combined as follows:

R. Olei ricini 3iv 15
Saccharin gr. ii 12
Pulv. acacie q. s.

M. Ft. emulsiõ adde:

Spiritus etheris nitrosæ 3i 30
Aque calcis q. s. to make. 3iij 90

M. Sig.: A teaspoonful every hour.

When the cough is exceedingly distressing, counter-irritation over the larynx and sternum should be added to the treatment by the application of flaxseed poultice with mustard sprinkled over the surface. In older children Winters recommends in those irritating coughs superinduced by nervous irritability, that small doses of codein be given. In inflammations of the larynx, trachea, or bronchi, with much temperature present, he recommends aconite as the most efficient preparation.

Counter-Irritation.

Wainwright, according to an abstract in the *Medical Standard*, states that counter-irritation may be resorted to for three purposes: First, to relieve pain; second, to lessen congestion and inflammation of deep-seated organs, and, third, to promote the absorption of the products of inflammation. Counter-irritants are divided into three classes: First, rubefacients; second, vesicants, and, third, pustulants. Rubefacients do not destroy the structure of the skin, but simply cause a mild irritation and redness of the surface. They are employed essentially in functional disturbances. Vesicants cause structural changes in the skin and the underlying tissues, and are of service in chronic affections, or in those cases in which there has been a permanent change in the organs or tissues following inflammation. The third class cause pustular eruption. The author mentions as the best rubefacients mustard plasters, pepper, iodin, turpentine, and as vesicants the actual cautery, caustics, setons; as pustulants he believes that croton oil and tartrated antimony are the best. The croton oil as a pustulant must be diluted one-half with olive oil before application. The local effect of rubefacients is the same as that of acute inflammation, by producing irritation of the nerve terminals, redness, swelling, etc. He speaks of blisters as being contraindicated in gout and in diabetes, in aged individuals, and in debilitated or anemic patients, because sloughing is so liable to occur. Sawyer, according to this abstract, recommends the use of a preparation of capsicum as a rubefacient. He has found that an ethereal tincture of capsicum, by the reason of rapid evaporation of its ether, is of more value than an alcoholic tincture of the same preparation. He recommends as an excellent rubefacient the following combination:

R. Tinct. capsici ether. 4
Liquor ammoniæ 1
Olei tercbenthinæ 1
Olei lini, aa. 3iv 15

M. Sig.: Apply locally on flannel cloth or spongion piline.

Vaginitis.

The following combination is recommended by the *Medical Review of Reviews* in the treatment of vaginitis:

R. Pulv. aluminis 1
Zinci sulphitis 1
Sodii bicarbonatis 1
Acidi carbonici, aa. 3i 30
Aque 3vi 180

M. Sig.: A teaspoonful to a quart of lukewarm water, as a vaginal douche, twice daily.

For prostatitis the following combination is recommended by the same periodical:

| | | |
|-----------------------|----------|----|
| R. Ext. opii aq..... | gr. viii | 50 |
| Ext. hyoscyami..... | gr. iv | 25 |
| Olei theobroma, q. s. | | |

M. Ft. suppository No. viii. Sig.: Insert one suppository into the bowel, and repeat as necessary.

Erysipelas.

Mortimer, in *Merck's Archives*, recommends as prophylactic measures in the treatment of erysipelas that the patient be isolated and all dressings burned when removed. Small doses of calomel should be administered at intervals of one hour for six or eight doses, followed by a saline purgative. During the first twenty-four hours one-minim (.06) doses of tincture of aconite should be given every two hours. Alcohol may be given as a stimulant, if required, or as a substitute strychnia or nitroglycerin may be given. An icebag may be applied to the head to relieve the pain, and in addition to that the following combination may be given:

| | | |
|-------------------------------|--------|----|
| R. Caffeine citrate | | |
| Camphora monobromata, aa..... | gr. ss | 03 |
| Acetanilid..... | gr. ii | 12 |

M. Ft. cap. No. i. Sig.: One such capsule every two hours. Locally the following is recommended:

| | | |
|------------------------------|-----|-----|
| R. Tinct. opii..... | 3i | 30 |
| Liq. plumbi subacetatis..... | 3ii | 60 |
| Aqua dest..... | Oi | 500 |

Sig.: To be applied locally on compresses.

Liquid nourishment should be given systematically every three hours. Ice-cream may be given, and cold water should be given freely. During convalescence the general tonic treatment is indicated, with some form of iron, or as follows:

| | | |
|-------------------------|----------|------|
| R. Strychnine sulphatis | | |
| Acidi arsenosi, aa..... | gr. 1/50 | 0012 |
| Extracti gentiane..... | gr. ss | 03 |
| Quinini sulphatis..... | gr. ii | 12 |

M. Ft. cap. No. i. Sig.: One such capsule after meals. Or:

| | | |
|----------------------------------|---------|-----|
| R. Strych. sulphatis..... | gr. 1/4 | 015 |
| Liquor ferri et ammon. acet..... | 3vi | 180 |

M. Sig.: One tablespoonful in water after meals.

Medicolegal

Use of Skeleton to Illustrate Testimony.

The Supreme Court of Illinois says that, in *Chicago & Alton Railroad Company vs. Walker*, a personal injury case brought by the latter party, physicians who testified on behalf of the plaintiff were permitted, over the objection of the defendant, to use the skeleton of a human foot in explaining to the jury the location of the various bones and ligaments of the ankles. This court thinks the ruling in that regard unobjectionable. It says that the skeleton itself was not offered in evidence, but was simply used by the expert witnesses to illustrate their testimony. The court might, in its discretion, have permitted the plaintiff to exhibit her injured ankle to the jury, and allowed physicians to explain from it the nature and character of the injury. It was equally proper to use the skeleton for the purpose of explaining the testimony. Moreover, even if the skeleton had been improperly used, no substantial injury could have resulted therefrom to the defendant, as its counsel had full opportunity to cross-examine the witnesses.

Indirect Use of Medical Works in Framing Questions.

The Court of Appeal, First District, California, says that, in the homicide case of *People vs. Bowers*, a physician who had given testimony as to the symptoms and effects of arsenical poisoning was asked by the district attorney this question: "Is this a correct statement: While the poison is being eliminated, the process which begins very soon after it is taken, it generally causes fatty degeneration of the liver, heart, and kidneys, the symptoms of which are often very prominent?" This was objected to on the ground that it appeared that the district attorney was reading from certain medical books and asking the witness questions therefrom. It has been held, in

California, that it is not competent on the examination of medical witnesses to read to them extracts from medical works and ask them whether what is so read corresponds with their own judgment, when it is apparent that the sole object of so doing is to place before the jury the opinion of the author of the books referred to. But from the record in this case it did not appear, except for the statement of the attorney for the defense, that the jury could have known that the district attorney was, in fact, reading from a medical book, or from any book. So far as appeared, if in fact he was reading his question from a book, it was entirely out of sight of the jury. Moreover, when the objection was raised, the district attorney said that he was making this his own question. The court says that, while the course adopted by the district attorney could not be commended, it does not think that it would justify a reversal, or that actual error had been shown.

No Damages for Mere Mental Disturbance.

The Supreme Court of Pennsylvania says that it had the personal injury case of *Hinton vs. Borough of Freemansburg* reargued before the full court to settle finally the question that there can be no recovery of damages from fright or other merely mental suffering unconnected with physical injury. It says that the industry of counsel furnished it with a few cases favorable to his contention not previously considered. But they did not show any sound reason for a change of the court's view. All of the cases were of recent and unhealthy growth, and none of them stood squarely on the ancient ways. In the last half century the ingenuity of counsel, stimulated by the cupidity of clients and encouraged by the prejudices of juries, has expanded the action for negligence until it overtops all others in frequency and importance; but it is only in the very end of that period that it has been stretched to the effort to cover so intangible, so untrustworthy, so illusory, and so speculative a cause of action as mere mental disturbance. It requires but a brief judicial experience to be convinced of the large proportion of exaggerated, and even of actual fraud, in the ordinary action for physical injuries from negligence; and if the court opened the door to this new invention the result would be great danger, if not disaster, to the cause of practical justice. If, therefore, the question were new, this court should see no reason to reach a different conclusion. But it is settled for this state, and is no longer open to discussion.

Criminal Negligence and Liability—"Intestines."

The Supreme Court of Florida, Division B, holds, in *Hampton vs. State*, that where the death of a person results from the criminal negligence of a medical practitioner in the treatment of the case the latter is guilty of manslaughter. This criminal liability is not dependent on whether or not the party undertaking the treatment of the case is a duly licensed practitioner, or merely assumes to act as such, acted with good intent in administering the treatment, and did so with the expectation that the result would prove beneficial. The real question on which the criminal liability depends in such cases is whether there was criminal negligence. Such criminal negligence is largely a matter of degree, incapable of precise definition, and whether or not it exists to such a degree as to involve criminal liability is to be determined by the jury. Such criminal negligence exists where the physician or surgeon, or person assuming to act as such, exhibits gross lack of competency, or gross inattention, or criminal indifference to the patient's safety; and this may arise from his gross ignorance of the science of medicine or surgery and of the effect of the remedies employed, through his gross negligence in the application and selection of remedies and in his lack of proper skill in the use of instruments, or through his failure to give proper instructions to the patient or his attendants as to the use of the medicines. But where the person treating the case does nothing that a skillful person might not do, and death results merely from an error of judgment on his part, or an inadvertent mistake, he is not criminally liable.

The criminal liability of a physician for the death of his patient brought about by his gross negligence, carelessness, or ignorance, may be established on an indictment or information predicated on the general statute defining manslaughter. See-

tion 2392 of the Revised Statutes of Florida of 1892 providing as follows: "If any physician, while in a state of intoxication, shall, without a design to effect death, administer any poison, drug or medicine, or do any other act to another person which shall produce the death of such other, he shall be deemed guilty of manslaughter," does not furnish the only exclusive case where a physician can be held criminally liable for the unintended death of his patient brought about by his gross negligence or ignorance. Nor does said section render the provisions of the general manslaughter statute inapplicable to cases of death unintentionally produced by physicians through gross negligence or ignorance, where there is no question of the sobriety or intoxication of such physician; but the provisions of said Section 2392 were intended as an addendum to the provisions of the general manslaughter statute, in cases of unintentional death at the hands of physicians, to provide for cases that might not be covered by the general statute.

Where an information charges a physician with negligently pulling out the "intestines" of a patient, whereby her death was produced, it is competent at the trial to prove under such charge that the larger omentum, the mesentery, or any other organ having its place in the abdominal cavity, was pulled out or removed. The word "intestines," when used in an information or indictment, must be given its broadest popular and most comprehensive sense, as denoting everything on the inside, within, internal, inward as opposed to external, and, when applied to the human anatomy, includes the bowels, entrails, viscera, enteron, with all of their annexes and appendages; indeed, everything contained in the abdominal cavity.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

January 6.

1. Prognosis in Tuberculosis. L. F. Flike, Philadelphia.
2. *Tuberculosis of the Thoracic Duct and Acute Miliary Tuberculosis. W. T. Longcope, Philadelphia.
3. Feeding the Baby. W. B. Hoag, New York.
4. *Priapism a Symptom in Leukemia. P. L. Gunckel, Dayton, Ohio.
5. *Fatal Hematemesis, the Result of Chronic Gastric Ulcer. F. H. Murdoch, Pittsburg, Pa.
6. Ruptured Ectopic Pregnancy Complicated with Appendicitis. B. F. Stevens, El Paso, Texas.
2. Tuberculosis of Thoracic Duct.—Longcope reports 30 cases of tuberculosis in which especial attention was paid to a study of the thoracic duct as a possible point of origin for the generalized process. Of these 30 cases, 19 were typical instances of generalized acute miliary tuberculosis, in which minute tubercles were scattered in enormous numbers through most of the organs of the body. When histories could be obtained, it was found that the course of the disease was rapid, lasting usually from two to twelve weeks. The thoracic duct in 14 of the 19 cases showed a more or less extensive tuberculosis, usually with caseous nodules, while in one instance, though there was no tuberculosis of the wall of the vessel, many tubercle bacilli were found in smears from the duct lymph. In one of the four remaining cases in which the duct was normal there was a primary tuberculosis of the epididymis and testicle, with organized thrombi in the vesical veins, containing caseous masses and tubercles. In eight instances the generalized process was subacute or chronic. Large tubercles or caseous masses were scattered in small numbers through the various organs, while during life the course of the disease was protracted, lasting from three to nine months. In only two of these cases was there a tuberculosis of the thoracic duct. In both instances the tubercles were small and occurred sparingly, but in one a few tubercle bacilli were found in smears from the fluid of the duct. Finally, in three instances, the tuberculosis was of a chronic type and confined to the lungs and peritoneum. In all of these cases the thoracic duct was normal. Of the 27 cases of tuberculosis in which the process was more or less generalized, 17, or almost 63 per cent., showed tuberculosis of the thoracic duct, or, as in one instance, tubercle bacilli in

the lymph from the duct without lesions of its walls. Of the acute cases in over 79 per cent. the duct was affected or contained tubercle bacilli. The type of lesion in the duct varied considerably. Sometimes there was a single large caseous nodule usually near the receptaculum or about the arch of the aorta, with small tubercles over the intima of the vessel above and below it; sometimes several caseous nodules were scattered through the duct, while occasionally the walls of the lymphatic were simply seeded with small tubercles. In every instance the lymph nodes of the mesentery, retroperitoneum, posterior mediastinum, or bronchial regions were the seat of a chronic tuberculosis. At times several groups of glands were affected, but more often only one group, and rarely only one or two glands. Often the lesion in the duct appeared almost as old as that in the neighboring lymph nodes and was in close association with it, though a direct extension of the process from the gland to the wall of the duct was never seen. In at least two cases caseations of a small group of lymph nodes and of the thoracic duct wall were the only foci of chronic disease which could be found in the body. From the study of these cases Longcope concludes that tuberculosis of the thoracic duct is of great frequency in cases of generalized tuberculosis. He believes that the lesions in the duct from which tubercle bacilli are swept in great numbers through the lymph to the general circulation form the starting point for the generalized acute process.

4. Priapism in Leukemia.—Gunckel reports a case in which this symptom occurred. He believes that the changes which take place in the corpuscular elements in leukemic blood conduce to this condition, and that the consequent leucocytosis produces certain changes in the blood vessels that are concerned in the mechanism of an erection.

5. Fatal Hematemesis in Chronic Gastric Ulcer.—Murdoch reports the case of a man aged 40, who, after living on liquids for two months, was able to take solid food without discomfort. He had good health for two years after this time, then began having pain two or three hours after meals, which was relieved by sodium bicarbonate. Six years later he began to have severe pain which was not relieved by sodium bicarbonate. The pain was accompanied by vomiting, then by hematemesis, which continued at intervals till his death, four months afterward. The bleeding could not be stopped by any of the measures usually employed for this purpose. Operation was urged but refused. The autopsy showed an ulcer $3\frac{1}{2}$ by $2\frac{1}{2}$ inches, situated on the posterior wall of the stomach. The base of the ulcer was formed by the pancreas, to which the stomach was firmly adherent.

Medical Record, New York.

January 6.

7. *Rupture of the Esophagus Resulting from External Traumatism. H. E. Lomax, Albany, N. Y.
8. *Acute Yellow Atrophy of the Liver Following Eclampsia. L. T. Royster and C. R. Grandy, Norfolk, Va.
9. *Selective Absorption by the Cell. W. F. Vaughn, Chicago.
10. Eyes and Ears That Might Be Saved. S. S. Wallan, New York.
11. *Nailing the Head of the Humerus for Fracture of the Surgical Neck. H. A. Haubold, New York.
12. *Sutures and Their Preparation. W. H. Waters, Boston.
13. Radium, Its Known Medical Value. M. Meitzenbaum, Cleveland, Ohio.
7. Rupture of Esophagus from External Traumatism.—Lomax says that there has been, up to this time, but one case on record which can be properly included under rupture from external traumatism. The author's case, which is the second to be reported, was that of a woman aged 44, whose body was forcibly compressed in an elevator accident. She was not rendered unconscious and did not complain of great pain. Death occurred eleven hours later, after a rather sudden onset of the symptoms of collapse, and the autopsy revealed a rupture of the esophagus, close above the diaphragm, with escape of stomach contents into the left pleural cavity. There were in addition, multiple fractures of the pelvis.
8. Acute Yellow Atrophy of Liver Following Eclampsia.—Royster and Grandy describe a case and review the modern theories regarding the relationship of these diseases. They sum up their own belief as to their identity as follows:

1. A toxemia is always the primary condition, but it may be severe enough only to produce the early symptoms—headache, lassitude, disturbances of vision, and a diminished excretion of urine and urea, with possible edema and albuminuria. In a few cases this stage has been followed by coma and death without convulsions, the pathologic findings being the same as in eclampsia. 2. In eclampsia (the second stage) the toxemia has become severe enough to interfere greatly with the functions of the liver and kidneys, and to produce the nervous irritation, made evident by the convulsions (which, however, do not necessarily occur) a deepening coma, an increasing jaundice, vomiting, and often purging, with blood in the stools, followed practically always by death.

9. **Selective Absorption by Cell.**—Waugh argues that the individual cell has a selective power and is able, therefore, also to control drug absorption. If a drug is administered, those cells needing the particular properties bestowed by the remedy will take it up, whereas the others that are not likely to be benefited by it do not absorb it. He concludes that it may often be advantageous to give several remedies together that are apparently antagonistic in action, with the expectation that, the proper cells only will be influenced.

11. **Nailing Head of Humerus for Fracture of Surgical Neck.**—Hanhold describes a procedure successfully employed in a case in which the displacement could not be overcome by ordinary means. Langenbeck's anterior incision was made, the deltoid separated from the pectoralis major, and the fracture exposed. There had been much subcutaneous hemorrhage and the upper end of the lower fragment was somewhat comminuted; the loose fragments were removed. The fragments were brought into apposition with considerable difficulty, and only by forcibly prying the lower fragment outward with the aid of a periosteal elevator. With the fragments held in place, a small skin incision was made at the outer edge of the acromion process and a four-inch steel nickel-plated nail was driven through the head of the bone and onward into the shaft, thus firmly fixing the fragments in place. About three-fourths of an inch of the nail, with its head, was permitted to protrude from the skin. At the end of a week a plaster-of-Paris dressing was applied and four weeks later the nail was removed. Recovery of function was perfect.

12. **Sutures and Their Preparation.**—Watters commends highly a method of sterilization of catgut devised by W. F. Wesselhoef. This consists in placing the separate strands in a small envelope which is enclosed in a larger one. The envelopes are dried and packed in a small brass case which is filled to a definite point with alcohol and is closed hermetically with screw bolts. The case is then immersed in boiling water for an hour. This raises the temperature of the contents to 212 degrees and develops a pressure of 25 pounds to the square inch, thus insuring thorough impregnation of the catgut with the alcohol. The envelopes dry in a short time on removal from the alcohol. The advantages of the method are that it is simple and inexpensive to carry out, while both practical experience and the author's culture experiments prove that absolute sterility is obtained. Fractional sterilization is illusory in dealing with catgut.

Boston Medical and Surgical Journal.

January 4.

- 14 **Physical Aspect of American Football.** E. H. Nichols and H. B. Smith, Boston.
15 ***Fractures of the Superior Maxilla Caused by Direct Blows Over the Malar Bone. A Method for the Treatment of Such Fractures.** H. A. Lothrop, Boston.
16 **Puerperal Septicemia.** E. H. Stevens, Cambridge, Mass.

15. **Fracture of Superior Maxilla.**—The variety of fracture discussed by Lothrop is that generally classed as a fracture of the malar bone involving either its body or the zygomatic arch. Lothrop treats these cases as follows: The cheek on the affected side is raised and drawn to one side so as to expose the canine fossa. A horizontal incision about three-quarters of an inch long is made along the line of junction of the mucous membrane of the alveolus and the cheek in the uppermost portion of the canine fossa. The incision is posterior to the canine ridge and is at the highest point of the vestibule of the mouth. The incision is then carried down directly to the bone and the soft parts are slightly freed by means of a periosteum elevator. The director is now pushed through the fissure, or, if

none be detected, through the intact bone into the antrum of Highmore. Guided by the groove of the director, the operator may pass larger instruments into the antrum, tending meanwhile to force the fragments upward and forward. The opening should be made sufficiently large to pass a No. 24 French sound. With elevators of suitable size and shape the depressed portion of the anterior wall of the maxilla may be elevated. Then a sound is introduced and its tip carried to the apex of the antrum, that is, directly opposite the malar bone. The head should be held erect and firm by assistants. Both hands of the operator should be placed on the sound, one being about half-way down and resting on the side of the face in order to give support and steadiness. Gradual increase in pressure is then exerted on the sound, the force being directed in such a manner as to tend to replace the malar bone in its normal position. As it resumes its normal position the asymmetry will be seen to disappear. By means of the sound and the other elevators all fragments may be replaced. The finger placed on the ski over the malar bone and over the region of the anterior wall of the maxilla will serve for a guide as to the completeness of the reposition of fragments. Finally, a rather broad instrument is introduced through the opening into the antrum with its tip directed toward the malar so as to hold this bone in position. Then long and very narrow strips of iodoform gauze and sterile gauze should be introduced carefully so as to pack the antrum. These strips should fill up first the malar end of the antrum, gradually approaching its nasal surface. Care must be taken not to push back the fragments of the maxilla and also not to force gauze in between the maxillary surface and the cheek. The ends of all of these narrow strips should be left just protruding at the incision in the vestibule of the mouth. When properly packed the position of all fragments may be maintained. No external dressing should be applied.

New York Medical Journal.

January 6.

- 17 ***Axillary and Pectoral Cicatrices Following the Removal of the Breast, Axillary Glands, and Connective Tissue for Malignant or Other Diseases.** J. B. Murphy, Chicago.
18 **Hand Protection in Roentgen Praxis.** H. G. Piffard, New York.
19 **Professor F. Blochmann's Work on Accidental Vaccination.** G. Dock, Ann Arbor, Mich.
20 **Pathology and Diagnosis of Myocardial Inflammations and Degenerations.** J. Daland, Philadelphia.
21 **Difference in the Behavior of Dust from that of Bacteria in the Tonsillar Crypts.** J. Wright, New York.
22 ***Chronic Endotracheitis; New Method of Treatment with New Instruments.** D. H. Craig, Boston.
23 **Vicious Circle After Gastroenterostomy.** J. B. Deaver, Philadelphia.
23½ **Water as a Local Anesthetic.** J. A. Wreth, New York.
24 **Sirenomus Life of School Girls.** W. P. Northrup, New York.
25 **Aphasia, Hemiparesis and Hemianesthesia in Migraine.** S. E. Jelliffe, New York.

17. **Prevention of Cicatrices Following Breast Operations.**—According to Murphy, the best results are obtained by making the incision high up on the chest and rectangular; the apex of the incision should be just beneath the acromion process, the inner limit parallel to the fibers of the pectoral and the outer parallel to the long axis of the humerus. The incision permits of removal or division of both of the pectorals and allows the greatest latitude for axillary dissection. Next to the rectangular, the sinuous incision favored by Rodman causes the least disturbance from contraction. If the skin is involved, the line of incision must be accommodated to the extent of excision of the skin demanded by the pathologic condition, and semicircular flaps rolled from the chest, back or shoulder should be so formed as to cover the denuded area. These, however, should never be united so as to form a straight scar at the anterior axillary line. Murphy says that the best muscle to cover the important structures of the axilla is the lower part of the pectoralis major. Its aponeurosis should be removed with the breast, as the aponeurosis, and not the muscle, carries the lymphatics, in which metastasis occurs. The muscle is then cut from its costal attachments for a width of from 2 to 2½ inches, well toward the sternal margin, and split outward parallel to its fibers, allowing the humeral attachment to remain. The remaining portion of the pectoralis major, its fascia, the pectoralis minor and its fascia, may or may not be removed, depending on the operator's predilection

in this matter. When the dissection of the axilla is complete the pectoral flap is drawn across the nerve artery and vein, and fixed at the apex of the axilla, covering the anterior and inferior surface of these structures. Three or four stitches are sufficient for the purpose. Two or three additional sutures may be made attaching the flap to the latissimus or subscapularis. If the latissimus is used it should be divided well down, 2 inches of its margin and fatty tissue freed and the muscle split upward toward the humeral attachment, the flap drawn forward and upward and attached in the same manner as the pectoralis, to cover the axillary structures. The skin flaps are then placed in position in the usual way. After these procedures there is a fullness in the axilla, but this rapidly subsides as the muscle atrophies. When the wound is closed the arm is dressed at right angles to the body. It is held in this position by an axillary cast extending over the side of the chest and out over the arm to the elbow. The position is not uncomfortable. The cast immobilizes the structure during the process of repair. It can be removed at the end of ten days, when the stitches are taken out. Murphy insists that there should be a perfect approximation of all the axillary surfaces when the operation is complete and the arm is dressed and placed in position. The article is illustrated.

22. New Operation for Chronic Endotrachelitis.—In connection with this operation Craig has devised three instruments, (1) a cervical forceps designed to grasp the anterior aspect of the portio vaginalis as near as possible to, but not into, the external os; (2) an external os dilator, and (3) a curette, the edge of which is obtained by beveling from above downward and inward, making the blade cut as the curette is withdrawn. The patient is placed in the Sims position. For several days prior to operation the patient uses three two-quant 1 to 5,000 formalin douches, moderately hot, so as to secure thorough asepsis. It is not necessary to scrub or to shave the vulva. The vagina is thoroughly scrubbed with a pledget of sterile cotton saturated with a strongly alkaline solution, and this is immediately followed by a scrubbing with 1 to 5,000 formalin, or any equally efficient germicidal solution. The os is dilated and the anterior outer aspect of the portio vaginalis is grasped with the forceps as near as possible to the external os. The grasp should be deep and firm enough to furnish good counter-pressure without danger of tearing out. Care should be taken not to have the teeth penetrate to the lumen of the canal. The tip of the dilator is then introduced through the external os and against the counter-pressure of the forceps is forced home until the shoulder is in contact with the external os. Care must at all times be taken to avoid unnecessary downward traction, as this puts unnecessary strain on the uterine ligaments and favors subsequent malpositions of both uterus and appendages. The curettement of the cervical canal must be so thorough as completely to remove the cervical mucosa giving the familiar grating sensation felt when the musculature is reached. In proper cases no particular care is needed to guard against passing the internal os. The curettement is concluded by a few rotations of the curette on its long axis while it is gently pressed against the resistance offered by the internal os in order to remove the tissues immediately subjacent. Finally the cervical canal now denuded is antiseptified by the application of iodized phenol to its entire surface, the vaginal vault is filled with powdered boric acid, and a 33 per cent. ichthyol and glycerin strip is laid against the os internum and about the portio vaginalis. Disinfection of the tubes and ovaries contraindicating traction and of such a nature as to make any collateral treatment only partially successful should constitute a contraindication to this form of treatment except as an immediate preliminary to the radical treatment of the associated lesions.

St. Louis Medical Review.

December 30.

26 Biographic Clinic on Berloz. (Concluded). G. M. Gould, Philadelphia.

Lancet-Clinic, Cincinnati, Ohio.

January 6.

27 *Irritation of the Bladder. A. Ravogli, Cincinnati.

- 28 Heads and Tales. T. B. Greenley, Meadow Lawn, Ky.
 29 *Sarcoma of the Anterior Segment of the Globe. O. Tydings, Lima, Ohio.
 30 Dermatitis Venenata. E. S. McKee, Cincinnati.
 27.—See abstract in THE JOURNAL, Oct. 28, 1905, page 1352.
 29. Id.—Nov. 4, 1905, page 1435.

American Journal of Medical Sciences, Philadelphia.
 December.

- 31 *Xanthelasma and Chronic Jaundice. T. B. Fletcher, Baltimore.
 32 The Nature and the Lesions of Cirrhosis of the Liver with Special Reference to the Regeneration and Rearrangement of the Liver Parenchyma. A. O. J. Kelly, Philadelphia.
 33 Case of Congenital Hepatopositis, Showing a Mesothelial. T. W. Clarke and D. H. Dudley, Cleveland, Ohio.
 34 Chronic Parenchymatous Nephritis; Acute General Infection; Infarction of the Lung; Double Phlebitis; Nephrotheliasis; Partial Recovery. C. B. Gamble, Jr., Baltimore.
 35 Fatal Oculitering Endophlebitis of the Hepatic Veins. A. F. Hess, New York.
 36 Excision of the Head of the Humerus for Congenital Subacromial Dislocation of the Humerus. J. B. Roberts, Philadelphia.
 37 Volvulus of the Cecum and Ascending Colon. A. C. Wood, Philadelphia.
 38 Relation of Lesions of the Gasserian and Posterior Root Ganglia to Lesions Occurring in Pneumonia and Cerebrospinal Meningitis. W. T. Howard, Cleveland, Ohio.
 39 Case of Syringomyelia with Double Optic Neuritis. T. H. Welsenburg and J. Thorington, Philadelphia.
 40 Case of Chronic Anterior Polymyositis. G. A. Moleen, Denver, and W. G. Spiller, Philadelphia.
 41 *Myoclonus Multiplex. D. O. Hecht, Chicago.
 42 Infectious Arthritis, Bacteriologic Contribution to the Differentiation of the Rheumatic Affections. R. Fayerweather, Baltimore.
 43 *Fatal Case of Stokes-Adams Disease with Autopsy, Showing Involvement of the Auriculoventricular Bundle of His. A. Stengel, Philadelphia.

31. Xanthelasma and Chronic Jaundice.—The three cases reported by Fletcher all occurred in women, their respective ages being 39 (two), and 42 years. The duration of the jaundice before the xanthomata appeared was eight months, eight years and one and one-half years. The cause of the jaundice was gallstones of the common duct in two cases, in one of which there was also biliary hypertrophic cirrhosis of the liver, and in the third case hypertrophic cirrhosis of the liver alone. In all three cases the eyelids were involved; in one the eyelids only. In the other two there were lesions on the extremities and to a less degree on the trunk. In two cases the xanthomata appeared on the hands first; in the third on the eyelids. The xanthomata were chiefly in the form of plaques in all the cases. There were a few nodular xanthomata in two cases. The distribution was strikingly symmetrical. In one case there were xanthomata on the gums, and in another histologic examination of the bile ducts showed that xanthomata of the mucous membranes of the ducts were present. At all events the histologic picture showed cells identical with the "xanthoma cells" of the lesions in the skin. In one case there was a spontaneous disappearance of the xanthomata four and one-half years after the onset of the disease, and about four years after the gallstones were removed at operation. Two of the patients were operated on, and one came to autopsy, so that the causes of the jaundice were definitely ascertained. Fletcher says that four-fifths of the cases of xanthoma multiplex in adults occur in chronic jaundice. In these cases men and women are about equally affected, with possibly a slightly greater frequency in the latter. The hepatic conditions causing the jaundice have been found to be gallstones, stricture of the bile ducts, atrophic and hypertrophic cirrhosis of the liver, hydatids and cancer. In addition to the skin, the tendons and mucous membranes may occasionally be involved. The onset is said to be most frequently on the eyelids. The xanthomata accompanying jaundice are believed to be directly traceable to the latter or to some associated toxic substance circulating in the blood. Symmetry in distribution is often striking, and the tendency to develop in the folds and creases of the joints is a remarkable feature. The views as to the actual nature and sequence of tissue changes in the lesions vary much. Once they develop they rarely disappear. Spontaneous involution is rare. No treatment other than surgical, in suitable cases, is of any avail. The indications are to relieve the underlying process if possible.

38. Herpes in Pneumonia and Cerebrospinal Meningitis.—Howard believes that the cases reported by him furnish additional proof to support the position that the ordinary herpes zoster, as well as the herpes of pneumonia and cerebrospinal

meningitis, is a pathologic condition dependent on definite lesions of certain sensory ganglia, which may be caused by a variety of agents acting in different ways. The herpes is dependent on the ganglionic lesions, and apparently does not vary with the causes of the latter, whether they are due to embolism, thrombosis, hemorrhage, invasion by tumors, microorganisms and their toxins, or to other poisons. The ganglionic changes in the cases of herpes complicating pneumonia and cerebrospinal meningitis studied by Howard were identical with those described by Head and Campbell as occurring in their acute cases of so-called spontaneous herpes zoster. In the herpes of meningitis the ganglion changes probably are commonly due to an extension of the inflammatory process along the nerve roots to the ganglia. In pneumonia the *matrices morbi* are apparently brought to the ganglia by the circulation.

41. Case of Myoclonus Multiplex.—Hecht's patient, a man aged 28, was a prize-fighter by profession. His family history was negative, except that the father died of a cancer of the lip at 52. The personal history also was negative, except that the patient had had three attacks of gonorrhea. His personal habits had been very bad. He had used liquor excessively. Following a severe indulgence in liquor he noticed a twitching of the abdominal muscles which gradually increased in severity and also became more generalized. There has never been loss of consciousness, frothing, biting of the tongue, or tonic rigidity. The man has never had anything resembling an epileptic fit. The twitchings are now so severe that locomotion is almost impossible. The acts of dressing and undressing are most tedious and cumbersome. The characteristic twitching is noticeable in all the muscles. The speech of the patient is too interrupted and explosive to be understandable. Deglutition is much interfered with. Myotatic irritability is increased. Sensation is nowhere disturbed. Whisky and cloral alone allayed the mild spasms.

42. Infectious Arthritis.—Fayerweather reports 3 cases of infectious arthritis in which the bacteriologic findings were positive, and a fourth case of typical acute articular rheumatism. It was impossible to identify any of the organisms found in the affected joints with previously described germs.

43. Fatal Case of Stokes-Adams Disease.—In the case described by Stengel there was found at the autopsy a moderate grade of general arteriosclerosis. The heart was hypertrophied, the walls of the left ventricular being especially involved. The heart muscle was normal in appearance in all parts, except where an endocardial lesion affected a small area at the upper part of the interventricular septum. The root of the aorta was slightly atheromatous, and the openings of both coronary arteries were involved. The coronary arteries themselves were distinctly thickened, but in no place calcareous or stenotic. The aortic leaflets were slightly diseased, but not calcareous. The valves seemed to be competent. The lesion of importance was one on the anterior mitral-leaflet toward its base and the aortic edge. This was a patch of atheromatous character, sclerotic and white, and it extended to the endocardium exactly over the bundle of His, where this band passes from the ventricle to the auricle. Viewed from the side of the right ventricle, the specimen did not show any evidence of penetration of the sclerotic process, but on the left ventricular side it was evident that the bundle of His was involved in the area of disease. The histologic findings in the case will be published later.

Journal of Michigan State Medical Society, Detroit.

December.

- 44 Overlooked Anomalies of the Eye with Pronounced Nervous Reflexes. A. E. Hulson, Jackson.
- 45 Case of Late, Posterior, Mesometric Pregnancy. H. W. Longyear, Detroit.
- 46 Intestinal Antipneum. S. E. Sanderson, Detroit.
- 47 Importance of Rectal Exploration in Children. L. R. Thompson, Traverse City.
- 48 Infant Mortality in Michigan and Detroit with an Inquiry Concerning a Normal Infant Mortality Rate. H. M. Rieh, Detroit.
- 49 Technique of Labor. W. H. Sawyer, Hillsdale.
- 50 New Hemorrhoidal Clamp. A. McLean, Detroit.

50. A New Hemorrhoidal Clamp.—The body of the instrument devised by McLean is not unlike some clamps already in

use. The blades are curved longitudinally, with one inner margin grooved and the other ridged. On the concave surface toward the inner margin of each blade are a number of grooves sloping from without inward, the deepest portion of the groove dipping down two-thirds of the thickness of the blade. When the instrument is closed the grooves of opposite blades come together so as to form a continuous depression. These grooves are about one-eighth of an inch apart and one-eighth of an inch in width. The hemorrhoid is drawn into prominence by forceps or tenacula and the clamp placed at the desired portion of its base and closed. The pile is then removed with curved scissors or knife, following the concave surface of the clamp. The margins of mucous membrane are now stitched together by passing a well-curved needle, with catgut ligature, through each groove. This suture may be continuous or interrupted. If but a few stitches are required the ends of the continuous suture can be brought together and tied as soon as the clamp is removed. These stitches control all hemorrhage, and bring the margins of the wound in close apposition. There is a very small margin of tissue compressed by the clamp and little sloughing follows. McLean says that there is much less pain following this method than when the ligature or cautery is used. The result, he claims, is ideal, as it leaves the tissues in their normal position, without any fear of hemorrhage following, or of cicatrices forming later. This instrument can be used satisfactory for the ligation of any pedicle.

St. Paul Medical Journal.

November.

- 51 Certain Questions Pertaining to the Operative Surgery of the Lung. C. G. Curston, Boston.
- 52 *Picca, J. E. Schadle, St. Paul.
- 53 Use of Instruments of Precision in the Diagnosis of Unilateral Disease of the Kidney and Ureter. A. W. Abbott, Minneapolis.
- 54 The Old-time Doctor. H. Nell, Sibley, Iowa.
- 55 Shock and Its Treatment. G. R. Curran, Mankato, Minn.

52. Picca.—Schadle reports the case of a sugar eater, aged 43 years, who consulted him in reference to a spasmodic affection of the throat. At certain intervals the patient suffered from these attacks for a period of three years. The paroxysms were marked by periodicity, usually manifesting themselves during the menstrual epoch. The attacks were often induced by foreign substances coming in contact with the laryngeal structures. The mucous membrane of the buccal and faucial cavities was dry, smooth and markedly red. In fact, the color and general aspect of the tongue, mouth, pharynx and larynx suggested the characteristic local appearances of diabetes. The larynx was also hyperesthetic. Local applications of chlorid of zinc to the larynx were followed by relief. Prior to twelve years ago the patient had an abnormal appetite for acids, and to gratify this desire she indulged in the free use of lemons and sour pickles. In order to get rid of this habit she sought medical advice, and was given a prescription for a bitter concoction which she claims made her very ill. After recovering from the illness thus produced a ravenous appetite for sweets developed, which perverted function she indulged by eating large quantities of sugar. White, granulated sugar she preferred. The habit of eating sugar grew stronger until she finally found that it was impossible to get along without it. By and by natural food was excluded from the diet to the extent that she practically subsisted and depended on sugar. This practice was kept up for twelve years without producing any apparent damage to the system. No fixed time of the day was established for eating the sugar. She ate it almost continuously from the time of rising in the morning until retiring in the evening. The patient consumed on an average about four pounds daily, or, relatively speaking, three-fourths of a ton in a year.

Archives of Pediatrics, New York.

November.

- 56 *Case of Sepsis in a New Born Infant. A. Jacob, New York.
- 57 Chronic Constipation in Children. H. B. Sheffield, New York.
- 58 Myotonia Congenita or Thomson's Disease. F. S. Mearns, New York.
- 59 Etiology of Noma. C. Herman, New York.
- 60 Series of Cases of Stomatitis. H. H. Jenks, Philadelphia.

56. Sepsis in a Newborn Infant.—In Jacob's case nothing was noted until the fourth day. Then heavy uric acid infar-

tions were discharged, which lasted until the eighth day, recommencing on the ninth and lasting till the tenth day. A circumcision was performed on the eighth day, with no accident. Purpuric spots of a small size were seen on the extremities on the ninth day. Hematuria appeared on the twelfth day and continued. The baby died on the seventeenth day. The autopsy disclosed a left kidney enlarged to almost twice its natural size, dislodged downward, capsule penetrated with blood, and some clots between capsule and kidney. The upper part of the kidney formed a black, almost uniform looking mass. The right kidney was similarly changed, but to a far less degree. The bacterial cause of the sepsis in this case was not known, although Jacobi thinks that infection may have occurred through the umbilical stump, the cord not having fallen off before the fourteenth day. The dressing employed was boric acid, which he thinks is not a sufficient antiseptic to be applied as a protection to a vulnerable surface like that of the navel.

Journal of Cutaneous Diseases, New York.

November.

- 61 *Use of Soluble Preparations of Mercury by the Mouth in the Treatment of Syphilis. H. G. Klotz, New York.
- 62 Case of Lichen Planus Combining Two Rare Forms of the Disease. H. J. F. Wallhauser, Newark, N. J.
- 63 Antirheumatic Treatment of Psoriasis of the Finger Nails. A. S. Ashmead, New York.
- 64 Case of Brain Syphilis. J. A. Fordyce, New York.
- 65 Notes Made During a Recent Visit to the Flinsen Institute at Copenhagen. J. A. Fordyce, New York.

61. Soluble Preparations of Mercury in Syphilis.—Klotz favors the administration by mouth of soluble preparations of mercury in the treatment of syphilis. He prescribes 15 cg. of the bichlorid dissolved in 100 grams of water. One teaspoonful of this mixture is to be taken three times a day, from one-eighth to one-fifth of a grain of the bichlorid at each dose. As a rule he does not add syrups or aromatics, as these might favor decomposition of the solution; but the patients are always advised to take the medicine diluted with water or milk some time after meals. Klotz does not recommend this method as the exclusive treatment of syphilis, but employs the other methods as well, particularly in hospital practice.

Ophthalmic Record, Chicago.

November.

- 66 *Clinical Importance of the Diplobacillus of Morax and Axenfeld. H. Gifford, Omaha, Neb.
- 67 Recovery of Vision in a Non-Squinting Amblyopic Eye Following Injury to Its Fellow. L. Emerson, Orange, N. J.
- 68 Acute Non-Traumatic Iritis. H. B. Young, Burlington, Iowa.
- 69 Fatal Septicemia Due to Ophthalmia Neonatorum. E. W. Stevens, Denver.
- 70 Sulous Question for Artificial Eye. J. W. Wamsley, Philadelphia.
- 71 New Needle Holder for the Ophthalmic Surgeon. M. D. Stevenson, Akron, Ohio.
- 72 Case of Congenital Corioretina, with Aphakia, and a Case of Congenital Leucoma of the Cornea. H. B. Grattol, Dubuque, Iowa.
- 73 Sympathetic Ophthalmitis After Panophthalmitis. H. V. Wündermann, Milwaukee.
- 74 Eye Clinic at Bonn. Model Ophthalmic Hospital. C. Wood, Chicago.

66. Diplobacillus of Morax and Axenfeld.—Gifford claims that this germ has not received the attention in America which it deserves. One reason for this, he says, is the insignificant character of the symptoms which, in the majority of cases, it produces. In the typical diplobacillus catarrh there is only a moderate redness about the inner angle, while the subjective symptoms consist chiefly in an itching which many patients bear with composure. The discharge is so scanty that the lids are not stuck together in the morning, and the bacteriologist is not especially tempted to investigate it. In fact, the appearances in the majority of cases hardly suggest a specific infection of the conjunctiva, but rather a casual irritation. In quite a number of patients the eyes do not look inflamed at all, and the discharge is not in excess of that which one often sees in practically normal eyes; none at all being seen on a casual inspection, but on carefully examining the innermost angle of the palpebral fissure a speck of mucus no bigger than a pin's head can be discovered which is often swarming with the diplobacilli. The subjective symptoms in such cases are often quite misleading, the sole complaint of some patients being that they can not read at night. There are two forms of the disease which without the aid of the microscope must fre-

quently be called trachoma. One of these is the acute form, with rather profuse secretion and marked swelling and roughness of the retro-tarsal folds; and a chronic form, in which the patient presents himself with a set of symptoms such that until one has been put on his guard, a snap diagnosis of chronic trachoma is almost sure to be made on first examination. The eyes are red and watery, half-dry secretions cover the edges of the lids, and retro-tarsal folds are moderately rough and red. The tarsi, however, are but slightly affected. This form occurs chiefly among the poorer classes of Russian Jews and is apparently the product of dirt, neglect and slight eversion or closure of the lower tear points. In the treatment of this affection Gifford employs chlorid of zinc, one grain to the ounce. In the more obstinate cases he uses a 2 per cent. solution.

Colorado Medicine, Denver.

October.

- 75 A Method for Measuring Venous Blood Pressure in Man. H. Sewall, Denver.
- 76 Ocular Injuries. M. Black, Denver.
- 77 Medical Laws and the Influences That Mold Them. S. D. Van Meter, Denver.
- 78 Silver Salts in Ocular Therapeutics. G. F. Libby, Denver.
- 79 Deforming Injuries of the Ligaments at the Wrist Connecting with Fractures. G. W. Wiel, Denver.
- 80 Chemie Composition of Medicinal Plants. E. C. Hill, Denver.

Kentucky Medical Journal, Louisville.

December.

- 81 *Annual Address of President of the Kentucky State Medical Association, Louisville, October 18, 1905. F. H. Clarke, Lexington.
- 82 Symptomatology and General Management of Typhoid Fever. O. B. Demaree, Frankfort, Ky.
- 81.—See abstract in THE JOURNAL, Nov. 4, 1905, page 1430.

Journal of Cutaneous Diseases, New York.

December.

- 83 Alopecia Areata, as Associated with Nail Changes. G. W. Wendle, Buffalo.
- 84 Treatment of Ichthyosis. G. T. Jackson, New York.
- 85 Notes Made During a Recent Visit to Christiania and Bergen. J. A. Fordyce, New York.
- 86 Work Accomplished by the French Society of Social and Moral Prophylaxis. E. L. Kewes, Jr., New York.
- 87 Treatment of Chancroidal, Tertiary and Varicose Ulcerations by High-Frequency Spark. G. M. MacKee, New York.

Oklahoma Medical News-Journal, Oklahoma City.

December.

- 88 Judicial View of Insanity Experts. B. F. Burwell, Oklahoma City.
- 89 Methods of America's Great Surgeons. A. L. Blesh, Guthrie, Okla.
- 90 Case of Fulminating Appendicitis. A. N. Wiley, Shawnee, Okla.

Interstate Medical Journal, St. Louis, Mo.

December.

- 91 Plea for Early Operation in Cancer of the Stomach. N. B. Carson, St. Louis.
- 92 Impressions from a Cursory View of Some Japanese Hospitals. F. A. Glasgow, St. Louis.
- 93 Maternal Impression Superstition and Why It Survives. E. T. Shelly, Atchison, Kan.

Northwest Medicine, Seattle, Wash.

December.

- 94 Experience in Obtaining Medical Legislation. F. H. Luce, Bismarck, Wash.
- 95 Status of Medicine in the Cure of Chronic Nephritis. G. S. Peterkin, Seattle.
- 96 Early Diagnosis of Tuberculosis of Lungs and Pleura. C. Quevill, Tacoma.

Medical Fortnightly, St. Louis, Mo.

December.

- 97 Water: Its Properties and Uses. I. C. Ballard, Leesburg, Ala.
- 98 Female Specific Infection—Duty of the Family Physician. J. T. Redick, Paducah, Ky.
- 99 Case of Myxedema. L. J. Harvey, Griggsville, Ill.
- 100 Pelvic Abscess. H. Hart, Quincy, Ill.
- 101 Nasal Diptheria. L. D. Brose, Evansville, Ind.

American Practitioner and News, Louisville, Ky.

December.

- 102 Meningitis. P. F. Barbour, Louisville.
- 103 Treatment of Enlarged Prostate. J. R. Wathen, Louisville.
- 104 Nephritis. H. R. Manning, Louisville.
- 105 Functional Disease. B. F. Zimmerman, Louisville.
- 106 Abuse of Privileges of Free Dispensaries and Hospitals. C. D. Pence, Chicago.
- 107 Dilatation of the Anal Sphincters. C. J. Drueck, Chicago.
- 108 Commitment of Insane Patients in Cook County, Ill. G. B. Haskin, Chicago.
- 109 Case of Sporadic Elephantiasis. G. B. Lake, Wolcottville, Ind.
- 110 Pubiotomy for Selected Cases of Obstruction to Parturition by the Contracting Pelvis. L. J. Pritzker, Chicago.

Virginia Medical Semi-monthly, Richmond.

December.

- 111 Remarks on Gonorrhea. H. McGuire, Alexandria, Va.
- 112 Unruptured Tubal Pregnancy of Four Months' Development. J. W. Rové, Washington, D. C.
- 113 Surgical Treatment of Nephritis. G. P. LaRozne, Richmond.
- 114 Resection of the Ileum with End-to-End Approximation by the Connell Stitch. T. M. Parkins, Staunton, Va.
- 115 Practical Value of Scientific Aids in Diagnosis. W. S. Whitmore, Mt. Sidney.
- 116 The Physician as a Citizen. S. W. Rodgers, Staunton, Va.
- 117 Principles of Surgery. S. Mc. Gwire, Richmond.

Kansas City Medical Index-Lancet.

December.

- 118 Case of Coxa Vara Adolescentium. A. E. Hertzler, Kansas City.
- 119 Lectures on Nervous and Mental Diseases. J. Punton, Kansas City.
- 120 Ocular Sequela of Diphtheria. J. W. Sherer, Kansas City.
- 121 Vaccination as a Preventive of Smallpox and Its Legal Status. O. L. McKillip, Kansas City.
- 122 Congenital Occlusion of the Cervix Uteri. G. B. Norberg, Kansas City.

Medical Standard, Chicago.

December.

- 123 Pathogenesis of Splanchnoptosis. B. Robinson, Chicago.
- 124 Internal Hemorrhoids. C. J. Drueck, Chicago.
- 125 Psychology of Disease. M. M. S. Johnstone, Chicago.
- 126 Diabetes Mellitus. H. H. Sutton, Aurora, Ind.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

December 23.

- 1 *Modern Fashions on Surgery. J. L. Thomas.
- 2 Value of the Sigmoidoscope in the Diagnosis Between Primary and Secondary Colitis. C. P. L. Mumery.
- 3 Wandering Spleen: Hemorrhage Within the Capsule; Splenectomy; Recovery. C. P. Child.
- 4 *Puerperal Eclampsia. R. Dunlop.
- 5 Surface Tension of Urine in Health and Disease. W. D. Donnan and C. F. Donnan.
- 6 *Cause of Detachment of the Retina. J. A. Craig.

1. Fashions in Surgery.—Thomas favors the wearing by operators of a sterilized over-all, made long enough to prevent the surgeon's hands from coming in contact with his nether garments. The sleeves should be long enough to cover the forearm down to the wrist. The over-all possesses a bib with which the surgeon can cover his mouth and nostrils by slipping the tapes around the ears and tying them under the chin. The bib is necessary for a surgeon who has a long, flowing beard or has a cold, and also to those who can not keep their mouths closed during operations, or who perspire freely. A sterilized cap also is essential, he says, for surgeons who wear long hair, or who are short-sighted, or who go in for motoring. A surgeon, in order to be *de rigueur*, should wear permeable thread gloves which are sufficient protection against a successful invasion by germs of the field of operation in aseptic or clean cases. Thomas also urges that the surgeon protect himself against personal contamination during the examination of patients.

4. Puerperal Eclampsia.—Dunlop analyzes 50 cases. Edema was present in 30 cases, but was not a criterion of the imminence of convulsions. One of the most important, because one of the most suggestive and unequivocal, of the prodromal symptoms is pain in the epigastrium. The pain is at first slight, or there may be only a sense of discomfort; but when this symptom is well-marked, it becomes later so intense that the woman is rendered prostrate and is forced to cry out. It may be associated with pain in other regions of the abdomen or in the loins, and may be accompanied by vomiting or difficulty and oppression in breathing. These concomitants are most frequent when the pain has become intense and continuous, and betoken the imminence of convulsions. In all cases a very rapid involution of the uterus took place. In Dunlop's eight personal cases the delivery of the woman stopped the convulsions in one case; in two cases it mitigated the severity of the convulsions, and in four cases had either no effect or a bad one. Of the remaining 42 cases, two patients died undelivered; seven occurred in the puerperium; in twenty-one cases delivery had no effect; in four the convulsions ceased at delivery; in three the convulsions were mitigated after delivery, and in five they were more severe and frequent after than before delivery.

6. Detachment of Retina.—Craig reports a case in which, after all other measures failed, he evacuated the subretinal fluid by scleral puncture, using for the operation an ordinary iridectomy knife. The subretinal fluid came away freely, and examination of the eye immediately afterward with the ophthalmoscope showed the originally grey detached retina back in position with its pink color restored, the subjective sensation of a grey veil simultaneously disappearing. He followed the puncture by another subconjunctival injection and bandaged the eye firmly with a pressure bandage. In four days the retina again became detached, with return of the subjective phenomena, and he decided again to puncture and, in addition, to apply the galvano-cautery over the seat of operation, with the intention of setting up enough adhesive inflammations of the parts to fasten down the retina. This was done on the twelfth day from the institution of the treatment, and again the immediate effect was completely successful. For eight days after this the retina remained in position, and again the detachment recurred. The former results of the operation had been favorable enough to justify a repetition of the procedure, and this was again done, now near the end of the fourth week from the beginning of the treatment. On this occasion he dissected back a flap of conjunctiva in order to allow the puncture to be made as far back as possible, and the cautery was energetically used. After this no signs of detachment returned. As a precautionary measure, however, he thought it advisable again to apply the cautery at the end of a week in order to cause further inflammatory adhesions. On testing subjectively it was now found that there was a relative color scotoma in that portion of the field corresponding to the seat of the detachment, that is to say, that color sensations as determined by a blue test object were, according to the degree of illumination, confused or quite lost over this area, although the object itself could be seen. Examination of the fundus showed slight opacity and one or two punctate deposits of exudate in the affected portion of the retina. The normal pinky appearance, however, was quite restored. More peripherally the position of the punctures and cauterizations could be easily seen as a deeply-scarred and pigmented surface. The dorsal position was maintained for ten days further and then the patient was allowed to go home. Three weeks later the condition was still found quite satisfactory, central vision (corrected) being 6/6, and the only visual defect being a relative color scotoma over an area of the field extending from the thirtieth to the sixtieth degree in the lower half. On November 16 this scotoma had so improved that the patient could appreciate colors, but blue appeared darker. The patient was last seen by Craig in April, 1905—that is, twenty months after the termination of treatment. Vision was still 6/6, and no sign of detachment could be detected.

The Lancet, London.

December 23.

- 7 The Albuminuria of Pregnancy and the Kidney of Pregnancy. G. F. Black.
- 8 *Chronic Pancreatitis Probably Starting in an Accessory Pancreas. A. W. M. Robson.
- 9 *Surgical Treatment of Tuberculous Glands in the Mesentery. J. M. Corner.
- 10 Carcinoma of the Testicle. A. G. R. Foulerton.
- 11 Huntington's Chorea and Dementia. R. Jones.
- 12 *Prevention of Appendicitis. W. J. Tyson.
- 13 *Late Meat Alimentation in Tuberculosis. R. W. Philip.
- 14 *Ventral Fixation of the Uterus by a New Method. W. G. Richardson.

8. Chronic Pancreatitis.—Robson's case is interesting because it was unaccompanied by gallstones and was apparently due to an extension of catarrh from the duodenum up the pancreatic duct. The interstitial changes only involved the head of the pancreas.

9. Tuberculous Glands of Mesentery.—Corner cites 5 cases. The first case, in a man, aged 41, illustrates the co-existence of atrophic appendix and a large caseous gland in the mesentery of the small intestine. The gland, about the size of a large walnut, was incised and the caseous material removed. The walls were curetted and were then invaginated with silk stitches and the cavity left by the removal of the caseous matter was obliterated. The patient recovered. The second patient had many tuberculous glands in the mesentery compli-

cated by an active appendicitis. The appendix was removed, but the glands were not touched. The third case was that of a boy with whom the diagnosis rested between tuberculous glands in the mesentery and sarcoma. The glands were removed and the patient made a perfect recovery. The fourth case was of particular interest on account of the occurrence of colicky pains. These and the looseness of the bowels suggested a tuberculous enteritis. Although the disease was very extensive, the glands were removed and the patient was very much improved, but still had occasional and unexplained attacks of diarrhoea. The fifth case gave every evidence of being one of general military tuberculosis; nevertheless the mesenteric glands were shelled out and everted. The patient improved a little, but after a few days the meningitic symptoms became more pronounced. The patient died in a few weeks, and the necropsy revealed a general military tuberculosis.

12. Prevention of Appendicitis.—Tyson is of the opinion that careful regulation of the food, both as to quantity and quality, the manner of eating, the avoidance of constipation and a correct method of stooling are important factors in the prevention of appendicitis. He believes that the old-fashioned and natural method of defecating on the ground, with the thighs flexed on the abdominal walls, so that in straining the inguinal and femoral canals are practically closed, is made more conducive to the thorough emptying of the bowel and, therefore, less likely for obnoxious and poisonous materials to be left behind. The practice of kneeling down, bringing the buttocks in contact with the heels, and the anterior chest wall in contact with the thighs, three or four times every morning, is a good and beneficial exercise, which he has practiced for some time past and which he recommends to others.

13. Raw Meat in Tuberculosis.—Philip discusses his experience with the use of raw meat in the treatment of pulmonary tuberculosis. His results have been exceedingly satisfactory.

14. Ventral Fixation of Uterus.—In order to avoid certain defects in the ordinary procedure of ventral fixation of the uterus, Richardson devised a new method which has yielded excellent results in 12 cases. It is intended for the relief of patients suffering from severe forms of prolapse of the uterus, with cystocele and rectocele, with or without rupture of the perineum. The method is free from the immediate danger of hemorrhage and from the remote danger of long bands of adhesions, and it secures the uterus in its new position in such a way that it can not possibly drop back. The operation is described as follows:

1. Open the abdomen in the middle line from the pubes to the umbilicus.
2. Retract the left side of the wound and take hold of the left round ligament of the uterus, then draw on it until it is tense between the point and the inguinal canal. Catch it with two clip forceps as near to the inguinal attachment as can conveniently be done and divide it between the clips. Ligate the distal end and remove that clip, dropping the stump. Retain the clip on the proximal divided end.
3. Repeat this on the right side.
4. By means of the two clips on the proximal divided ends of the round ligaments draw the uterus up toward the abdominal wall. Some force will thus be made on the peritoneal attachments of the round ligaments and, as a rule, the peritoneum will stretch sufficiently to allow the uterus to come up into the wound, even, in some cases, as high up as the umbilicus, but it may be necessary to make a new incision in the skin on the edges of the peritoneal attachments, in which case care must be taken not to cut right up into what may be called the "axilla" of the round ligaments lest any vessels be injured. Lift the uterus by its round ligaments as high as the abdominal wall it will reach without undue tension and with the eye mark the position. In some of the cases of complete procidentia the uterus was purposely left outside the vulva before the abdomen was opened and it came up without any difficulty when drawn on by the round ligaments.
5. At the place to which the fundus of the uterus reaches catch hold of the skin and superficial fascia on the left side of the wound and draw on them at the same time separating them from the abdominal aponeurosis by thrusting in the handle of a scalpel as far as the outer edge of the rectus abdominis muscle. Withdraw the handle of the scalpel and pass a pair of clip forceps into the track thus made as far as a point one and a half inches from the middle-line incision and then thrust the clip forceps through the aponeurosis, the rectus muscle, and the peritoneum into the peritoneal cavity; with the clip catch hold of the end of the left round ligament and draw it through the abdominal wall, keeping the clip attached.
6. Repeat this on the right side and then by drawing on both round ligaments the anterior surface of the uterus will be seen to come up and to lie against the anterior abdominal wall.
7. Whilst an assistant keeps up traction on both round ligaments and retains the uterus in its new position sew up all the abdominal wound, except the superficial fascia and the skin, in layers with catgut. Let one or two of the sutures of the peritoneal layer be passed through the peritoneal coat of the uterus and thus occlude

the passage between the abdominal wall and the uterus, through which it is conceivable that a loop of small intestine might find its way and so become obstructed if the passage were not closed. It is for that reason only and not for the purposes of suspension that the opposed surfaces of the uterus and the abdominal wall are sutured together.

8. Lay the left round ligament at right angles over the front of the aponeurosis and across the middle line as far as the point at which the right round ligament emerges. Ligate the left round ligament at that point and use the ends of the ligature to sew the ligament to the aponeurosis there. Cut off any redundant ligament.
9. Do the same with the right round ligament and the two ligaments will then lie side by side across the front of the aponeurosis. Additional security is made if a few sutures attach the edges of the round ligaments to one another and also to the aponeurosis, but care must be taken to see that too much of each ligament is not included in each suture lest the blood supply beyond be diminished.
10. Suture the skin and the operation will be completed.

The method is said to possess the following advantages: 1. It is a simple operation in which there is a minimum amount of bleeding and shock. 2. It can be performed rapidly, a point of considerable importance in fat women. 3. There is no fear of hemorrhage from needle punctures of the uterus. 4. Patients have very little pain during the first few days as compared with those on whom the usual operation has been performed. They are able to be moved in bed more easily and, without dragging pain, can lie comfortably on either side. 5. There are no sutures to be removed. 6. There is no fear of the formation of long bands of adhesions. 7. The uterus is permanently held in excellent position.

Journal of Tropical Medicine, London.

December 15.

- 15 Report on the Dengue Epidemic in Brisbane in 1905.
- 16 Mouth-parts of Biting Flies. G. M. Giles.

Bristol Medical-Chirurgical Journal.

December.

- 17 The Family Doctor. J. Dacre.
- 18 Two Cases of Myasthenia Gravis. J. M. Clarke.
- 19 Pathology and Treatment of Graves's Disease. R. S. Smith.
- 20 Voluntary Notification of Phthisis, and the Municipal Attitude in Bristol in regard to the Disease. D. S. Davies.
- 21 Study of the Record of One Hundred and Fifty-Five Cases of Operation for Appendicitis. (Continued.) C. A. Morton.

Indian Medical Gazette, Calcutta.

December.

- 22 First Case of Leishman-Donovan Disease Occurring in a European in Bombay.
- 23 Bacteriological Uses of Chlorine and Iodine: Their Application to the Purification of Water on Field Service. V. B. Nesfield.
- 24 Cataract Extraction in the Capsule. J. C. S. Osley.
- 25 Case of Typhoid with a Large Number of Complications. R. H. Castor.
- 26 Anatomy of Plague Buboes. E. F. G. Tucker.

Glasgow Medical Journal.

January.

- 27 Treatment of Purulent Otitis Media and Its Complications. J. G. Connal.
- 28 Gummatus Synovitis of Many Joints, Closely Simulating Rheumatoid Arthritis in a Congenitally Syphilitic Child. J. W. F. Findlay and R. L. Riddell.
- 29 Chronic Inversion of the Uterus, Resulting from Carcinoma. J. N. Stark.
- 30 Acute Exudative Choroiditis, Complete Amaurosis of Two Weeks Duration; Recovery. T. Forrest.
- 31 Sleeping Sickness in Uganda. E. D. W. Greig.
- Presse Médicale, Paris.
- (No. 90.) *Le séro-prognostic des pleurésies tuberculeuses. I. Courmont (Lyons).
- *La septémie des plaies par autoinfection et son traitement par le sérum du cheval chargé d'antitoxine. P. Jayle.
- (No. 91.) La rhinométrique clinique. M. Lermoyez.
- Glycosurie alimentaire et syphilis secondaire. A. Paris and A. Dubrovic.
- L'adénoviel dans le traitement des hémoptysies. A. Martinet.
- (No. 92.) Pathologie expérimentale et comparée du tube digestif. H. Roger.
- Alimentation dans les gastro-entérites infantiles. J. Comby.
- (No. 93.) Technique de l'extirpation des tumeurs malignes du maxillaire supérieur. J. L. Faure.
- Variations de la composition du lait de femme (of human milk). L. Deval.
- Représentation graphique pratique des aliments et des régimes. A. Martinet.
- De l'emploi de la scopolamine en obstétrique. A. Laurendeau (Canada).
- (No. 94.) L'insémination nasale. L. Vacher.
- (No. 95.) L'éducation clinique. P. Guyon.
- Réseau lymphatique du nez et des fosses nasales (lymphatics of nose). M. André.
- (No. 96.) Extraction de fragments de sondes brisées dans la vessie. Emploi du cystoscope à vision directe (Broken sound in bladder). G. Luyt.
- (No. 97.) Les épithéliomas en surface des muqueuses leucoplasiées. R. Lecras.
- Le micrococcus catarrhalis. F. Le Damany.
- Liste et définition des déviations de l'utérus. F. Jayle.
- (No. 98.) Les expériences de vaccination antituberculeuse à l'animal. J. Massonnier. See news item on page 50 of THE JOURNAL.

- 51 *Les syndromes surrenaux (suprarenal). L. Bernard.
- 52 *Myxœdema et maladie du sommeil (sleeping sickness). A. Lorand (Carlsbad).
- 53 (No. 99.) Mouvement de la population en France. See news item, page 1895 of last volume of THE JOURNAL.
- 54 L'olfactométrie clinique. M. Lermoyez.
- 55 Infarctus hémorrhagique de l'intestin grêle par thrombophilie mésentérique. A. Mouchet.
- 56 Examen de l'Apex of Lung.—Manœuvres de clinique médicale. M. Lenoir. (Previous parts in Nos. 94 and 96.) Profusely illustrated.
- 57 Infection du fœtus d'origine sub-hépatique (infection of liver from above). Ribadeau-Dumas.

32. Sero-prognosis of Tuberculous Pleurisy.—Courmont's research with 115 patients during the last seven years has confirmed, in his opinion, the hypothesis he advanced in 1898 that there is some connection between the agglutinating power of the pleural effusion in tuberculous pleurisy and the evolution of the disease. The mortality is about 25 per cent. of those individuals with agglutination and 75 per cent. among those whose pleural fluids fail to agglutinate. The proportion of recoveries is higher, the more pronounced the agglutinating faculty. Agglutination, he thinks, is a reaction of defense, or at least it parallels the defensive reactions of the organism. Its intensity is in inverse proportion to the gravity of the disease.

33. Septicemia from Autoinfection Treated with Hot Horse Serum. Jayle describes 2 cases of septicemia resulting from endogenous infection. A laparotomy was performed on one patient who had long had a chronic suppurative in the pelvis, complicated recently with intestinal obstruction. The laparotomy wound became gangrenous. Gangrene also developed in the second case; the patient was a young man with a traumatic retroperitoneal hematoma that had become infected from the intestines. The condition of each patient was very serious, and the same micro-organisms were found in the gangrenous wounds as had been cultivated from the fetid pus removed during the operation. There was almost total absence of leucocytes in the wounds. Recalling the claims made by Petit in regard to the leucocyte-attracting power of hot horse serum, Jayle dressed the wounds with this, and found its local effect absolutely perfect. The large gangrenous wound was cleansed with peroxid of hydrogen and then dressed with wicks soaked in 90 gm. of horse serum and two tubes of the desiccated serum. The serum was applied hot, morning and night, and by the fourth day there was no longer any fetid odor and recovery progressed rapidly. He adds, in conclusion, that patients with putrid septicemia generally die from heart failure; consequently it is of the utmost importance to sustain the heart. He used caffeine (1 gm. in the twenty-four hours), camphorated oil (1 or 2 gm. of a 1 to 10 solution every three hours), ether and artificial serum. Not more than 1 or 1.5 liter of the artificial serum should be injected during the twenty-four hours. The defective permeability of the kidneys and the dilatation of the right heart should be the guide for these measures. If the heart is dilated, 100 gm. of blood should be withdrawn before injecting 500 gm. of the artificial serum. If the kidneys are not acting, he recommends an injection of pilocarpin.

51. Suprarenal Syndromes.—Bernard uses the term "hyper-epinephrie" to designate excessive functioning of the suprarenal glands, while "hypoepinephrie" indicates insufficient functioning. Each has its syndrome, and there is also the Addisonian syndrome. He describes them all in detail, emphasizing the conclusions from recent researches to the effect that excessive functioning is sometimes the origin of arterial hypertension, with its train of consequences. Josué found that repeated injections of adrenalin induced the development of atheromatous lesions in the aorta of animals. Vaquez also ascribes to excessive functioning of the suprarenals the transient arterial hypertension observed in the course of acute affections, such as lead colic and croup, also the oscillating or unstable hypertension sometimes observed, and the permanent hypertension which accompanies chronic affections, such as interstitial nephritis or lead poisoning. This conception rests on two hypotheses, namely, that a series of phenomena attributed to other causes are, in reality, due to exaggerated arterial tension, and, further, that excessive functioning of the suprarenals is the cause of increased tension. Further research is needed in

this line. Defective functioning of the suprarenals causes a syndrome characterized by asthenia, arterial hypotension, and various nervous and digestive troubles. The latter are generally repeated vomiting, accompanied by obstinate constipation, or there may be a choleric form of diarrhea, especially in children. This syndrome may appear in an acute, subacute or chronic form. The Addisonian syndrome includes (1) melanoderma and possibly certain painful and digestive phenomena, constituting the sympathetic syndrome; (2) the syndrome of suprarenal insufficiency in its chronic form, complicated by the syndrome of defective functioning of the suprarenals, and (3) general symptoms due to primary cause. In a later article he proposes to discuss the share of these syndromes in inflammation and tumor of the suprarenals and in syphilis and tuberculosis.

52. Myxedema and Sleeping Sickness.—Lorand ascribes sleeping sickness to the degeneration of the thyroid gland under the influence of the toxins of the trypanosoma.

Semaine Médicale, Paris.

58 (XXV, No. 51.) *Les causes de la paralysie complète du nerf laryngé inférieur ou recurrent. E. Felix (Bucharest).

58. Causes of Paralysis of Inferior Laryngeal or Recurrent Nerve.—Felix reviews the long list of causes which may induce complete paralysis of the inferior or recurrent laryngeal nerve. The list is a long one, from affections of the heart and large vessels, tumors in the mediastinum, esophagus or thyroid gland to affections of the respiratory organs as local causes, also causes acting from a distance, such as affections of the brain or medulla. The list concludes with chemical or microbial intoxications as general causes. The most frequent causes, however, are (a) aneurism of the aorta and tracheo-bronchial adenopathies, which should always be suggested by the discovery of recurrent paralysis.

Berliner klinische Wochenschrift.

- 59 (XLII, Ewald Fest-Nummer, No. 44.) *Judgment of Infections Processes by Determination of Chlorids, Nitrogen and Volatile Fat Acids.—Zur Beurteilung infektiöser Prozesse, etc. E. v. Leyden and F. Planchental.
- 60 Die klinische Bedeutung der fettigen Degeneration des Herzmuskels anämischer Individuen (fatty degeneration of heart in anemic individuals). F. Kraus.
- 61 *Lage und Gestalt des Magens unter normalen und pathologischen Verhältnissen (shape and position of stomach). E. Ponfick.
- 62 Hydrotherapie bei Magenkrankheiten (gastric affections). Bräuer.
- 63 Beschaffenheit des Harns und den Stoffwechsel im Tetanus (urine and metabolism in tetanus). II. Senator.
- 64 Zur Antithrocin-Behandlung der Basedow'schen Krankheit. A. Enlbgen.
- 65 Ueber Thrombose der Mesenterial-Gefässe (vessels). II. Linder.
- 66 *Sources of Error in Examining Stomach Content.—Ueber einige Fehlerquellen der Mageninhaltuntersuchung. I. Ross.
- 67 Ueber die praktische Bedeutung der Romanoskopie. Th. Rosenheim.
- 68 Are the Proteolytic and Milk-Coagulating Effects of Gastric and Pancreatic Juice Due to One and the Same Enzyme? J. C. Hemmeter (Baltimore).
- 69 Die Funktion der Noduli Arantii. J. R. Ewald.
- 70 *Sur la question du diabète rénal. R. Léprieu.
- 71 Familiäres Vorkommen von Acromegalie und Myxödem auf hereditärer Grundlage. P. K. Pol.
- 72 Ueber die Radium-Behandlung des Oesophagus-Krebses (cancer). M. Einhorn (New York).
- 73 *Fall von Abdominaltrybus unter aussergewöhnlichen Umständen. W. Kernig.
- 74 *Zur Frage der Nährkystoren (nutrient enemas). II. Strauss.
- 75 *Zur Klinik des Glukosurcorrhoe (Fälle von familiärem Glukosurcorrhoe). M. Picard.
- 76 *Ist die Arteriosklerose eine Allgemeinkrankheit (constitutional affection). Bäumler.
- 77 *Care of the Health in Cholera Times.—Öffentliche und häusliche Gesundheitspflege besonders in Cholerazeiten. G. Meyer.
- 78 *Fermentation Test for Sugar in Urine.—Ueber die Gärungsprobe zum Nachweis von Zucker im Harn. E. Salkowski.
- 79 *Ueber den Missbrauch medikamentöser Abführmittel bei habitueller Obstipation (abuse of purgatives). C. Jürgensen.
- 80 Phosphorus Poisoning and Atrophy of Liver.—Phosphorvergiftung und Leberatrophie. L. Riess.
- 81 Physiologische Störungen körperlicher Degeneration. A. Albu.
- 82 *Zur Behandlung des Diabetes insipidus. C. Posner.
- 83 Gastritis chronica cum Achylia gastrica bei Lungenphthisis. K. Faber (Copenhagen).
- 84 Schildkröten- und Thyms bei der Basedow'schen Krankheit (thyroid and thymus). D. v. Hansemann.
- 85 Utilization of Glucosamin.—Verwertung des Glucosamins im Tierkörper. R. Bial.
- 86 Fälle von Rotalismus. Collatz.
- 87 *Zur Pathologie der Jackson'schen Epilepsie und zu ihrer operativen Behandlung. F. Krause.
- 88 Zur Frage der Frühoperation der Perityphlitis (early operation). W. Ball.

- 89 Zur Kenntnis der acuten Pankreas-Erkrankungen. L. Wrede.
- 90 Affection of Cecum.—Zur Klinik der Cecum-Erkrankungen. Dege.
- 91 Ueber pylephlebische Leber-Abscesse (in liver). E. Heymann.
- 92 "Excessive Secretion of Gastric Juice. Ueber Magenschleimfluss (Gastromyxorrhoe). L. Kuttner.
- 93 "Zur Kasuistik der Bronchus-Gallengangs-Fisteln. F. Elcher.
- 94 Fall von Ulcus pepticum jejuni nach Gastroenterostomie. A. Jahr.
- 95 Zur Frage des Emotions-Icterus. P. Weiss.
- 96 Ueber palpable Nieren bei Kindern (kidneys in children). O. Blum.
- 97 Determination of Lab Ferment.—Ueber eine neue Methode der Labbestimmung und ueber das Verhalten des menschlichen Magenlins unter normalen und pathologischen Zuständen. U. Blum and E. Fald.
- 98 Large Intestine Superposed on Enlarged Spleen.—Die Ueberlagerung der vergrösserten Milz durch den Dickdarm. R. Oestreich.
- 99 Fall von malignem Hypernephrom bei einem Kinde (in child). W. C. MacCarthy.

59. Judgment of Infectious Processes by Determination of Chlorids.—The findings in a case of puerperal sepsis and in two of pneumonia are tabulated, the daily record of the elimination of nitrogen, chlorids, volatile fat acids and the amount of urine, with the temperature. The volatile fatty acids, the authors state, increase enormously when a pneumonic exudate is being reabsorbed, also the amount of chlorids. The increase in the latter is also characteristic of reabsorption of edema, but the fatty acids do not increase in this case. Convalescence in pneumonia is indicated by the balance between the chlorids and nitrogen, showing that the organism does not retain a large proportion of the nitrogen to make up the deficit in the tissues, as in a long wasting disease. When the fatty acids return to the normal figure, it may be assumed that the reabsorption of the exudate is completed.

61. Shape and Position of Stomach.—Ponfick asserts that the stomach lies perpendicularly in by far the larger majority of normal persons. In case of affections of the surrounding organs crowding on the stomach, it seeks the position which will interfere the least with its functions. This results in its assuming most remarkable positions in some cases, as it has a wide play in its normal range of movement.

66. Sources of Error in Examining Stomach Contents.—Boas thinks that the test breakfast is a much more reliable means of investigation than the test meal, for reasons which he enumerates. The original test breakfast is 1 roll (about 35 gm. in weight) and 400 gm. water or the same amount of tea without any addition, the stomach contents to be withdrawn exactly one hour afterward. The first test breakfast should be preceded by ascertaining whether or not the stomach is actually empty. Neglect of this preliminary examination is liable to nullify the results of the test. Unless the test breakfast is given in the morning as the first meal, the findings are also liable to be misleading. The variations in the secretions at different times must also be taken into account, especially those during menstruation, so that a single examination seldom affords a decisive oversight of the conditions. Another source of error is in the composition of the fasting stomach content in case of retention. It is wise in such cases to determine both qualitatively and quantitatively the proportions of lab and pepsin, as well as of hydrochloric acid. Pathologic lactic acid fermentation is generally accompanied by loss of these enzymes, and knowledge of this may explain dubious conditions. Another source of error is the presence of bile, blood, mucus or saliva in the stomach content. Quantitative determination of the hydrochloric acid is impossible under these circumstances, and qualitative tests are decisive only when they are positive. The reflow of bile into the stomach in case of deep stenosis of the duodenum has a marked influence on the acidity of the stomach content. Tests for gastro-ecorrhea are liable to be misleading, as the preliminary rinsing is apt to induce a reaction in the way of secretion, and as it is impossible to be sure that all the liquid introduced has been taken out. Determination of the acidity of stagnating stomach contents and also of the secretions in the fasting stomach is of little diagnostic value. Boas further argues that the presence of normal or increased hydrochloric acid, with only few remains of the test breakfast, is evidence that the motor function of the stomach is comparatively unimpaired, but, on the other hand, when the stomach is found still

more or less full, we have no right to conclude from this that the motor function is defective. This conclusion is justifiable when the proportion of hydrochloric acid is abnormally small, with as much as 150 or 200 c.c. of stomach content, unless it is evident that there are no remains of the food in the fluid. He doubts the practicability and reliability of the new methods of stomach testing that have been introduced, and regards the old Leube method as still superior. The only drawback is that two or even three examinations with the sound are necessary to obtain unmistakable results. If a better method should be discovered, it would be wise to combine it with the test breakfast, which has stood the test of time and experience and conforms to the customs of all civilized lands. It is free from the drawbacks of the test meal, especially the interference with the tests for "occult hemorrhage" by the presence of the beefsteak in the stomach.

70. Renal Diabetes.—Lépine relates experiments with dogs and clinical experience which confirm the existence of a toxic glycosuria (with phloridzin) of renal origin. He is inclined to believe that there may be also a nervous glycosuria due to some (vascular) renal process. The existence of a renal diabetes in man, according to Klemperer's theory, is not irrational, but no absolutely convincing cases have been reported to date. He has had several patients under observation for years in whom glycosuria alternated with phosphaturia.

73. Typhoid Fever Plus Shot Wounds of Abdomen.—The patient was a young woman who was shot in the abdomen, the injury requiring resection of the ileum for 98 cm., or about a yard. The course of the case showed that the injury had been received during the onset of typhoid fever. An epidemic of typhoid fever prevailing at the time was of an unusually severe type, but the disease was very mild in this case, possibly owing to the fact that the part of the bowel removed was exactly the part generally affected by the typhoid process.

74. Nutrient Enemata.—The experiences related by Strauss indicate that Wernitz's technic has superior advantages. The enema is given very slowly with large amounts of fluid under very slight pressure. The tube has a shoulder, which prevents its slipping out of the anus, and a stopcock which is turned so that only a drop at a time enters the rectum. A quart of the fluid is thus given in the course of an hour under pressure of about 27 cm. Fifty enemata were given in this way, and all were retained for three or four hours or longer, and more than half of the nourishment thus given was refound in the stools. Two patients received twelve and fourteen of these enemata in the course of a week without irritation of the rectum. His formula is 1 l. water, 25 gm. of an easily soluble albumin, 50 gm. grape sugar, 50 gm. cream and a little salt, with .2 gm. menthol or .5 gm. thymol or 1 gm. salicylic acid. His research on the precipitins after ingestion of albumin showed that there is no elimination in the urine of unpredigested albumin given in an enema.

75. Family Gastroecorrhea.—A mother and two sons, 16 and 18, respectively, began about the same time to present symptoms indicating gastroecorrhea, and the objective findings confirmed the diagnosis. No organic affection of the stomach could be detected in any of them.

76. Is Arteriosclerosis a General Affection?—Bäumler presents extensive arguments to sustain his view that the general affection observed in case of arteriosclerosis is secondary. The primary trouble, he thinks, is the disturbance in metabolism. At first it has nothing to do with arteriosclerosis, but is due mainly to nephritis of various origins. The consecutive disturbances in the circulation, he believes, are responsible for the arteriosclerosis.

77. Anti-cholera Education of the Public.—Meyer preaches the necessity for enlightening the public, but he distinctly warns against telling the layman things on which there is still a difference of opinion among scientists. Half-knowledge should be reserved for discussion in scientific circles, and the layman should be informed only in regard to useful things about which there can be no question. He quotes extensively from official and medical regulations during cholera epidemics in the early part of the last century.

78. Fermentation Test for Sugar in Urine.—Salkowski men-

tions a number of points which should be borne in mind in this test. The result of the test must be positive with sugar to .1 per cent. There must be no apparent positive effect in urine free from sugar. If the urine becomes ammoniacal at the close of the test it is a failure. Ammoniacal urine should be boiled before attempting the test. This is usually followed by an acid reaction. The fermentation test is not reliable with urine containing blood, pus, albumin or albumoses. Salkowski's technic consists in adding a scrap of compressed yeast (about .7 gm.) to 15 c.c. of urine in a conical glass, stirring gently and then pouring the fluid into a test tube, closing the outlet by pouring mercury into the bend, setting the tube aside for from twenty to twenty-two hours at a temperature not less than 30 or over 38 C.

79. **Treatment of Habitual Constipation.**—Jürgensen thinks that habitual constipation should be treated by hygienic measures, aided Nature, rather than by drugs. If a purgative has to be given regularly it should be one that merely helps to empty the bowels without altering the consistency of the stools or causing by-effects of any kind. He gives several prescriptions which have answered the purpose finely in his experience, preferring an herb tea infused for fifteen minutes, two cups taken with fifteen minutes' interval, half an hour before breakfast. One of his formulas for the herbs is equal parts of flax, flaxseed, flax, chamomile, herb, methua piperite, and rhiz. valeriana. About two tablespoonfuls for the two cups of boiling water.

82. **Treatment of Diabetes Insipidus.**—Posner describes the great benefit obtained in a neuroathenic woman presenting symptoms of diabetes insipidus when she was instructed to chew ordinary chewing gum or its equivalent. The thirst and the excretion of urine were notably reduced, while the urine became more concentrated. Prolonged chewing with the increased salivation is evidently an important aid in the treatment of polydipsia and polyuria.

87. **Operative Treatment of Jacksonian Epilepsy.**—Krause reviews his experience on this subject—12 operations—and on the electric diagnosis of cerebral disturbances. His article is profusely illustrated. In one case the evacuation of an encephalitic subcortical cyst cured epilepsy and mental impairment of long standing in a girl of about 15; the cure has been complete for twelve years to date. Faradic testing of the cortex in the operating room is an indispensable aid in locating the lesion. In one instance it showed exactly the spot at which to look for the tumor. Six cases are described in detail. In one of severe, typical epilepsy, the centers for the finger, hand, forearm and lower part of the face were involved. On exposing these centers nothing abnormal was found, but faradization of the arm center caused an incipient epileptic seizure. The part of the brain containing the above-mentioned centers was resected, the excised part measuring 23 by 15 by 20 mm., and to a depth of at least 5 mm. There have been no seizures since, and the patient is able to attend to a large business, although he occasionally feels a little twitching or cramp in a limb. Among the 12 patients operated on, 2 patients died. In one instance the fatal termination might possibly have been averted by operating at two or more sittings. The other patient suffocated in an epileptic seizure. Recurrence is more probable, Krause thinks, in the cases in which nothing pathological can be found.

92. **Treatment of Excessive Secretion of Gastric Juice.**—Kuttner applies the term gastromyxorrhoea to a condition in which large amounts of gastric juice are secreted by the fasting stomach, even although there may be merely the normal or a lesser proportion during digestion. An acute attack requires prompt lavage of the stomach which will sometimes abort it. Morphine seems to be the only effectual drug. The nervous condition should be treated with general measures, hygienic and tonic. The chronic affection requires frequent rinsing of the stomach. A course of mineral waters may prove effectual in some cases. The results of treatment have not been very encouraging in his experience.

93. **Broncho-Biliary Fistula.**—Fischer adds another to the 12 cases he has found in the literature, with an illustration of the postmortem findings in his case.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

- 100 (XXXI, No. 46.) *Influence of Emotions on Gastric Secretions.—Experimentelle Untersuchungen über den Einfluss von Affekten auf die Magensaftsekretion. A. Bickel.
- 101 *Zur Chemie des leukämischen Blutes (chemistry of blood). O. Schumm.
- 102 Ueber die Sprochache pallida Schaudinn. B. Lipschütz.
- 103 *Cystoskopie und Lithotripsie in verschiedenen Körperlagen (In different positions). O. Ringleb.
- 104 Acute Poisoning of Buccal Mucosa with Iodin.—Akute Vergiftung der Mundschleimhaut durch Iodinturpinpunctionen. A. Witzel.
- 105 (No. 44.) *Results of Scientific Trip to East Africa.—Vorläufige Mitteilungen über die Ergebnisse einer Forschungsreise nach Ostafrika. R. Koch.
- 106 Die diagnostische und therapeutische Bedeutung der Lumbalpunktion. H. Quinke. (Concluded.)
- 107 *Morbidly High Arterial Pressure.—Ueber die krankhafte Erhöhung des arteriellen Druckes. L. Krehl.
- 108 *Die chirurgische Behandlung von Kränkheiten des Gehirns. F. Krause.
- 109 *Die geburtsärztliche Behandlung bei Placenta prævia. H. Fritsch.
- 110 *Ueber die symptomatische Bedeutung der Blutungen aus den weiblichen Genitalien und deren Behandlungs-Grundsätze. A. Döderlein.
- 111 *Grundzüge einer Therapie der akuten Verdauungsstörungen des Säuglingsalters (infantile digestive disturbances). C. Hoessinger.
- 112 *Fall von akutem angioneurotischem Oedem. D. Herter.
- 113 Physicians' Accounts and Records.—Ueber ärztliche Buchführung. Hundestagen.

100. **Effect of Emotions on Gastric Secretions.**—Among the interesting experiments related by Bickel is one in which a dog with a Pawlow fistula and opening into the esophagus was worried by a cat while he was eating. The curves showing the amount of gastric juice secreted during sham feeding ranged usually between 100 and 190 during the hour following the sham feeding, gradually declining to 80 by the end of the second hour. When a cat was brought in a cage into the room and placed beside the dog while he was being fed, he became very much excited and angry, and only 20 c.c. of gastric juice were secreted during the first five minutes afterward. Examination at five-minute intervals showed that the secretion grew constantly less and less to practically zero by the end of half an hour. In another experiment the cat was not brought in until about half an hour after the sham feeding. The amount of gastric juice secreted had risen from 120 to 275 during this period, but in the next five-minute period, after the dog had been teased by the proximity of the cat, only 20 c.c. of gastric juice was secreted, and during the following hour the amount never increased beyond 60 c.c. The curves show, further, that, although the amount of the gastric juice was thus influenced so decidedly by the emotional disturbance, the digestive power of the juice remained at about the same level, horizontal during the tests, as well as during the undisturbed feeding. Bickel calls attention in particular to the fact that this inhibiting effect of an emotion on the gastric secretion persisted even after the cause for the emotion had been removed. The cat was only left in the room a few minutes, but the gastric secretions were evidently permanently checked for the time being by the dog's temporary excitement.

101. **Chemistry of Leukemic Blood.**—Schumm calls attention to an albumin-splitting ferment resembling trypsin in the blood in cases of leucal myelogenous leukemia.

103. **Cystoscopy and Lithotripsy in Different Positions.**—Ringleb gives illustrations of a table which allows a patient to be catheterized while lying face downward. There is a semi-circular recess in the lower end of the table which allows the catheter to be inserted readily in this position. It offers several advantages, as he describes. He calls it the "under the abdomen position," and commends it also for lithotripsy. He also advises changing the position to aid in catheterization.

105. **Results of Koch's Year of Research in Eastern Africa.**—The main results of Koch's scientific trip to Africa were summarized in the news columns on page 1888 of the last volume of THE JOURNAL. In this article there are twenty-four illustrations showing the various forms in which the spirillum of relapsing fever was encountered in ticks, the development of the protoplasmic bigemium (of Texas fever), and of the germ of "coast fever" in cattle, and of the trypanosoma and tsetse-fly. He found that the tsetse-fly disease is transmitted by the *Glossina pallidipes* and *fusca*, as well as by the *morsitans*. It has proved impossible hitherto to infect the glossina by allow-

ing it to feed on animals having trypanosomes in the blood from recent infection. The flies did not become infected until the cattle had been infected for some time, and their blood contained only a comparatively small number of the germs. Koch thinks that this shows that not all trypanosomes circulating in the blood are capable of infecting the tsetse fly. They must be in some certain, and to us still mysterious, condition before they can transmit the infection. This condition may occur in wild animals. He has found infected flies at points where they probably could only have become infected from wild antelopes or buffaloes. The trypanosoma passes through a certain phase of its development in the body of the glossina.

107. **Morbidly High Arterial Pressure.**—Krehl regards the higher arterial pressure in nephritis as a compensating measure to insure the elimination of urine-forming substances. If it is possible to reduce the formation of these urine-forming substances, then the arterial pressure will spontaneously subside. This is the explanation for the benefit from a milk diet in nephritis. When nothing is ingested but milk, the arterial pressure rapidly sinks. In impending uremia, repose, dieting, sweating, and blood-letting will relieve the organism of a certain proportion of the urine-forming substances which it is seeking to eliminate by increased arterial pressure. These measures should be supplemented by others to strengthen the heart if necessary to enable it to aid in this elimination. The high arterial pressure is needed in granular atrophy of the kidney to compensate the defective functioning, and our aim should be to reduce this task to the minimum. It is unwise and dangerous to think that we must always strive to reduce by direct means the high arterial tension in all cases. It is fortunate that Nature resists such measures so obstinately.

108. **Surgical Treatment of Brain Abscesses.**—Krause describes in detail the present status of operative treatment of abscesses in the brain, traumatic epilepsy, tumors and injuries, with the indications for special technic.

109. **Placenta Praevia.**—The points specially emphasized by Fritsch are that the tampon should be applied with the patient lying on her side, with the bladder and the rectum emptied. The genitalia must be disinfected frequently and the vulva washed off repeatedly before, during and after the tamponing with cotton soaked in a reliable disinfectant. By repeatedly washing off in this way the parts are kept comparatively sterile. The best instrument for introducing the tampon is the hand. The hand of a cautious obstetrician is less dangerous than a metal dilator. It is possible sometimes slowly to dilate the os with the fingers and to push it back over the head of the child without lacerating it in the least. He gives a number of other points to be borne in mind and describes the technic he prefers.

110. **Bleeding from Female Genitals.**—Döderlein expatiates on the necessity for adapting treatment to the cause inducing the hemorrhage. Any bleeding after definite cessation of menstruation should be regarded as pathognomonic of cancer. A myoma does not induce hemorrhage directly, as a rule, but it is the cause for long persistence of menstruation and for severe bleeding at the periods. Bleeding from the genitals between the ages of 15 and 45 is not characteristic of any special affection, but indicates some gynecologic disturbance which should be differentiated.

111. **Infantile Digestive Disturbances.**—Hochsinger concludes this postgraduate lecture with the remark that to date we have no causal therapy, in a chemico-bacteriologic sense. The Breslau school regards the albumin in the milk as of little moment, while Biedert and his school consider it the main factor in infantile digestive disturbances. The safest way is to withdraw all or nearly all food from the child and then to resume it very slowly and by degrees, watching the effects.

112. **Acute Angioneurotic Edema.**—In Herter's case the edema developed always after midnight, reached its maximum toward morning and then gradually subsided during the forenoon. The patient was an otherwise healthy woman of 69. The edema was restricted to the lower part of the face and tongue. The attacks have recurred at intervals of a few weeks or months during the last eight years.

Deutsche Zeitschrift f. Chirurgie, Leipzig.

Last issued JAN., page 192.

- 114 (LXXIX, Nos. 1-3.) "Congenital Obstruction and Constriction of Alimentary Canal in Light of Embryology.—Die angeb. Verschlüssenzen und Verengerungen des Darmkanals im Lichte der Entwicklungsgeschichte. E. Kreuter.
- 115 Ueber Entstehung und Wesen des arteriellen Collateral-Kreislaufes (circulation).—A. Bier.
- 116 Zur Kenntnis plastischer Operationen am Nierenlecken bei Hydronephrose (operations on renal pelvis).—A. Lauen. (Frendenborg's clinic, Leipzig).
- 117 Atypical Conditions in Sacral Region.—Atypische Verhältnisse in der Steissgegend menschlicher Foeten und eines Neugeborenen. H. A. Thaler.
- 118 *Foreign Bodies in Male Urethra and Bladder.—Ueber Fremdkörper der männl. Harnröhre und Blase. J. Englisch Vienna.
- 119 *Length of Life and Vitality of Cells of Epidermis. Exp. Studien über Lebensdauer und Lebensfähigkeit der Epidermiszellen. L. Burkhardt.
- 120 Neubildung von Lymphdrüsen beim Mammaeacarcinom (neofornation of lymph glands).—C. Ritter.
- 121 Ueber penetrierende Thorax-Verletzungen (penetrating injuries).—E. Hahn.
- 122 Penis-Carcinom bei einem 2-jährigen Kinde (in child of 2). Creile.
- 123 Heilung eines Falles von penisototaler Hypospadie nach der L. Eck'schen Methode. A. Martina.
- 124 Stomach as Contents of a Hernia in Right Diaphragm with Secondary Protrusion into the Abdominal Cavity. Simulating proencephalos.—Der Magen als Inhalt, etc. Handl.
- 125 Fall von seltener, traumatische intra- und extraperitonealer Blasen-Ruptur (of bladder).—Maeder.

114. **Congenital Obstruction and Stenosis in the Alimentary Canal of the New Born.**—Kreuter shows by his embryologic studies that the lumen of the fetal alimentary canal is liable to close up by cell proliferation from the fourth to the tenth week as a process of development. When stenosis is observed in the new born it is the abnormal persistence of this embryonal process. He has been able to find reports in the literature of 111 cases of atresia of the esophagus, 8 of the stomach, 5 of the duodenum, 103 of the jejunum or ileum, and 33 of the rectum. He completes his extensive article with a number of plates illustrating the embryonal process described.

118. **Foreign Bodies in Male Urethra and Bladder.**—The literature of 750 cases is reviewed by Englisch after report of 10 cases from his own experience. The results were more favorable when the foreign body was in the urethra, as only 7 deaths occurred in 181 of these cases, while the mortality was 30 deaths in 625 bladder cases (mortality, 3.87 per cent. and 5.86 per cent., respectively). Spontaneous expulsion occurred in 4.28 per cent. of the bladder cases and in 3.31 per cent. of the urethra cases. It is easier to crush a foreign body in the bladder than in the urethra (10.58 per cent. and 2.2 per cent., respectively). Foreign-body operations on the urethra have a mortality of 2.17 per cent.; on the bladder, 8.17 per cent. High incision gave the best results and lateral perineal incision the poorest, the mortality being, respectively, 1.66 per cent. and 10 per cent., while that of the median perineal incision was 4.44 per cent. When the foreign body is incrustated, unless it can be broken up and removed in fragments, operative treatment insures the best results, much better than prolonged attempts at instrumental extraction. Scraps of bone have frequently been spontaneously expelled from the bladder, but pieces of a catheter usually cling to the bladder wall and are seldom spontaneously expelled. Experience has abundantly demonstrated that if a foreign body in the urethra or bladder is not removed it is almost sure to entail inflammation, gangrene or a fistula, generally leading to fatal pyemia. Spontaneous expulsion has been known to follow injection of oil into the urethra, also after closing the outlet when urinating, the accumulating urine washing out the foreign body, especially when the passage has been previously stretched to its utmost capacity by introducing a large sound as far as the foreign body. Less than a dozen cases of such spontaneous expulsion are on record. Twenty-seven kinds of foreign bodies were found in the 750 cases reviewed, a piece of a catheter in 220, hat pins in 41, pieces of bone in 59, knitting needles in 32, bullets in 24, wax candles or tapers in 21, pencils in 12, and paraffin, wads of hair or fiber in 5 each. The age of the patients ranged from under 5 to over 80. The monograph fills 89 pages.

119. **Length of Survival of Epidermis Cells.**—Burkhardt announces that epidermis cells retain their vitality unimpaired for several days. His experiments were made on dogs; the

conditions are more favorable in man. The cells require oxygen and asepsis to keep perfectly. They should not be kept in a fluid, as this macerates them; neither should they be allowed to dry out completely. The vessel in which they are kept should not be air-tight. The best results were obtained with scraps kept warm and moist. They retained their normal aspect and elasticity.

Münchener med. Wochenschrift, Munich.

- 126 (LI, No. 44.) *One-day Pneumonia.—Ueber eintägige Pneumonien. A. Bechtold.
- 127 Bakteriologische Untersuchungen bei einer Paratyphus-Epidemie. Schottelius.
- 128 Oxidation by Fluorescent Substances in Light and Changes in Bleaching.—Ueber die Oxidation durch fluoreszierende Stoffe im Lichte und die Veränderungen derselben durch die Bleichung. H. v. Tappeiner.
- 129 *Zur Kasuistik der Milzverletzungen und deren Therapie (injuries of spleen). P. Graf.
- 130 *Eine neue Penis-Klemme (clamp). A. Strasse (Barmen).
- 131 Temperatur- und Skin.—Ueber Hauttemperatur-Messungen. Grünewald.
- 132 Zum Studium der Komplemente. H. Lüdke.
- 133 Official Care of Infants in Hungary. Staatliche Säuglingsfürsorge in Ungarn. A. Székely.
- 134 (No. 45.) Origin of Glycolic in Hippuric Acid.—Herkunft des Glykoksäure in der Hippursäure. A. Magnus-Levy.
- 135 Multiple Sklerose unter dem Bilde der Myelitis transversa (simulating myelitis). B. Morawitz.
- 136 *Fall von Doppel-Sepsis (double sepsis). C. Stübli.
- 137 Ueber epidemische Genickstarre (meningitis). Jacobitz.
- 138 Ueber Cytorrhynch-Befunde. Jancke (Berlin).
- 139 *Zur Verhütung des Puerperal-Fiebers. Lingel.
- 140 Weight-Bearing Test of Lungs.—Zur quantitativen Lungenlastbestimmung durch die Belastungsprobe nach Prof. Dr. Stumpf. F. Schreien.
- 141 Length of "Carlsbad Cure" for Gallstones.—Ueber die Dauer des Kurbrauches in Karlsbad beim Gallensteinleiden. E. Hertzka.

126. **One-Day Pneumonia.**—Bechtold states that out of 1,057 cases of pneumonia at the Würzburg clinic, 10 were what might be called "one-day" pneumonia. The chill, high fever and crisis were observed in all, but the percussion and auscultation findings differed materially. The sputum was rusty in only one case, but traces of bright red blood were visible in another. Four of the patients were far from being robust, and these cases seemed to be due to a mild house contagion, all occurring close together in one ward.

129. **Injuries of Spleen.**—Graf relates the particulars of 3 cases of injury of the spleen, bullet wounds, 2 and laceration in the other case, which terminated fatally from internal hemorrhage. The spleen was removed in the other patients. One was a man of 66, and the remarkably slow recovery was a noticeable feature. It seemed as if the lack of regeneration of the blood from the absence of the spleen retarded convalescence. An accessory spleen was found in the other patient, a young man of 27, and his prompt recovery may have been facilitated by the presence of this compensating organ. The blood findings were quite normal by the eighth week.

130. **Clamp for Penis.**—The clamp described in this article is to take the place of the fingers when closing the lumen of the urethra to prevent reflux of medicinal fluids introduced.

136. **Double Sepsis.**—Stübli cultivated the *Streptococcus longus* from the case of sepsis reported, but found, further, that after six days a new and hitherto undescribed bacillus developed on the media and had evidently been partially responsible for the sepsis. The necessity for waiting several days to determine the true causal agent or agents is emphasized by this case. Even the cultivation of one germ does not exclude the possible presence of others. In the case reported, the Widal test was positive at 1 to 200, but nothing was found to explain this fact, no signs of typhoid being discovered.

138. **Cytorrhynchus Luis.**—Jancke found Siegel's cytorrhynch, exactly as he has described them, in 10 placentae from women known to be syphilitic. Control examination of placentae from normal women always resulted negatively. Siegel's technique was described in the *Munch. med. Wochsft.*, 1905, Nos. 28, 29 and 32. Jancke obtained the best specimens by staining with azure for twenty-four hours, rinsing for half an hour in distilled water, and then drying in the air. They were then dipped for one or five or eight seconds in alcohol, then in xylol, and mounted in balsam.

139. **Prevention of Puerperal Fever.**—Lingel urges that midwives be forbidden to make vaginal examinations of pregnant or parturient women.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Department of the Interior Bureau of Government Laboratories, Manila: Bureau of Public Printing, 1905.

No. 29. September. I. NEW OR NOTWORTHY PHILIPPINE PLANTS. II. THE SOURCE OF MANILA ELEPH. By E. D. Merrill. Botanalst.

No. 31. May. I. NOTES ON A CASE OF HEMATOCHYLURIA. Together with Some Observations on the Morphology of the Embryo Nematode *Filaria nocturna*. By W. B. Wherry and J. R. McMillan, M.D. II. A SEARCH INTO THE NITRATE AND NITRITE CONTENT OF WITTE'S "PEPTONE." By W. B. Wherry, M.D.

No. 32. June. I. INTESTINAL HEMORRHAGES AS A FATAL COMPLICATION IN AMEBIC DYSENTERY AND ITS ASSOCIATION WITH ABSCESS. By R. P. Strong, M.D. II. THE ACTION OF VARIOUS CHEMICAL SUBSTANCES ON CULTURES OF AMEBÆ. By J. B. Thomas, M.D. III. THE PATHOLOGY OF INTESTINAL AMEBIASIS. P. G. Woolley and W. E. Musgrave, M.D.

No. 33. June. FURTHER OBSERVATIONS ON FIBRIN THROMBOSIS IN THE GLOMERULAR AND OTHER RENAL VESSELS IN BUBONIC PLAGUE. By M. Herzog, M.D.

ESSENTIALS OF MATERIA MEDICA, THERAPEUTICS AND PRESCRIPTION Writing. Arranged in the Form of Questions and Answers Prepared Especially for Students of Medicine. By H. Morris, M.D. Seventh Edition. Thoroughly Revised, and Adapted to the Eighth Revision (1905) of the United States Pharmacopoeia, by W. A. Bastedo, Ph.G., M.D. Cloth. Pp. 300. Price, \$1.00 net. Philadelphia: W. B. Saunders & Co. 1905.

DOSE-BOOK AND MANUAL OF PRESCRIPTION-WAITING, with a List of Official Drugs and Preparations and Many of the Newer Remedies with Their Doses. By E. Q. Thornton, M.D., Ph.G. Third Edition. Revised and Enlarged and Adapted to the Eighth Revision (1905) of the United States Pharmacopoeia. Flexible Cloth. Pp. 392. Price, \$2.00 net. Philadelphia: W. B. Saunders & Co. 1905.

MIKROSKOPISCHE GESCHWULSTDIAGNOSTIK. Praktische Anleitung zur Untersuchung und Beurteilung der in Tumorforn auftretenden Gewebssveränderungen. Für Studierende und Aerzte, besonders Spezialärzte. By Prof. Dr. Friedrich Henke, Pp. 355, with 106 Illustrations. Mostly Colored. Price: Paper, 14 marks; bound, 15 marks. Published by Gustav Fischer. Jena. 1906.

LEHMANN'S MEDIZINISCHE ATLASSEN. Band V. Atlas Typischer Rückenbilder von normalen Menschen. By Dr. med. Rudolf Grashey. Mit 97 tafelförmigen (Autotypen) in Originalgrösse und 42 Konturzeichnungen (davon 11 als Ueberdruck), ferner 14 schematischen Figuren im Einleitungsstext. Cloth. Pp. 92. Price, \$4.00. Minnally: J. F. Lehmann's Verlag. 1905.

DER ARZTLICHE RATGEBER IN BILD UND WORT. Atlas und Handbuch für Gesunde und Kranke. Unter Mitwirkung von Dr. O. Bruhl, F. Cramer, etc., herausgegeben von Dr. med. fr. Siebert. Mit 245 farbigen Abbildungen auf 74 Tafeln und 481 schwarzen Abbildungen in Text. Cloth. Pp. 1024. Price, \$6.50 net. München: J. F. Lehmanns Verlag.

THE FOOD FACTOR IN DISEASE. Being an Investigation Into the Humoral Causation, Meaning, Mechanism, and Rational Treatment, Preventive and Curative of the Parasympathic Neuroses, etc., of Other Degeneration. By F. Hare, M.D. Vols. 1 and 2. Cloth. Pp. 497 and 535. Price, \$10.00. New York: Longmans, Green & Co. 1905.

MODERN MATERIA MEDICA AND THERAPEUTICS. By A. A. Stevens, A.M., M.D. Fourth Edition. Thoroughly Revised. In Conformity with the Eighth Revision (1905) of the United States Pharmacopoeia. Cloth. Pp. 470. Price, \$3.50 net. Philadelphia: W. B. Saunders & Co. 1905.

SKIASCOPY AND ITS PRACTICAL APPLICATION TO THE STUDY OF REFRACTION. By E. Jackson, A.M., M.D. Fourth Edition. Revised and Enlarged with 100 Illustrations. Cloth. Pp. 117. Denver: Herriot Book and Stationery Co. 1905.

A COMPEND OF MEDICAL CHEMISTRY, Inorganic and Organic, Including Urinary Analysis. By H. Leffmann, A.M., M.D. Fifth Edition. Revised. Cloth. Pp. 200. Price, \$1.00 net. Philadelphia: P. Blakiston's Son & Co. 1905.

MAN AND HIS POISONS. A Practical Exposition of the Causes, Symptoms and Treatment of Self-Poisoning. By A. Abrams, A.M., M.D. Illustrated. Cloth. Pp. 268. Price, \$1.50. New York: E. B. Treat & Co. 1905.

NERVOUS AND MENTAL DISEASES. By A. Church, M.D., and F. Peterson, M.D. 341 Illustrations. Fifth Edition. Thoroughly Revised. Cloth. Pp. 437. Price, \$5.00 net. Philadelphia: W. B. Saunders & Co. 1905.

GALLSTONES AND THEIR SURGICAL TREATMENT. By B. G. A. Moynihan, M.S., F.R.C.S. Second Edition. Revised and Enlarged. Cloth. Pp. 458. Price, \$5.00 net. Philadelphia: W. B. Saunders & Co. 1905.

SEPMANN'S HISTORISCHE MEDICINALE-KALENDAR. Bearbeitet von Prof. Dr. J. Pözel und Prof. Dr. J. Schwalbe in Berlin. Paper. Pp. 184. Price 75c. New York: P. J. Hoeber.

TRIP TO THE "LAND OF THE MIDNIGHT SUN." Summer of 1905. By R. B. Thray, M.D. Paper. Pp. 87. Published by the Author, Kansas City, Mo.

TRAPPING THE WILDCATS. From the Diary of a Policeman. By C. R. Wooldridge. Paper. Pp. 164. Chicago: Thompson & Thomas.

MEDICAL DICTIONARY SUPPLEMENT. By W. Healy, A.B., M.D. Paper. Pp. 45. Chicago: Published by the Year Book Publishers, 1906.

MILITARY HYGIENE. By R. Caldwell, F.R.C.S., D.P.H. Cloth. Pp. 416. Price \$4.00 net. New York: William Wood & Co.

LIBRARIAN'S REPORT OF CORNELL UNIVERSITY, 1904-1905. Paper. Pp. 56. New York: G. W. Harris, Librarian.

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Addresses

THE PRESENT STATUS OF THE SURGERY OF THE STOMACH.*

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NASHVILLE, TENN.

The triumphs which surgery has achieved over certain diseases of the stomach comprise one of the most useful and gratifying experiences which has crowned the efforts of our profession in the last decade. It has demonstrated anew that, as the hand-maiden of medicine, surgery is ever widening the limits of its helpfulness and adding new luster to its already brilliant achievements.

The stomach is probably the most important viscus in the body from a surgical standpoint. It is more prone to pathologic changes that can be relieved by operation than any other portion of the alimentary tract, save its terminus. Interference with its functions are attended with the most distressing and serious results. The relative safety with which it can be exposed and manipulated goes far to render it attractive for needed surgical exploration. Its thick walls and peritoneal investment make it well adapted to suturing, and wounds and incisions can be closed with ease and security. With the perfection which the details and accessories to surgical work have been brought in other departments, the comparatively recent innovations in the surgery of the stomach have been undertaken with a precision which has not obtained in the opening up of other new fields in the surgical domain. The mortality in the hands of the expert has been so minimized that operation can be consistently advocated for the relief of distress and disability as well as for immediate and remote danger.

The modern surgery of the stomach is not more than four or five years old, and in its more perfected aspect is only half that old. Its results, judged by statistics before that time, are not comparable to its present accomplishments and the oft-repeated reference to its "rightful mortality" should give place to the recognition of its present surprisingly low death-rate. The discussion, relative to operation for stomach lesions now, is similar to that in regard to appendicitis twelve or fifteen years ago. Then only the desperate cases were submitted to operation. It is so now with many stomach cases. This, however, must yield to the logic of results and in a short time the profession generally will advise early operation as they now well-nigh universally do in appendicitis. Improved technic, low mortality and satisfactory end results will inevitably do away with the empirical treatment of occult intractable stomach troubles. Operating-room demonstration of pathology *in vivo* is impressing the easy mechanical relief of these lesions. A

closer intimacy with living pathology will instill the lesson which we have learned so well in other portions of the body, where the golden opportunity is no longer permitted to slip away.

The laity, too, will soon become educated on the subject, and will criticise us for allowing a chronic ulcer to go on to perforation or fatal hemorrhage and for permitting cancer to stealthily creep upon its unsuspecting victim without early recognition. They did that with cancer elsewhere, with delayed operations for appendicitis and with the occurrence of puerperal sepsis, and in my opinion the laity had a very strengthening influence in seconding our efforts to prevent these catastrophes.

Penzoldt appeals for a closer union of surgical skill and internal diagnosis, and says it promises more for patients with a stomach trouble than for any other morbid condition. He says:

It is the duty of every practitioner who has not the fortune to possess the necessary experience for performing these operations to call into consultation a surgeon possessing the necessary skill so soon as the question of any operation arises. Above all, it behooves the physician who practices as a specialist in the domain of stomach and intestinal diseases, and to whom a great number of uncured patients are sent, to come to a definite agreement on the grounds for operation with an experienced surgeon; the unavoidable disadvantages arising from the unnatural division of practice into surgery and medicine may by such a personal union be compensated.

Moreover, he warns physicians that although there may be a good deal of difficulty in acquiring the necessary skill in the diagnosis of stomach diseases, this is far easier than that required to perform the necessary operations, and that if physicians do not co-operate with surgeons the latter will find the means of acquiring the diagnostic skill and do without them. He complains, too, of the "hesitation and faint-heartedness" of many practitioners which he thinks constitute an unjustifiable obstacle to the progress of surgical treatment (Saundby).

Granted the diagnosis, the surgical problem has just begun. The literature abounds in most complete and exhaustive memoirs. Surgical inquiry and activity in this field is everywhere rife. Various methods have been employed. The technic is constantly changing. The ingenuity displayed in the planning of operative methods is really wonderful. The discarding of the unessentials is very striking. Simplification of mechanics and technics seems to be the desideratum. Mayo is working on a new plan in gastro-enterostomy which tends to simplification and, it is believed, to better mechanics. It is not untimely, however, in this presence to invoice the present attitude of advanced professional thought and epitomize the recognized methods of to-day. I will endeavor, therefore, to present some facts which I believe faithfully portray the present status of the surgery of the stomach.

* The address in Surgery before the Mississippi Valley Medical Association, Indianapolis.

The typical indication for operative interference is obstruction of the pylorus from an open or cicatrized ulcer causing dilatation of the stomach with stasis of food. The short-circuiting operation of gastro-enteric anastomosis finds its ideal indication here and has given most beneficial results. It is the *fons et origo* of the present group of drainage operations, as well as other gastric procedures, and is altogether the most perfected and satisfactory employed operative device.

The complications of ulcer requiring operation are (1) perforation and (2) hematemesis of chronic ulcer. Hemorrhage from an acute ulcer is rarely fatal and is usually amenable to dietetic treatment.

It is often the first symptom of acute ulcer, but rarely occurs in that relation to chronic ulcer and makes its advent most often between the first and fifth years of the disease. It occurs in 18 per cent. of all cases (Fenwick), causes death in 8 per cent. of those in which it does occur (Rodman), and is the determining cause of death in from 3 to 5 per cent. of all cases (Welch).

Operation is advised in repeated acute hemorrhage or in constantly recurring small hemorrhages.

Other indications are found in the following groups of cases: (3) Obscure and persistent stomach symptoms with a long history of dyspepsia culminating in hemorrhage, after it has been controlled by medical means and the patient put in the proper condition for operation (Cabot). (4) Cases of chronic intractable dyspepsia even without dilatation which fail to yield to proper medical treatment and are not due to general visceral ptosis.

Waterhouse says that unless definite improvement manifests itself after three months of medical treatment of chronic ulcer or all serious symptoms have not disappeared after six months' treatment the case should be considered one for surgical, rather than for continued medical aid.

Other authors specify operation in cases in which "three" systematic ulcer cures have not cured, and a prominent surgeon facetiously remarks in reference to these cases that operation is contraindicated unless the patient has had as many as nine permanent and complete cures. The greatest desideratum in gastric surgery is operation in the early stages of cancer, and hence in enumerating the indications it may be summarized in the phrase (5) "on suspicion of cancer." A synopsis of the other stomach conditions for which operation is recommended is as follows:

- (6) Disabling perigastric adhesions.
- (7) Congenital stenosis of pylorus.
- (8) Fistula between stomach or pylorus and adjoining organs or even with the surface of the body.
- (9) Hour-glass stomach.
- (10) Congenital hour-glass stomach (Brooks).
- (11) Volvulus.
- (12) Tetany due to obstruction and dilation (Cunningham).
- (13) Spasm of pylorus (Reichmann's disease).
- (14) Subphrenic abscess.
- (15) Perforating wounds of stomach.
- (16) Non-perforating trauma (Monprofit).
- (17) Cirrhosis (Sheldon).
- (18) Foreign bodies.

It will be seen that, aside from malignancy, chronic ulcer and its complications furnish most of the indications and the majority of cases. Indeed, it is not impossible that the bulk of cases of inveterate dyspepsia are really due to ulcer. That it is found postmortem so very many more times than it is recognized clinically is

a reproach not so much to our diagnostic measures as to our failure to properly apply them.

The necropsy incidence in Philadelphia was 3.15 per cent.; in London, 4.6 per cent.; in Europe, 8.54 per cent. Mikulicz says: "The dangers to life from gastric ulcer is at least not less, but probably far greater than the danger of a complete modern operation." Kiegel estimates the mortality at 8 to 10 per cent., Lebert at 10 per cent., Welch at 15 per cent., von Leube at 25 per cent., Debove and Raymond at 50 per cent.

Aside from its immediate and remote mortality (anemia, tuberculosis, malignant degeneration, etc.), the ease, frequency and permanence of cures are greatly overestimated. In a consideration of the permanent cures it must be borne in mind that amelioration of acute symptoms does not necessarily mean an actual cure, and some of the patients so cured may and do die later of perforation, hemorrhage, canceration and other complications, and 40 and 45 per cent., respectively, in two different series of cancer cases represented a good history of preceding ulcer (Mayo and Graham).

As bearing on permanence of cure, Russell studied 89 cases of gastric ulcer, covering a period of 7½ years; 44.7 per cent. were found to be suffering from stomach symptoms at the last report, 14.9 per cent. were having repeated and definite attacks with intervals of immunity, and 29.8 per cent. suffered almost continuous pain. Another group of 6 per cent. could not as yet be classed with the uncured, 44.7 per cent. Contrast this very lame showing to the graphic description and beautiful results of Moynihan:

Indeed, I do not know any operation in surgery which is more successful or which is attended by better or more striking results than gastro-enterostomy for chronic ulcer of the stomach. A patient, thin, shrunken, cadaverous and gloomy in aspect, who has been chiefly occupied in trying to avoid acute attacks of indigestion or vomiting, whose whole attention is concentrated on his stomach, who considers every article of diet carefully before he takes it and by degrees abandons first this dish and then the other until he is finally reduced to fluids alone, who, indeed, has never conceived that any other question than that of his own health could seriously interest him, a patient, to say the truth, whose whole existence has been ordered and regulated by his stomach, finds, after a gastro-enterostomy has been performed for his chronic ulcer, that he can eat what he likes in any quantity he likes, that he rapidly puts on weight, and that his general sense of well-being is almost beyond belief. From being a misanthrope he becomes an enthusiast and an optimist. I have often wondered with a certain amusement what would have been the result of a timely gastro-enterostomy on Thomas Carlyle. He might have taken to the writing of comedies and threatened the throne of Congress. And his portrait, twelve months after the operation, viewed side by side with that done by Whistler, would have proved an eloquent advertisement for his surgeon.

The ulcer is recognized at operation by its shot-like feel or when the walls are picked up between the finger and thumb the muscularis does not slip off the mucosa. a milky white spot often denotes its site and the enlarged "sentinel gland" of Lund may be found in the greater or lesser omentum. Very often the thick-based, indurated ulcer is so prominent that "he who runs may read" and is situated at or near the pylorus. The induration or contraction may have caused obstruction and consecutive dilatation.

The first four inches of the duodenum is embryonically, physiologically and surgically a part of the stomach. Duodenal ulcer, therefore, does not differ etiologically from it. It is most frequent in men, and in the fifth decade of life. It occurs often in the professional

classes who live too well and develop hyperchlorhydria. It is characterized by pain an hour before meals or in the early morning hours and relieved by food. Malena is frequent. It is relatively very much more frequent than has been supposed. In a period of $2\frac{1}{2}$ years the Mayos found, out of 231 cases of gastric and duodenal ulcer, the duodenum to be involved $\frac{1}{2}$ times, or 32 per cent. In 42 operations for chronic duodenal ulcer he had only a single death. It is exceedingly prone to perforate and takes place usually in men in the prime of life, with perhaps little or no stomach symptoms. Murphy says perforating duodenal ulcer is practically impossible to diagnose accurately without exploratory laparotomy. As a most remarkable series of cases I will quote Turner, who saved 8 out of 9 cases at St. George's Hospital. They were operated on 4, 5 $\frac{1}{2}$, 10, 12, 17, 24 and 48 hours, respectively, after onset of symptoms. The only unsuccessful case was operated on the third day, when practically moribund.

D'Arcy Powers gives the following forceful description of a typical example of chronic duodenal ulcer:

He tells you that he is a martyr to indigestion, and that for months past he has suffered atrocious pain in his stomach, which is relieved by vomiting. He has dieted himself in every possible manner, he has made all kinds of local applications to his abdomen, he has visited all sorts of watering places, and he has gone in vain from one physician to another seeking a cure. Examination shows him to be a mere bag of bones, badly constipated, cold extremities, and a listless, dejected aspect. His abdomen is loose, the subcutaneous veins dilated, and a visible peristalsis from left to right in the epigastric region. Percussion tells you that the stomach is greatly dilated, and it is not very unusual to feel a tumor in the neighborhood of the pylorus or gall bladder, and you question the patient a little more closely. He is sure that he has been suffering for years, for so long, in fact, that he hardly recollects the beginning of his trouble. A few well-directed inquiries may elicit that twenty-five or thirty years ago, when he was a young man, he once or twice brought up a large quantity of blood without serious pain or discomfort, or that he had an illness which no one seemed to know much about. He was treated for gallstones, or appendicitis, or simply for "liver." The attack was painful and kept him in bed, but the exact details have passed from his mind, and for some years he was as healthy a man as ever.

This is a case of duodenal obstruction resulting from cicatrization of an old ulcer, the irritation of which has caused inflammatory thickening in the surrounding parts. How many patients have been allowed to die of such a condition in the belief that they had malignant disease of the stomach no one can tell. But for such patients a gastrojejunostomy holds out the prospect of a speedy and perfect cure.

It is in duodenal or pyloric obstruction that gastroenterostomy finds its most exquisite indication and attains its highest efficiency.

The many various methods for performing gastroenterostomy give a feeling of wonder at the ingenuity displayed. It is probable that the ideal method has not been finally arrived at. The relative safety of the operation even by varying technic is illustrated by Robson's results—over 200 cases, with a mortality of 3.6 per cent. The posterior operation has largely supplanted the anterior, because of the avoidance of the loop around the transverse colon, and the mischief which it caused. The anterior operation is reserved for malignancy where the speediest technic is the best, where the stomach can not or should not be delivered freely, and the operation is palliative in its intent. The Murphy button, to which we owe most of the knowledge we have of gastric and intestinal surgery, can be employed here on account of its rapid insertion.

The McGraw ligature finds its best scope in such cases if an immediate opening is not required. Secondary jejunal ulcer is not likely to occur on account of the absence of HCl.

The vicious circle, which was formerly a *bête noir*, was due to angulation or obstruction by spur-formation. The posterior loop, eight or ten inches long, invites this more than any other method. It rarely occurs with the button, because of the rigidity at the anastomosis, which prevents kinking.

The posterior operation without the loop, with a longitudinal incision from one to three inches from the duodeno-jejunal angle, gives almost complete immunity from the vicious circle. This operation was described by Peterson in Czerny's clinic, has been recently popularized by Moynihan's writings and is practiced by the Mayos, who have come back to it after employing various other and more complicated and elaborate methods, including entero-anastomoses, with occlusion or division of the efferent limb. The essentials of the present perfected posterior operation are: (1) The selection of the very bottom of the stomach (Mayo); (2) the obliquity of the opening from above down and from left to right (Moynihan); (3) the utilization of the jejunum as it drops straight down and at a point where it normally lies in contact with the posterior wall of the stomach with only the mesocolon intervening (Peterson); (4) anastomosis effected with clamps and simple suturing with linen thread.

Peptic ulcer is not so likely to occur because the mucous membrane is better able to protect itself nearer the alkaline biliary and pancreatic openings.

This technic has enabled Moynihan to report 173 operations for benign conditions, with only two deaths. Mayo performed 307 operations by various methods, with 19 deaths (6 $\frac{1}{2}$ per cent.). In the last 140 there were only four deaths (2 $\frac{6}{7}$ per cent.), and in the last 80 by practically this method there was only one death. Mayo, for the last two months, has been making the anastomotic opening obliquely from above down and from right to left, instead of vice versa, as in "Moynihan's oblique line." Heretofore great consideration has been shown the line of peristalsis of the stomach, but Cannon and Blake have shown that, no matter where the opening is made, the stomach by its rhythmic, milking-like action makes the point of exit the lowest part of a spindle and ejects the food in jet-like movements.

All of our past trouble has been with the jejunal side of the anastomosis and not with the gastric. The right oblique opening is in more harmonious relation to the course of the jejunum at that point than the left oblique and prevents twisting the jejunum out of its right oblique direction into the left oblique.

I have employed this technic in three cases recently, with most ideal results so far.

The more complex methods, like Mumford's and Roux's, while most ingenious, are not believed to be more effectual than the simpler methods above outlined. The Roux method is excellent as a secondary operation when vicious circle has occurred.

The gastro-duodenostomy of Finney seems ideal and makes the pylorus capacious and is at the natural outlet. It is contraindicated where there is a large amount of scar tissue and immobility from extensive adhesions. The mortality reported by Mayo was 6.9 per cent. in 53 cases.

Excision of the favorably situated and apparently

solitary ulcer may be advantageously combined with it. There have recently been proposed a number of modifications of gastro-enterostomy.

1. Maury substitutes for the elastic ligature of McGraw a triangular stitch of twine which is effectual.

2. Gilbert uses a Pean forceps containing a sheathed knife to cut through the juxtaposed stomach and jejunum which are united by a continuous serous suture.

3. Werelius experimentally employed silver wire or thread introduced like McGraw's ligature and made to saw through the two adjacent walls when the suture is half completed.

4. Sato proposes to effect the opening by the application of AgNO_3 after the seromuscular coats have been incised and then they are sutured as usual. The lumen is not opened primarily.

A most logical operation for gastric ulcer is that proposed by Rodman, of excising the ulcer-bearing area by a pylorotomy. This stops the possibility of hemorrhage, removes the lesion and cicatrices. This removes also all of the ulcers, as they are usually multiple and situated in the antrum pylori, which is also the cancer site. It removes any co-existing duodenal ulcer in the first two and one-half inches.

There are two classes of cases in stomach surgery that do not give good results: (a) Ulcer with an open pylorus, sometimes allowing the anastomosis to close, and invite the repetition of the ulcer; (b) the neurasthenic, that most-to-be-pitied of all non-fatal diseases. In surgery generally these cases are bug-bears and should be studiously avoided, except in cases of very extreme disability and unmistakable evidence of gross and serious pathology.

The most crying need in all medicine is some means for the early recognition of cancer of the stomach.

The early diagnosis of the other great scourge of mankind—tuberculosis—is satisfactory, but unfortunately there is as yet no radical cure for it.

If it were possible to diagnose gastric cancer in its very incipency, a very large number could be saved by operation. The anatomic and lymphatic conditions are favorable for an ideally early operation.

Until the magic and immunizing therapy which will convert malignancy into benignancy is discovered, extirpation is our only resource.

One-third of all carcinomata are in the stomach. The average duration of life is nine months. Diagnosis by medical means is usually too late unless it is made by a strong surmise and confirmed by exploratory incision. Laboratory methods are unavailing in the operable period, as no change has taken place in the secretions. Any obscure digestive case, where pernicious anemia is excluded, and especially if HCl is absent, demands exploration. Riegel asserts that better results in gastric cancer will only come when the internist acquires the diagnostic acumen to strongly suspect malignancy and possesses, in addition, the courage necessary to enable him to act on that suspicion before it becomes a certainty. Persistent digestive cases should be watched carefully for a few days or weeks only. If there is progressive but slow development of disordered function with pain or vomiting, impaired secretion, emaciation and especially tumor, the wisdom of prompt exploration should be frankly put before the patient.

Czerny's dictum that the presence of a tumor is too late for operation has been disproved by Korte's experience. Thirty-four out of 38 resections had a tumor. The absence of early obstruction is one reason why

symptoms are so illusive, and hence the advent of a tumor is a fortuitous circumstance that by its obstructive symptoms urgently compels diagnosis that should lead to early interference. Nordmann, out of 126 cases, found only one out of four where removal of the tumor was practicable. This is a sad diagnostic commentary.

If exploration proves the condition inoperable, the wound should be closed with buried non-absorbable sutures, and the patient gotten up and out of the hospital at the end of a week. If obstruction is serious, a quick gastro-enterostomy is relatively safe. Robson had only one death in 24 palliative operations. Relief from pain and vomiting is most grateful and life is often prolonged for many months and in a good many instances to a year or longer. The danger of an exploration is not *per se*, but in ill-advised and overzealous efforts to attempt interference in conditions that should be left severely alone.

A writer in the last six months quotes a mortality of 70 per cent. in operations for malignant disease with adhesions and 27 per cent. without adhesions. These figures are tremendously too high and do not represent the possibilities of the modern operation nor the results already obtained which have reduced the death rate from operation to 4 or 5 per cent.

The Mayos in 114 malignant cases had twenty-one deaths, or 18 per cent. There were 63 pylorotomies and partial gastrectomies, with eight deaths, or 13 per cent. The worst cases had only a gastro-enterostomy and the severity caused the high mortality. In the last 41 cases for malignant disease operated in the last twenty-two months the mortality was only 8 per cent.; 25 consecutive, with only one death, 4 per cent. As to ultimate results in 70 cases of resection, four lived more than five years, 9 were still living from one to five years, a number are well after two years, and a majority lived over one year. Of the 16 operated over three years ago, four are living, or 25 per cent.; one is alive and well after four years and ten months. Of Korte's 22 patients who survived the operation, 13 lived from one to five years, 9 were still living from one to five years. Koehler had 45 cases of partial resection since 1898, with mortality 17 per cent., as against 44 per cent. in 52 resections previous to 1898. The strictly operative mortality was really only 5 per cent.; 20 of the 97 were living, 10 having survived more than two years. Petersen, in 18 cases successfully undergoing resection more than three years ago, had 7 alive and 4 had lived twelve, eleven, five and four years, respectively.

The late lamented Mikulicz, who did more than any other contemporaneous European surgeon for the advancement of gastric surgery, obtained a permanent cure or immunity for over three years in 16 per cent., and sadly enough he at last fell a victim to the dread malady for whose alleviation he had done so much. He cheerfully assented to exploration at the hands of Eiselsberg, and when it was found inoperable, he recovered and continued undauntedly at his work until the end. Than this there is no greater heroism.

A description of partial gastrectomy is as follows (Mayo):

Step 1. Open the abdomen.

Step 2. Double ligate and divide the gastric artery. Ligate and divide the necessary amount of gastro-hepatic omentum close to the liver, leaving most of its structure attached to the stomach. Double ligate and divide the superior pyloric artery and free the upper inch or more of the duodenum.

Step 3. With the fingers as a guide underneath the pylorus, in the lesser cavity of the peritoneum, ligate the right gastro-

epiploic or gastro-duodenal artery, and progressively tie and cut away the gastro-colic omentum distal to the glands and vessels up to the appropriate point on the greater curvature and here ligate the left gastro-epiploic vessels.

Step 4. Double clamp the duodenum, divide between with the cautery leaving one-fourth inch projection. With a running suture of catgut through the seared stump, the end of the duodenum is closed as the clamp is removed. A purse string suture about the duodenum enables the stump to be inverted. The proximal end of the stomach is double-clamped, along the Mikulicz-Hartmann line, divided with cautery, leaving one-quarter inch in projection.

Suture through the seared stump with a catgut buttonhole suture.

This is again turned in, after removal of the clamp by a continuous silk or Cushing suture.

Step 5. Independent gastro-jejunostomy.

Step 6. Closure of the wound.

Petersen says:

Resection is practiced more than it was because: (1) Resection is not more hazardous than gastro-enterostomy. Twice as many patients die from pneumonia after the latter than after the former operation. The removal of the decomposing cancerous tissue appears to be of great value. (2) The prospect of radical cure is much greater than was thought. The stomach and duodenum must be excised as widely as possible. (3) Even when recurrence takes place, resection prolongs life on an average about nine months, as opposed to the four to five months of its rival.

SCIENCE AND ART IN MEDICINE.

THEIR INFLUENCE ON THE DEVELOPMENT OF MEDICAL THINKING.*

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IS MEDICINE A SCIENCE OR AN ART?

Medical men the world over frequently have to hear the criticism, I might call it the reproach, that medicine is not a pure science, that its methods and its discipline are not sufficiently accurate to merit this term. On the other hand, critics are not wanting among the non-medical public, who argue that medicine is not a perfect art.

Now, what is an art, and what is a science? In a recent address President Ira Remsen¹ attempts to define these terms, and on the authorities there quoted by this versatile educator we might profitably start out by borrowing the interpretations of the terms science and art. One writer says: "The distinction between science and art is that science is a body of principles and deductions to explain the nature of some matter, and art is a body of precepts with practical skill for the completion of some work. Science teaches us to know, and art to do. In art, truth is a means to an end, in science it is the only end. Hence, the practical arts are not to be classed among the sciences." Another writer says: "Science and art may be said to be investigations of truth, but one, science, inquires for the sake of knowledge, the other, art, for the sake of production. Hence, science is more concerned with the higher truths, and art with the lower. Science is never engaged, as art is, in productive application."

These definitions are apparently not equally clear with regard to science and art. With regard to science, they are clearer than with regard to art. Science has

for its object the accumulation and systematization of knowledge, the discovery of truth. This part is clear, and also that art is a body of precepts with practical skill for the completion of some work. But it is not clear how truth is only a means to an end in art, and in science it is the only end. Surely, if a truth could be expressed as a precept in as concrete a form in any art as it could be in a pure science, it would be, or at any rate should be, the only end, the only object of the art as well as of the science.

Then the question might arise, What are higher and what are lower truths? In the decision much depends on the individual standpoint of the judge. What is a higher truth for a scientist may be a lower truth for an artist, and *vice versa*. If it is said that in art truth is a means to an end, we have a right to inquire what is meant by the truths of an art? For instance, are counterpoint, thorough base, and harmony the truths of music?

I know of but two individuals in the history of the modern scientific world who, by training and experience, could be considered competent to answer this question, both having been artists and scientists at the same time, of acknowledged ability. One was Hermann von Helmholtz, physicist, physiologist and musician. The other was Theodor von Billroth, anatomist, pathologist, surgeon and musician. Both of these men have given us the benefit of their thinking on the borderland between science and art. Helmholtz, in his "Sensations of Tone," and Billroth, in his "Psychologische Aphorismen über die Musik" (Wer ist Musikalisch). To the student of either of these works seeking information on the questions above propounded, it must soon become evident that an exact and definite distinction between art and science is not always possible; particularly it is not possible in any concrete case. We are, therefore, enabled to meet the critics arguing that medicine is not an exact science nor a perfect art, with the statement that a distinction between these two is by no means possible and that there is much debatable territory between human knowledge and human ability. Medicine did not originate as a science, but by dire force of necessity. For centuries on centuries its treasures were gathered from experience only, and were developed into an art by the genius of its representatives. Professor Remsen¹ was, perhaps, too accurate in attempting to draw a hard and fast line between art and science. Every science is desirous to become an art, and every art tends to become a science. So also medicine. I mean by this that art requires a scientific foundation and that science requires ability to do. In other words, science requires productive application, the power of achievement.

My convictions induce me to differ from my erudite teacher, Professor Remsen. At least, to differ with him in applying the same ideas to medical science as he is disposed to set up for the science of chemistry. In rating the history of the discovery of oxygen and chlorine by Scheele (1774), he lays great stress on what seems to him a fact, that Scheele did not work toward these discoveries with any practical object in view, and, though this work, while it was being done, seemed to be of no utilitarian promise, its value in the light of present-day industry can not be overestimated. It would be very difficult to prove that Scheele worked absolutely oblivious of any practical results that his work might have. It is true that scientific men frequently work from pure love of science, prompted by high ideals and disinterested enthusiasm, but there is often an under-

* Address on occasion of conferring of the degree of doctor of laws (*honoris causa*), St. Johns College, Maryland.

1. "The Age of Science," Science, July 15, 1904.

current of thought which is sometimes discovered in the private correspondence of chemists, that the work they are doing may yet be of utility to their fellow-men, and perhaps profitable to themselves. In medicine, too, we have the history of a large number of unselfish workers. But if they should work purely in following ideals, without any hope of gaining any utilitarian results, they are not medical men in the true sense of the word. Medical science shall and must be useful. A quotation from Cicero is well applicable here: "*Nisi utile est, quod faciamus, stultum est gloria.*" An oft-quoted saying of Bismarck is: "*Die Politik kann nicht im Laboratorium gemacht werden, denn sie hat überall mit dem Menschen zu thun.*" (Politics can not be made in the laboratory; they have everywhere and at all times to deal with the human being.) In an analogous manner one may say of medicine: "Medical science can not be made exclusively in the laboratory; it has always and everywhere to deal with human beings." I said medical science, but I would, perhaps, have been more exact to have said medical art. For science analyzes, it dismembers and disintegrates in order to penetrate into the depths of things, and to study the final microscopic living element, the cell, in its life properties and processes. This is true, for instance, of physiology and anatomy. But art in medicine keeps the whole together, it observes the individual, the human being, in its entirety. Science seeks general laws; art in medicine seeks the personality. The object of all medical science is to help and to heal, and the object of all medical, artistic and scientific thinking is the therapeutic thinking. Scientific facts in medicine may have an absolute value, although they may not be directly useful, but, aside from such an absolute value, the whole art and science for the physician must be concentrated on the desire to aid his patient in regaining health by means of his science and art. Prof. I. Peterson, of Copenhagen, was one of the first to assert: "The attempt to erect the medical clinic exclusively on the achievements of natural science has proven itself to be impossible of execution."

HISTORY OF MEDICINE.

The evolution of medical thinking can best be studied in the history of medicine. From the earliest rudiments among the Egyptians, Romans and Greeks, the first beginning of clinical discipline dates from the Arabic apostles of medicine and the religious medical thinking, which was the custom of the healing monks of the medieval ages, who were the founders of the schools of Salerno and Monte Cassino. A new period begins with Paracelsus, a man who was an excellent chemist for his time, a contemporary of Luther, and based his therapy on a chemical substratum. Paracelsus created the conception of the "*Archeus*," the central ruler of the human organism, which holds all the bodily functions together and regulates them. This idea occurred later in the writings of Georg Stahl, under the name of "*anima*," and even in our time is frequently met with in a disguised form, sometimes under the designation "*vital force*." Scientific thinking, that is, thinking based on observations of objective facts, began rather late in the history of medicine. Not until the foundation of universities did it meet with appreciation and respect. This was brought about mainly by the great anatomists of Italy, particularly by Andreas Vesalius, a German by birth (Andreas Wesel), but professor in Padua, 1537 to 1544. Then followed Malpighi, Botalli, Harvey, the celebrated discoverer of the circulation of the blood, and eventually Morgagni (1682-1771), the founder of pathologic anatomy.

This brings us to a period in the history of German medicine in which this science began its emancipation from philosophic and purely deductive thinking, to the scientific and inductive method of investigation, including severe criticism and testing of facts by exact proofs and experimental research. At the time the battle began in Germany between philosophic and scientific thinking in medicine, the methods of the natural science had already gained victories in England and France, and a new era of logical scientific thinking had begun under Rokitsansky and Skoda in Vienna, but the course of the struggle was most interesting in Germany, particularly in Berlin. It was begun by an intellectual giant of such rare genius and unfailing logic that he might be called the father of exact physiology and medicine in Germany. I speak of Johannes Müller. He was the first to compel the abandonment of the philosophic thinking in medicine, insisting on the methods of the natural sciences, on investigations based on exact facts, on tests by experiment, and on the importance of microscopic investigations. The work of this great master was continued and perfected by two great pupils, Hermann von Helmholtz and Rudolph Virchow. Helmholtz particularly condemned the effects of the volitional thinking of the medical philosophers of his day, accusing them of contempt for exact investigation of the facts. "Natural philosophy in medicine," he says, "aims to explain the phenomena of normal and abnormal life, from the idea of absolutism. It is working toward a false idea of science, in a narrow, incorrect and one-sided appreciation of the deductive methods. It is true it was not only medicine among the sciences which was ensnared in these errors, but in no other science were the evil consequences so evident and did they obstruct progress so effectively as in medicine. The history of medicine, therefore, can claim a very special interest in the history of the development of human thought, for no other history is better adapted to demonstrate that a correct criticism of the sources of our knowledge is practically one of the most important duties of true philosophy." The demands of Helmholtz for exact scientific methods in medicine, when brought into practical execution, succeeded in raising our science to the standard of an exact discipline and brought it into possession of a wealth of solidly grounded facts.

The other great pupil of Johannes Müller, Rudolph Virchow, became the reformer of medicine in another direction. While professor in Würzburg, in 1849-1856, he laid the foundation of his cellular pathology, and later on, in 1856, when he was recalled to Berlin, he continued the work of his great teacher in perfecting the science of pathology and pathologic physiology, based on individual investigations, on experiment and on pathologic anatomy. The conception of a disease became an anatomic conception, through Virchow, but his pathologic anatomy aimed also to fathom the processes of the living body, and to become a beacon light for clinical study, and in that sense was a truly biologic science. For nearly half a century Virchow continued to be the undisputed chief and the greatest authority on the totality of medicine in the civilized world; and it is no exaggeration to say that no other scholar in the history of medicine has exerted a like influence on the thinking of the medical world. As von Leyden says: "He impressed the stamp of his intellect on his time."

This sketch will serve to represent the history of medical thought from the incipency of medicine as an art to the present day. We are now living in the era of the naturalistic, methodic and anatomic thinking in medi-

cine. What influence has this had on the artistic side of our profession, the clinic?

MODERN CLINICAL METHODS.

It must be emphasized right here that at the time when Helmholtz and Virchow began to be active in Germany, the methods of the natural sciences had already taken root in Paris, Vienna and in England. During the time that pathologic anatomy found its proponents in Cruveilhier and Rokitsansky in Paris and Vienna, respectively, and at the time in which the clinic of Paris was under the inspiration of Laënnec and the clinic of Vienna under Auenbrugger and Skoda, the German clinic was still dominated by the philosophic medical thinking. von Leyden states that the language of the clinicians was Latin and that they followed the volitional deductive methods of Leibnitz, Kant and Hegel. The first clinicians were Reil, Berend and Bartels. Reil was a natural philosopher, and Bartels had been a teacher of anatomy in Hildesheim, while the best that could be said of Berend was that he was a "thorough connoisseur of the writings of Hippocrates." Hufeland, a clinician of genius and influence, who followed these men, showed "*Wes Geistes Kind*" he was by corresponding with the philosopher Kant on his work concerning "Makrobiotik," and expressed himself disparagingly concerning the new diagnostic methods of auscultation and percussion.

But, in 1844, a contemporary of Johannes Müller was called to Berlin, and to this clinician, Lucas Schönlein, is due the credit of having replaced the Latin by the German language in clinical teaching. He brought about the appointment of the very able younger clinicians, H. Simon, Remak and L. Traube. With these men began the methods of exact physical examination of patients. Traube particularly was a master of diagnostic methods.

But when we look to the development of internal therapeutics at this stage of advanced clinical methods in Germany, it is discovered that the attempt to base therapeutics on pathology and diagnosis had failed. Therapeutic nihilism prevailed at Vienna, and the best that could be said of Berlin was that it worshipped the expectant plans of treatment. It took many years to impress on the clinician what now seems to be acknowledged a self-evident fact, that the only object of medicine is to help and to heal, and after the highly interesting evolution of the purely scientific part of medicine, briefly outlined in the preceding sketch, reformers were needed to emphasize again and again that, in addition to a science, medicine was also an art. Peter Krukenberg, a distinguished clinician of Halle, stated this in the following words: "Medical treatment, that is, therapeutics, is and will always remain an art." This conception of the clinical duties and responsibilities of medicine has been designated by Prof. I. Peterson² as "modern Hippocratism." The ultimate object of all medical studying is to help and to heal. The peculiar problem of the physician is not so much the disease, but the diseased patient; and the significance and importance of medicine is to be sought in this object, to protect the highest possessions of human beings, namely, life and health.

RECENT ADVANCES IN MEDICAL ART.

A brief résumé of the advances in the art of applied methods of healing will give some idea of the progress that has been made in our art during the last two dec-

ades. I will begin with three methods of discipline not as a rule classed among the applied therapeutics in the ordinary sense of the term. I mean, first, the physical methods of treatment; secondly, the treatment by diet, and, thirdly, the treatment by the art of nursing and the direct attention to the comfort of the sick.

Concerning the physical methods of treatment, I may say that, while they are by no means new, they have received such admirable and utilitarian additions and developments that modern physical methods of treatment almost constitute a new branch of applied therapeutics. The treatment by baths and water in general, balneology and hydrotherapy, the treatment by exercise and special apparatus for the correction and passive and active motion of diseased muscles, joints and bones, by gymnastics and massage. The wealth of methods by which electricity can be applied, and photo- as well as heliotherapy, the therapeutic applications of different kinds of light, has been endowed with such an abundance of new apparatus and methods that almost each one of them requires a specialist for their perfect application.

The treatment by diet has been placed on the safe and sound foundation of the physiology of nutrition. It has been aptly designated by von Leyden "*Ernährungs-Therapie*." Not only the selection of the quality and quantity of the food, but the manner of its preparation, the cooking, has received attention of medical men, particularly those whose attention is concentrated on diseases of metabolism and of the digestive organs. There are probably few healing methods by which more permanent good can be accomplished in the diseases just mentioned than by a scientific method of dietetic principles. It is much to be regretted that the art of cooking has not yet been universally admitted as an integral part of the curriculum in schools for girls and young ladies. It is unfortunate that in our well-to-do and even in the middle classes cooking is considered a humiliating occupation, a thing in which the modern housewife takes but a very superficial interest, leaving it, in the great majority of cases, to the cook whose experience and ability is a very variable quantity. The health of our people depends largely on the products of the kitchen, and the work of the kitchen is just as ennobling and honorable as any other work in any other walk of life. Cooking should be taught in every nurses' training school; and this brings me to speak of the art of nursing, the direct and immediate service toward the comfort of the sick patient.

Nursing constitutes the ethical factor in the vocation of the physician. It is that part of the applied art of medicine which gives it the character of devotion to suffering humanity, and which invests the physician with the reputation of sympathy and love for his fellow-men and women. Nursing is that branch of applied therapeutics in which our sisters, wives and mothers can join hands with the physician. It is individual and personal, it is the tie which binds the personality and individuality of the physician with that of the patient. Attention to the comfort of the patient and efforts at the widest application of the art of nursing afford also a common ground for two other much to be desired objects of our art: first, to secure for it the greatest possible support from philanthropic individuals and from the state and nation, and, secondly, to unite the more and more digressive specialties in medicine on the common ground of relief to human suffering. Here we have a tendency in which our claims for philanthropic and state support find a real and enduring sentiment and justification. For we can not claim this support for

2. Verhandl. d. Congress f. i. Medicin, 1899.

medicine as a science alone, but we can claim it for medicine as an art. For it is not exclusively the sciences which secure the blessings to the vocation of the physician, but it is the devotion to the relief of suffering, the readiness to help, the sympathy and the kindness of heart.

Right here a word of caution will not be amiss in reference to the ultrabacteriologic doctrines of the causation of disease and their influence on the treatment of the sick. This caution has already been expressed by Prof. O. Rosenbach, of Berlin, viz., we must not let any possible fear of contagion convert our sympathy and love for the patient into fear of the patient. It can not be denied that from time to time a physician or a nurse may contract a disease from the patient. There is no doubt in my mind, however, that for every one of such cases of direct infection there are ten others in which nurses and physicians have actually been protected from the disease by virtue of their very intercourse with the patient. According to the ingenious theory of Ehrlich, very slight infection, sometimes scarcely noticeable by symptoms, may actually immunize an individual against a severe attack of that disease. It has been known to me, for instance, that a family in which there was a typical case of typhoid fever, the blood of the remaining members of the family gave the Widal reaction, yet to all appearances they were in a perfectly healthy condition. The antibodies were being produced in their circulation and tissue cells, preserving them from a severe attack of typhoid fever, not only for the time being, but doubtless for a long time to come, and all this without even getting sick. Therefore, such experiences have led me to agree with Rosenbach in the opinion that intercourse with patients suffering with infectious diseases, especially with light attacks, may be able to protect and immunize the nurse and physician against infection. This does not by any means signify that the ordinary precautions against infection can be thrown to the winds. It is mentioned merely to strengthen the nurse in her devotion to duty and to avoid thwarting of her efforts by fear of contagion.

RECENT PHARMACOLOGY.

After the physical methods of treatment which I have mentioned, those offered by pharmacology rank next in importance. The products of the pharmacist and physiologic chemist have much enriched the armamentarium of the physician. Many new antipyretics have been brought out, medicines have been manufactured in a purer form, and older medicaments of approved value have been changed to a more pleasant form. New and useful medicaments for the production of sleep and the lessening of pain have been brought out. I greet it as a specially valuable advance that several remedies for the relief of pain, which hitherto could only be taken internally, and though very useful for the disease under treatment, yet frequently disarranged the digestive apparatus, can now be effectively administered externally through the skin. It has thus been found that very effective preparations of salicylic acid can be brought into a form which, when brought on the skin, will be so rapidly absorbed that the reaction for salicylic acid can be discovered in the urine within half an hour of the external application. The art of general and local anesthesia has experienced wonderful improvements in apparatus, technic and combination of agents.

Bacteriology has not only brought fertile ideas and facts into the science of pathology, but has opened an inexhaustible field for therapeutics. The discovery of the cure for hydrophobia and anthrax by Louis Pasteur

and the discovery of tuberculin by Koch was soon followed by the antitoxic serum for diphtheria and tetanus by von Behring. In connection with these glorious achievements, serum-therapy began to develop as one of the methods of applied therapeutics. It is true that of the many serums thus far prepared only that for diphtheria and that for tetanus have proved generally useful. The fact that the cholera, plague, typhoid, scarlatina, antistreptococcus and rheumatic serums have so far not proved as effective as those previously mentioned need not discourage further efforts to perfect them.

The explanation of the difficulties of preparing effective serums is given by Paul Ehrlich in his ingenious theory on immunity which has brought the complicated phenomena of immunity nearer to our understanding. The study of the effect of bacteria on the human organism has led to the discovery of the protective substances of the blood, of the toxins and antitoxins, of agglutinins and precipitins, of the cytolytins. It is impossible here to enter on the consideration of that most wonderful and stimulating of modern medical hypotheses on immunity which has been developed by the genius of Ehrlich.³

I desire to call attention to a probable outcome of these studies on immunity, to which I have elsewhere referred⁴ concerning the rôle of intracellular catalytic processes in the pathogenesis of malignant neoplasms. If it be possible so to adapt the blood of an animal to a particular form of cell that its serum shall become specifically destructive of these cells, we have here a possibility for the preparation of serums which will be effective in restricting the growth and perhaps of locally destroying malignant and other tumors. My own studies on the transplantation of malignant tumors lead me to believe that, with a fuller knowledge of cytology, the outlook for such serums will be more promising.

Closely associated to serum therapy is the treatment of disease by extract of animal organs, which is gaining more and more in definiteness and exactness of application. Perhaps the most interesting of these substances is the active principle of the adrenal bodies, epinephrin, first isolated by John Abel of Baltimore. Thyroidin and spermin belong to this class of remedies.

The astounding chemical versatility of the cells of the body, as evidenced in the production of such substances, and the immune bodies to which I have referred before, has forced on us a conception of the cell household as a complicated chemical laboratory. Prof. Franz Hofmeister, of Strassburg, in his essay, "Die Chemische Organization der Zelle," conceives the cell as executing its work by manifold enzymes, each working alone in a special little cell compartment. Thus we have a biochemical conception of the cell processes. This is analogous to the conception of Ehrlich, on which he has built his side-chain theory of immunity. Benedict, on the other hand, Jacques Loeb, and perhaps Wilhelm Ostwald of Leipzig, have developed the biomechanical conception of the cell's work. Virchow's conception was, in principle, a purely anatomic one. Thus we have many varied conceptions of the manner and means by which the cell performs its regular and irregular processes. Though apparently widely digressing, it is encouraging to observe how many of the more important of the results of

3. Aschoff, Ehrlich's Seltenkettentheorie, etc., *Zeltschr. f. Allgemeine Physiologie*, vol. 1, No. 3, 1902; also Wm. H. Welch, the Huxley Lectures on Immunity, *Science*, Nov. 21 and 28, 1902; and A Résumé of Recent Researches Relating to Immunity, by T. Mitchell Prudden, *N. Y. Med. Record*, Feb. 14, 1903.

4. *Amer. Jour. of Med. Sci.*, April, 1903.

the biochemical, biomechanic, and the purely anatomic methods of thinking, concerning the cell, are beginning to overlap and even to agree with each other.

SUBJECTIVE AND OBJECTIVE METHODS IN RESEARCH.

It might be argued that methods of thinking can not develop a science in themselves. This is true, for thinking should always be linked with observation and experiment. But, on the other hand, neither observation nor experiment alone can make a science. The formation of conceptions, however, from hardened facts of observation, and logical deductions of experiments, can form and develop a science. Unfortunately for our present methods of advancing medical knowledge, experiment alone has usurped the entire machinery of medical progress, and observation, as well as medical thinking, have been pushed to the background. It can not be sufficiently emphasized at the present time to use the words of Socrates, that "the conception is the fundamental condition of apperception and understanding," and Plato says of the sophists, "In the absence of a correct conception, they hold a learned discourse on the ass, when they mean the horse."

Very regrettable delays and even reverses in the progress of medicine have been experienced by the fact that one or other observer or investigator attempted to build his road into the unknown territory exclusively on one of the methods above outlined, namely, medical thinking, or observation, or experiment. One has criticized the value of thinking, the purely subjective method, another finds fault with the method of observation, a third applies his restrictions to the method of experiment, the purely objective method. This has resulted in an accumulation of a vast amount of scientific building blocks, but there is no coherent complete architecture in the modern science of medicine, and this is at least in part due to the perfectly unnatural separation of the three methods of attempting medical progress. It is very rare to find in modern medical literature even an attempt at a complete scientific plan, and this is largely explained by the fear of most investigators to use the method of medical thinking, or the subjective method, in association with the objective method. Martius (Pathogenetische Grundgedanken) says: "It is a curious thing that the more scientific, the more exact the method of an investigation in medicine, the more inimical to thinking are its advocates." This is, indeed, curious. Why should exactness of a method be associated with hostility to our subjective powers of research, the power of thinking, as a help for the solution of medical problems. Darwin, Hæckel, Julius Robert Mayer, and Helmholtz were not only great investigators, but even greater thinkers. The century that produced steam railroads and the electric light gave us the law of conservation of energy by Mayer, and this law, probably the greatest discovery of the nineteenth century, is proclaimed by those most competent to judge to be the fruit of a purely thinking act, and that the experiment attached thereto was a sequence to the thought. Investigators who pursue objective methods of research, based on experiment alone, pride themselves on their exactness in methods. Exactness and accuracy constitute, in the opinion of the experimentalist, the only and the most logical measures of correctness. But what is this exactness, the painful application of units of measurement, of units of weight, of instruments of precision, of accurately controlled conditions of arrangement in the experiment? What is all this exactness but the translation of a frequently very complicated act of thinking

into manipulations of science? The thought preceded the experiment. The subjective preceded the objective method.

J. P. Pawlow,⁶ most scholarly of Russian physiologists, attacks the adherents of vitalism and animism in physiology in a recent contribution. These terms, vitalism and animism, refer to the tendency to return to the older conceptions in physiology, which attributed the phenomena and processes of life to a "vital force," the "archeus" of Paracelsus and the "anima" of George Stahl, a something which was not explainable by the laws of chemistry or physics. The application of chemistry and physics to physiology has enabled us to understand a great many of the processes of life, and to explain them on a purely chemical or physical basis. But some of the clearest thinkers in physiology admit that many of the processes of life can not be explained on such a basis, and they begin to favor views attributing such life phenomena to a special energy in the living substance (neovitalism). They who favor the vitalistic and animistic aspects of physiology are apt to confuse the standpoint of the investigator of natural science with that of the philosopher. The objective investigator has hitherto accomplished his most far-reaching results by the study and comparison of objective facts, during which he ignored questions concerning the inner subjective nature and the fundamental principle underlying the thing investigated. The philosopher, however, embodies the tendency toward synthesis of thought, and in attempting this he begins by a fusion of objective and subjective phenomena. For the investigator everything depends on the objectivity of the method. This gives the possibility of finding solid and unbreakable facts and principles. This is the view of Pawlow. In my opinion, subjective and objective methods of investigation are inseparable. Even where the investigator believes himself to be purely objective in his methods, he is unconsciously and unavoidably subjective, because the objective accuracy and precision of his methods represent but a translation, an outward projection, of his own subjective train of thoughts, and when his objective facts are established they must again be linked and amalgamated into his own thinking, or that of others, in order to be of value for the progress of knowledge.

DIFFERENCE BETWEEN TRUTH AND FACTS.

We are living in a period in the history of medicine in which the experimental tendency has gained supremacy over speculative philosophy in medicine. But we are in the possession of such an enormous amount of new material and facts, which by additional experiments is daily increasing, that the new facts frequently must be allowed to remain unused, and are, for the time being, of no assistance in the advancement of our science. In this connection, I must again repeat what I have emphasized in the preface of the second volume of my work on "Diseases of the Intestines," namely, the difference between truth and mere facts. These two are often, unfortunately, considered synonymous. Facts are little truths that our senses are capable for the present of comprehending; but back of, and beyond these facts, later experience often reveals the higher and greater truth. An experimental fact which to-day seems absolutely disconnected and, therefore, without meaning may to-morrow, when viewed in another light, suddenly assume a far-reaching significance and importance. No new fact of experience or experiment, be it

5. "Psychische Erregung der Speicheldrüsen" (Ergebnisse d. Physiologie), 3d year, vol. I, p. 177.

at present apparently ever so remote from practical bearing, need be considered worthless, provided it is correct. It may be allowed to rest as raw material for a time, but it is probable that in another association it may acquire an importance which we did not anticipate.

But this I must emphasize, that an isolated, disconnected fact of experience or experiment has, for the time being, no significance for the progress of medicine. This significance comes only, then, when we can arrange and fix this fact into the already existing and firmly established architecture of our knowledge. There exists a danger in overrating the value of single facts of experience and experiment. Individual facts discovered this way are accumulating to such an extent that we are completely submerged under an ocean of experimental results, and the intellectual interpretation which fits them into the synthetic structure of our science is missing. Physicians who are not participants in experimental undertakings feel very painfully this absence of the connecting link between an enormous number of new acquisitions which, though experimental, are in a sense empiric. This is also true of the experimental acquisitions in bacteriologic as well as biochemic domains. In the eighteenth and during the first part of the nineteenth century medicine was comparable to a sterile unproductive heath, in which some evil spirits drove about the speculating medical philosophers in a circle. Now we have gotten into an overfruitful swamp or jungle in which the facts grow so luxuriantly that they threaten to smother our thinking powers. The tendency of all laboratories is to bring out new facts. Let us have all of them if it must be, but what we need as much, if not more than new facts, are master minds who will instruct us in the interpretation of these and old facts, and give them a meaning and value by fitting them into the synthetic structure of physiology and medicine. Martius compares modern medicine to a sense-confusing concert, and what is needed is a disciplinarian to instruct us concerning the leading motives, to seek the familiar law in the revealed wonders of the present time.

Aber im stillen Gemach entwirft bedeutende Zirkel
Sinnend der Weise, beschleicht forschend den Schaffenden
Geist,

Prüft der Stoffe Gewalt, der Magnete Hassen und Lieben,
Folgt durch die Lüfte dem Klang, folgt durch der Aether dem
Strahl

Sucht das vertraute Gesetz in des Zufalls grausenden Wundern,
Sucht den Ruhenden Pol in der Erscheinungen Flucht.

—SCHILLER.

The Passing of the Fijian.—The *British Medical Journal* states that the total population of the Fiji Islands is 121,773, according to the Colonial Office report, an increase of about 2,000 on the numbers of the last census in March, 1901. Of these, the pure-blood Fijians number 90,063, from which it appears that there has been the lamentable decrease in this short period of three years and a half of no less than 4,334. Most of this was due to a severe epidemic of measles in 1903, in which year the natives decreased by 2,481. In 1904 the decrease was 840, and it would seem as if the native race has been slowly but steadily disappearing ever since the terrible epidemic of measles in 1875, when over 40,000 are believed to have perished. The native death rate was 48.90 per mille last year, as against a white death rate of 15.25, and this with no epidemics and with a birth rate of nearly 40. The report does not comment on this high mortality which has been so long existent, but something might surely be done to ameliorate such conditions, though "native superstition and obstinacy" are represented as militating considerably against the measures lately taken to stamp out yaws.

Original Articles

CHORIONEPITHELIOMATOUS PROLIFERATIONS IN TERATOMATA,

ESPECIALLY IN THOSE OF THE TESTICLE; WITH THREE NEW CASES.*

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I. INTRODUCTION.

I. GENERAL REMARKS.

In recent years a peculiar form of tumor, known as chorionepithelioma, has been noted in connection with pregnancy. Since attention has been directed to this growth the reported cases have rapidly multiplied, so that they no longer should be regarded as a pathologic curiosity, but rather as a dangerous neoplasm with which the clinician may be confronted at any time, and which may convert, without warning, an apparently normal pregnancy into a rapidly fatal illness.

Hardly had these tumors become generally known, when renewed and added interest was aroused by the discovery of similar tumors in teratomata of the testicle. The resemblance of these two varieties of growths, though occurring under such diametrically opposite conditions, was too striking long to escape notice. It has been the effort of numerous workers to prove the kinship of chorionepitheliomata connected with pregnancy with those of teratomata.

In order to make clear the fundamental facts known about chorionepitheliomata it will be necessary to define these neoplasms, and the terms employed in describing them, although a more detailed account will be given later.

The chorionic villus, in normal pregnancy, is covered by a double layer of epithelium, of which the basal layer, variously known as the Langhans' cells (from their discoverer) or *Zellschicht* consists of clear polyhedral, mononuclear cells, containing glycogen. The covering layer is composed of larger protoplasmic complexes, giving on section the impression of poly-nuclear darkly staining sheets. They are known as syncytium. In the uterine musculature certain transitional types, called for convenience sake chorionic wandering cells, are found. In staining properties and general appearance they resemble the syncytium, but in size they are intermediate between the syncytial type and the *zellschicht*.

These three types of cells, all of fetal derivation, are regularly met with in the normal villous covering of the embryo and collectively may be termed the trophoblast. In the female, malignant tumors, directly continuous with the chorionic villi (often these villi are diseased, hydatid mole) and composed of the three types of cells just described, are known as chorionepitheliomata of pregnancy (Marchand). This chorionepitheliomatous or trophoblastic tissue was considered a distinct variety of tissue, peculiar to pregnancy, just as special as epidermis for instance. When, however, morphologically similar growths were found, quite independent of pregnancy, (in the ovaries of virgins and still more frequently in the testicle) this conception received a rude shock. The teachings of Marchand appeared discredited and, in fact, the so-called English Chorionepithelioma Commission was induced to hand in an opinion declaring that the tumors

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in question should be classed as decidual sarcomata, as they had been regarded until 1895.

When the derivation of chorionepitheliomatous tumors of pregnancy, however, is compared with that of morphologically similar tumors found in the testicle or elsewhere, a similar derivation can be demonstrated. For the chorionepitheliomata of the testicle were, in most instances, an integral part of a teratoma, and the genesis of teratomata, as will be shown later on, is comparable in many ways with the processes of gestation.

With these preliminary considerations disposed of, the reader is ready to study the series of cases, and the theoretical deductions based on them which led Marchand and others to the interpretations now commonly held.

CHORIONEPITHELIOMA IN THE FEMALE.

Early Cases and Their Interpretation as Sarcomata.—R. Maier^{1*} and Snger² are credited with the recognition of chorionepithelioma as a new and distinct variety of tumor. Maier regarded his two cases as a disease of the decidua of pregnancy. Snger and Chiari-Pfeiffer³ independently described their cases as malignant metastasising sarcomata of the decidua, without according any share to either epithelial or glandular constituents. Before these authors had called attention to this new field, such tumors probably were classified among the carcinomata or sarcomata of the uterus, as are the three cases of Chiari⁴ published in 1877.

Marchand⁵ was the first to champion the epithelial nature of chorionepithelioma (unless we except the cases just mentioned, in which the tumors were mistakenly grouped with ordinary carcinoma of the uterus). In his first article he considered the syncytium of maternal origin, and was inclined to regard the simultaneous participation of the fetal ectoderm (the Langhans' cells), with the maternal syncytium as a symbiotic growth. Since then⁶ he has leaned more strongly toward the genetic unity of these forms, at first according the possibility of both a maternal as well as a fetal syncytium, and in a still later article,⁷ in 1903, going so far as to state that Langhans' cells and syncytium are not only of similar origin but are interchangeably capable of assuming either the one form or the other in response to different functional requirements. R. Spuler⁸ had arrived at similar conclusions as to the genetic identity of the two layers in a rather unconvincing study based on the morphologic similarity and transition forms seen in the covering of two hydatid moles; this work has received the support of C. Ruge.⁹

The Relation of Chorionepithelioma and Hydatid Mole.—An intimate but not clearly understood connection between chorionepithelioma, hydatid mole, pregnancy and abortion will be noted in the cases to be described, but at the outset this connection was not correctly interpreted. Especially intimate was the relation to hydatid. According to the statistics of Teacher,¹⁰ based on 188 cases of chorionepithelioma, 74, which is 39 per cent., were known to have had a preceding hydatid. In how many instances the mole was discharged unnoticed can never be determined.

The intimate relationship to hydatid naturally led to renewed study of this growth, and to a change of previously accepted views. Virchow's¹¹ dictum, which classified hydatids as a myxoma of the placenta in which the stroma played the active rle, was finally dis-

carded, and again it is Marchand's views¹² which have been fully accepted. Accordingly, the stroma has been relegated to a secondary place, the swollen, translucent appearance being ascribed to hydropic changes. The active rle is assumed solely by the chorionepithelium, both layers proliferating with undetermined and variable intensity. As observations increased in number, hydatid moles were found, in rare instances, to develop malignant and destructive qualities causing death from metastases (Salowij-Krzyzkowski¹³); others produced metastases but showed no really malignant properties, the patients recovering without radical operative measures (cases of Pick,¹⁴ Schlagenhauer, Case 1¹⁵).

Morphologic Criteria of Malignancy.—In view of the great practical importance of determining the malignant or benign properties of such growths as soon as observed, numerous authors have searched for some morphologic criteria on which definite prognostic value could be based. Neumann¹⁶ regarded the large syncytial cells, occasionally seen in the stroma or just beneath the epithelium, as signs of malignancy, but Pick, Ruge and others have discredited his work. Various other characteristics, such as the increased size and richness in chromatin of the nuclei of the syncytium (Gottschalk¹⁷), or the presence of numerous chorionic wandering cells (Ruge¹⁸), have not stood the test of time, for similar pictures were shown to exist in normal pregnancy (Marchand, Pels-Leusden¹⁹). All recent writers agree that the morphologic pictures of malignant and non-malignant chorionepithelioma are identical, and that the subsequent course alone can determine the outcome.

This question has again been reopened by von Velits,²⁰ who not only claims to be able to distinguish spontaneous regression by the microscope, but also sees regressive changes macroscopically! The diminished vitality of the Langhans' cells is supposed to show itself by the absence or lessened number of mitoses; the presence of chorionic wandering cells is taken to be an additional indication of degenerative changes. Hrmann²¹ discusses these assumptions of von Velits fully, and convinces the reader that these, like the previously mentioned findings of Neumann and Gottschalk, deserve to be discarded.

In destructive hydatids within the uterus, no difficulty was experienced in showing direct continuity between the chorionectoderm and the advancing tumor cells (Neumann, Gebhard²²). In metastatic growths, Pick¹⁴ first demonstrated this continuity in a vaginal metastasis of an otherwise benign hydatid; Apfelstedt and Aschoff²³ in a true chorionepithelioma. Veit²⁴ subsequently published his views on villous emboli in pregnancy, which promised to complete the link in the chain of evidence prepared by the findings of Pick, Apfelstedt and Aschoff. Recently, however, Schmorl²⁵ has cast a doubt on Veit's conclusions, by observing that only after long and protracted labor, in which much manual trauma has been sustained, do entire villi enter the circulation. In hydatids or eclampsia, if emboli do occur, cells and not villi are transported. This again emphasizes the fact that the cells and not the stroma are the active agents.

Ectopic Chorionepithelioma.—Schmorl²⁶ reported a case in which, after the complete expulsion of an hydatid, chorionepitheliomatous metastases developed throughout the body, the uterus and tubes, however, showing no changes. These cases, classified under the name of ectopic chorionepithelioma, have multiplied,

* The references to literature will be given at the end of the article next week.

until recently twenty-one were collected by Findley.²⁷ In many, a previously occurring hydatid, which was either operatively removed or spontaneously expelled, had been noted; in a few a supposedly normal pregnancy or abortion, without observed mole formation, was regarded as the etiologic factor. This would oblige us to assume that the normal fetal placental tissues can be the precursors of such malignant growths. Against such a doctrine Schmorl's work and the so frequently observed preceding placental degeneration bear strong weight. Instances of only partial hydatid change, insufficient to destroy the fetus, or twin pregnancy in which one of the children is normal, the other reduced to an hydatid rest, have been reported (see Marchand). The chorionic changes may be so small in extent as to escape notice, and therefore we should accept only with great reserve cases apparently arising from a completely normal placenta, unless this structure has been subjected to careful examination. As the malignant course develops only subsequently, such complete observation is usually not made.

Increase of the Lutein in Hydatid and Chorionepithelioma.—The discovery of an increase in the lutein of the ovary during the course of hydatid or chorionepitheliomatous growths, led to the conclusion that there might be a causative relationship. Some authors went so far as to consider this hyperplasia, which was found in the form of lutein cysts, as a direct stimulus to the chorion ectoderm, which then developed increased proliferative activity and malignant qualities. A contrary view is expressed by Seitz,²⁸ who, examining the ovaries of thirty-six women between the second and tenth months of gestation, found lutein cysts and a varying increase of lutein, in addition to that of the corpus luteum, in all but one case. Patellani²⁹ still more recently reopens the discussion by showing that in a large percentage of chorionepitheliomata the ovaries, in consequence of the lutein hyperplasia, assume a characteristic sausage shape, and undergo marked increase in size, sufficient to prove of diagnostic value. This phase of the question must as yet be considered unsettled.

The specific character of the growth is well illustrated by the decidual changes observed in chorionepithelioma away from the placental site, analogous to those seen in ectopic gestation (Schmorl, Risel,³⁰ Holzapfel³¹).

The Causes of Chorionepithelioma.—The opinions and theories advanced to account for the causation of chorionepithelioma are almost as varied and numerous as those entertained about the etiology of tumors in general, and may prove a valuable argument against a parasitic origin of carcinoma (Ribbert,³² Pick³³). Marchand believes nutritional changes and chemotactic influences at fault, and that the earlier in the course of a pregnancy such abnormal growth begins the more malignant the subsequent course will prove, though originally³⁴ he inclined to Ribbert's opinion, that a loosening of cells from the general complex afforded the starting point. Veit³⁵ still regards the maternal uterine tissues as the starting point of the growth, which, according to this author, begins before pregnancy. A somewhat modified view is held by Pfannenstiel,³⁶ who turns to the endothelium of the maternal decidua for the origin of the tumor.

Death of the fetus, softening of the uterine wall, etc., have all been assigned as possible causes. Schnorl declares, however—and his work is based on weighty arguments—that most likely in every instance a diseased placenta, probably hydatid, has preceded. Of the 158

cases he examined for emboli he found proliferation of the cell emboli in one eclamptic only, who died ten days postpartum. As he has seen similar syncytial changes in inflammations, he is inclined to disregard this case. Of the other cases the emboli were numerous in three cases of hydatid, and in three cases of abortion in which neither uterus nor ovaries had been subjected to examination. In some of these cases the cells appeared to be undergoing active proliferation, giving the picture of an early metastasis of an atypical chorionepithelioma. These observations, however, bring us no nearer the real primary cause of chorionepithelioma than before.

Experimental Work.—Little experimental work has been performed. The placental emboli of Lengemann,³⁷ Lubarsch³⁸ and Maximow³⁹ have shed no light on the subject. Aichel,⁴⁰ in dogs, obtained structures similar to hydatids by subjecting parts of the placenta to pressure. Such resemblance appears incomplete, and no observations as to the final outcome of these artificially produced hydatids are on record. Vassmer⁴¹ implanted portions of a chorionepithelioma into the peritoneum of rabbits without result. Birch-Hirschfeld and Gartner⁴² were equally unsuccessful with placental tissue introduced into the jugulars of two goats.

For further and fuller accounts of chorionepithelioma of pregnancy the reader is referred to Marchand, Risel, Teacher and Findley.

CHORIONEPITHELIOMA IN TERATOMATA OF THE FEMALE. RECORDED CASES.

Thus far I have dealt solely with those chorionectodermic tumors which showed a distinct relation to pregnancy. Similar tumors have been observed, however, in patients in whom pregnancy could be positively excluded, either through youth or sex. As chorionepitheliomata of the testicle will be discussed in detail later on, only such as have been observed in females will be treated of here. If the case of so-called hydatid mole in a virgin of 12½ years, passed at her fourth menstruation (Bock⁴³), were to be regarded as authentic, it would furnish an example of an hydatid on a congenital basis, but as neither the macroscopic or microscopic description is complete or convincing, this case must be discarded entirely.

Lubarsch⁴⁴ describes a large retroperitoneal tumor in a girl of 13. The case is incomplete, as the material was obtained at operation and the patient returned to her distant home, no autopsy being permitted. The tumor showed all the characteristics of a chorionepithelioma and we must ascribe its origin to a teratoma of the ovary, unless we accept Risel's view that in spite of the tender years of the patient a pregnancy can not be excluded. Lubarsch himself was inclined to consider the resemblance a result of metaplasia forming a *Doppelgänger* of this type of tumor.

Pick's⁴⁵ case of Hedwig R., in which chorionepithelioma was found in a teratoma of the ovary of a child 9 years of age, can not be subjected to a similar imputation. Here the chorionepithelium was in spots in direct continuity with neuroepithelium. In some regions the growth assumed more nearly the typical form of Marchand. Other ectodermal, in addition to mesodermal and endodermal constituents, were also found.

Michel⁴⁶ reports an analogous case of "carcinoma" of the ovary, which he offers in support of the non-specific value of such chorionepitheliomatous tumors, but far from agreeing with him, I consider that Pick⁴⁷ proves that this tumor is of similar origin as his own case of Hedwig R.⁴⁸

In order to grasp fully the significance of chorion-epithelioma in teratomata and to account for their occurrence in connection with these growths, it will be necessary to take a rapid survey of our present views on teratomatous tumors.

THEORETICAL CONSIDERATIONS; AND EMBRYOLOGIC SIGNIFICANCE OF TERATOMATA.

Wilms,⁴⁸ in his earlier works believed that true teratomata could be found in the ovary and testicle alone, because he derived them from a *Geschlechteszelle* and considered dermoids elsewhere in the body as genetically distinct. Bonnet⁴⁹ regarded the frequent occurrence of teratomata in the male and female generative glands as due to the comparatively large size of the urogenital anlage in the fetus, which would account for the more frequent location of independent blastomeres in this region, but does not entirely preclude their occurrence elsewhere. Traub⁵⁰ ascribes it to the exceptionally favorable nutritional conditions which he experimentally determined in the ovary.

Numerous observations of teratomata at other sites, as in the abdomen (where some skeptic might still suspect a hidden connection with the generative glands), and in the thorax and head, are, however, on record. Ekehorn⁵¹ has collected no less than thirty-one cases of mediastinal dermoids. Many of these showed the three fetal layers once demanded as the sign manual of true teratomatous growths. A case of teratoma of the mediastinum with chorionepithelioma has been recorded by Ritchie and will be considered more fully later on. Dermoids and teratomata of the brain, bladder, coccygeal region and liver are also known. We can no longer accept Wilms' first view, which placed the embryos or teratomata of the ovary or testis in a distinct and separate class. The Marchand-Bonnet theory,⁵² which accords a genetic equality to all composite dermoids, embryos and parasites, is now agreed to by nearly all. Derivation from a blastomere or impregnated pole cell, which at an early stage has been cast out of the complex, will account for the three embryonal layers found in these growths. The earlier the liberation takes place, the more fetus-like and complex will be the resulting growth. Bonnet claims that an almost unbroken line can be traced from the *acardiacus amorphus*, on the one hand, to teratomata, in which the atypical proliferation has reached so high a degree that apparently simple tumors result. That not all layers need reach an equal degree of development is proved by the solitary tooth found isolated in ovarian stroma (Saxer⁵³), and interpreted as an unequally developed teratoma; or the struma colloides ovarii (Pick⁵⁴, Walthard⁵⁵), in which one tissue had developed at the expense of the others, either hiding the other constituents, or completely replacing them. Whether we should regard the blastomere or pole cell as the origin of teratomata has never been decided. This point will be touched on later.

The cases of chorionepithelioma occurring in teratomata of the testis are widely scattered in monographic literature, although Rissel has collected them to the year 1903. I will therefore briefly present all the available cases, but limit myself to their salient features.

2. CHORIONEPITHELIOMATA OF THE TESTICLE.

Nineteen cases of chorionepitheliomata of the testicle have been recorded. Some of these were at first regarded as sarcomata, and have only subsequently been reclassified under this new head. A detailed description of the clinical and morphologic characteristics of these tumors will be found in succeeding sections; in this sec-

tion the main features of the cases, and such deviations as will prove of special importance in the further discussion, or of special historical interest, alone will be considered.

In all the following cases (with the possible exception of Boestrom's) a primary testicle tumor was noted; and, in all which did not escape subsequent observation, death from metastases occurred within a comparatively short time. Microscopically, the chorionepitheliomatous portions will be found classified as either typical or atypical (see Section V), unless described in detail.

Three French reports, those of Malassez and Monod,⁵⁶ Carnot and Marie,⁵⁷ and Ch. Dopfer,⁵⁸ may be grouped together. These authors regarded their cases as sarcoma *angioplastique*, in which tumors, the large syncytial complexes, composed of darkly staining, vacuolated protoplasmic masses with many nuclei, attracted their chief interest. Because of the intimate relationship of the syncytia to the smaller blood vessels, and to extravascular collections of red blood cells, these authors ascribed vaso-formative properties, such as Ranvier had noted in the *taches laiteuses* of the rabbit's omentum, to the syncytium. Malassez recorded only the giant cell structures, but the others also describe clear, polygonal, uninuclear cells in carcinomatous, or alveolar sarcomatous arrangement. None of them either found or looked for teratomatous constituents.

Wlassow⁵⁹ added four cases to the literature. The data are incomplete. The major portion of each tumor was composed of clear, polygonal, glycogenic cells (of the Langhans type), arranged as in scirrhous or medullary carcinoma, or alveolar sarcoma. Syncytium was well represented in all. The metastases in Case 1 were typical. Noteworthy is the fact that the syncytium in the splenic metastasis showed a ciliary margin. Cases 3 and 4 contained teratoid portions, in the primary tumors, represented by ectodermal and mesodermal structures (cysts lined with various epithelia, embryonal muscle, cartilage, etc.). Because no endoderm could be found, Wlassow refused to accord an embryonal derivation to these tumors, and though he recognized their resemblance to the chorionepitheliomata of the female he, likewise, disregarded this feature. According to Wlassow the syncytium has a vaso-destructive, not a vaso-formative, function. The classification he adopted was that of a carcinoma *sui generis*, because an actively proliferating mesodermal anlage acted as the connective tissue of the growth. He chose the name of *epithelioma syncymatodes testiculi*.

Schlagenhauser⁶⁰ gave the first clear expression of the views now generally entertained. He claimed that the tumors in question are developed from teratoma, and are genetically equivalent to the chorionepitheliomata of the female. Going one step further, he assumed that rudimentary fetal membranes, in the teratoma, furnished the actual starting point for the tumor, and as evidence of the probability of a direct chorionic genesis, he cited cases of hydatid-like intravascular growths, discussion of which will be taken up later. The case he reported showed no distinctive features.

Schmorl⁶¹ published two cases. The first was described in greater detail by Steinert;⁶² the second was typical, showing both teratomatous and chorionepitheliomatous structures (the latter very limited in extent).

Boestrom's⁶³ case is noteworthy in that a small brain tumor, operatively removed, proved to be typical chorionepithelioma. Metastases in other parts of the body were of similar constitution, while the testicles were normal (?).

The case published by Steinert⁶² is of great theoretical importance, because not only were teratomatous (organoid) structures and chorionepitheliomatous tissues found in the testicle, but also in the metastases present in the retroperitoneal and mediastinal glands, and in the liver.

Steinert proposed three hypotheses to account for the teratomatous metastases: 1, Multiple blastomeres primarily deposited in the organs during early fetal life; 2, numerous blastomeres, in the primary tumor, which later were transported to other regions; 3, undifferentiated cells transported from the primary growth, at so early a stage of their development that they were still capable of producing all three fetal layers. Of these hypotheses the last is most plausible. The first presupposes multiple anlagen with a synchronous development of malignancy at their widely scattered sites; the second requires the assumption of quiescent blastomeres, hidden amid the tumor cells, while the third most nearly approaches our preconceived and more generally accepted ideas of tumor development (Ribbert). In the metastases, the chorionectoderm, in distinction to the other tissues of the teratoma, alone evinces "malignant" properties.

Steinhaus⁶⁴ case deserves no special notice. Teratomatous and chorionepitheliomatous formations both were in evidence.

Risel⁶⁰ (p. 145) reported two cases, which show important findings.

The first, in addition to the usual teratomatous and chorionepitheliomatous portions, contains ringlike forms resembling medullary canals of neuroepithelium, which, in one spot, are directly connected and continuous with syncytial masses, and where lining cysts, show complete transitions from ciliated to cubical, or even epidermoid epithelium.

The chief conclusions drawn from this case by Risel are that two forms of embryonal epithelium are here encountered in active proliferation—the chorion epithelium, with all its characteristics, and neuroepithelium, which shows a tendency to form analogues of a medullary tube; secondly, that the transition of cells of chorionepitheliomatous appearance with other epithelial cells, amid other tissues, bears witness to their genetic unity and speaks against their derivation from a special anlage of fetal membranes. He regards them as a special form of the fetal ectoderm, which in this instance has also produced actively proliferating neuroepithelium.

These conclusions agree with those entertained by L. Pick and appear to be fully warranted. Pick has most convincingly demonstrated direct continuity between neuroepithelium and chorionepitheliomatous cells, in his case of ovarian teratoma.

The second case of Risel (p. 151) is incomplete because the primary tumor is lacking. The metastases, with the exception of the prevertebral are typical. In the prevertebral tumor are portions composed of smaller, darker, uninuclear cells, often in ductlike or alveolar arrangement and without the accompanying fibrin and necroses, typical of chorionepithelioma.

According to Risel these areas are derived either from a proliferation of the epithelium of the seminiferous tubules, of the primary growth; or, as is more probable, from some epithelial tissues contained in the primary testicle teratoma (which was not available for examination).

Emanuel⁶⁵ reported a case whose distinctive features resembled those more fully discussed in connection with

the case of Askanazy.⁶⁶ The metastases were typical. The primary growth contained teratomatous formations and chorionepitheliomatous tissue which, in some parts, imitated carcinomatous, in others, papillary configurations.

von Hanseemann's case⁶⁷ lacked the primary testicle tumor, which had been previously removed. Noteworthy are the metastases in the aortic glands; in these cysts, with sero-sanguinolent contents lined with cubical and cylindrical epithelium, pointed to the teratoid nature of the primary growth. (These cysts, according to v. Hanseemann, in no way resemble the so-called "lymphatic cysts" sometimes found in the lymph glands.) The metastases elsewhere were typical. For the interpretation of these findings, what has been said in connection with Steinert's case applies.

Askanazy⁶⁶ reported the case sent to Dr. L. Pick by Dr. Salén of Stockholm. Its importance lies chiefly in the systematic study of the various forms assumed by the Langhans cells. Although some portions of the primary tumor are quite typical, transitions, not only to alveolar arrangement of the Langhans cells, but also to duct-like and complex papillary forms, clothing cyst walls, are described. Askanazy concludes that besides the usual typical and atypical types of Marchand the Langhans cells may assume alveolar sarcomatous, carcinomatous, cystomatous, angiomatous or papilliferous forms. Isolated occurrence of this type of cell in teratomata of the ovary and testicle, simulating simple tumors (epithelioma chorionectodermale in the sense of Pick) can thus be accounted for by an excessive growth of these elements. The chorionepitheliomatous tissue, according to this author, can be identified by its numerous characteristics even when it assumes fantastic or complicated shapes, and moreover, can be directly and unbrokenly traced to simpler forms which correspond to the types laid down by Marchand, and among other constituents contain syncytium, showing a foamy appearance, ciliated margin and a tendency to fibrous transformation.

Scott and Longcope⁶⁸ are the only American authors who reported a case of chorionepithelioma in the male. The testicle was undescended, and contained no teratomatous tissue (only cells of the Langhans type); the metastases were typical.

The last case to be mentioned is that of H. Dillman.⁶⁹ The testicle contained teratomatous, "adenocarcinomatous" and chorionepitheliomatous structures. The latter were represented only in one very minute area.

A case described by Langhans⁷⁰ appears so questionable that I have not included it in the literature. A description of this case, and the metastases of a testicle tumor examined by Eden,⁷¹ which almost positively was a chorionepithelioma, will be found in Risel.⁶⁰ Eden's case is too incomplete to be of real value. Historically it is of interest because it influenced the English commission to form a judgment against the fetal origin of chorionepithelioma in the female.

THE AUTHOR'S THREE CASES.

To these nineteen cases collected from the literature I am able to add three additional cases. The first two are from material kindly placed at my disposal by Prof. F. C. Wood, from the collection of St. Luke's Hospital. The first case was operatively removed seven years ago. At the time, the tumor was classified as a sarcoma of the testis. The second was very recently removed, and given to me by Professor Wood with the diagnosis of chorionepithelioma of the testis. The third case is derived from

a tumor of the mediastinum in a patient from the Roosevelt Hospital.

In all these cases the material had been put up in formalin or very weak alcohol, and in no instance was it possible to demonstrate glycogen. Sections were cut by the celloidin method. Besides the routine hematoxylin-eosin staining, picro-acidfuchsin and iron hematoxylin were employed.

CASE 1.—C. P. W., St. Luke's Hospital, operated on Nov. 23, 1897.

History.—The patient was a man 40 years of age. For two years enlargement of one testicle had been noted, the increase being gradual and uniform. Local applications and tapping, at which only a little bloody fluid was withdrawn, proved of no service, but injection of iodin was followed by a marked reduction in size. During the past few months the tumor has again, and more rapidly, increased, and the patient has lost twenty pounds in weight. The tumor was removed. The subsequent history is unknown.

Macroscopic Examination.—The testicle and epididymis are completely fused, forming a mass irregularly quadrilateral in shape, 10 cm. by 10 cm., and 6 to 8 cm. thick. The surface is smooth, with dilated blood vessels showing through the tunica and occasional slight nodular projections. At the upper pole a thick but otherwise normal spermatic cord is found. Its veins are varicose. The color of the entire tumor is a faded greenish-blue from the preservative, in which it has lain for seven years. Sections across the entire growth show several large districts separated by dense, coarse, fibrous septa which converge upward and toward the beginnings of the cord. The largest and most central area has an irregular pitted surface and brownish-gray uniform color. Nearer the cord the tissues are denser, more fibrous, and smooth on the cut surface. At the lower pole the color is more yellowish and mottled yellowish-brown. In almost direct continuity with this portion of the mass is a region of diffuse hemorrhagic appearance which has all the characteristics of the often described "recent thrombotic areas" (Hansemann and others). Small punctate hemorrhages are seen everywhere in this neighborhood. Nowhere are there any indications of cystic structures, bone or cartilage. No testicle substance could be found. Numerous pieces were removed from all parts of the tumor, which was too large for making serial sections.

Microscopic Examination.—The findings are very varied, but certain types of cells in different groupings can be isolated on analysis. The albuginea is normal except for occasional areas of fibrous thickening. From this tunic septa extend into the tumor; the larger strands were already visible macroscopically. By frequent subdivision the strands become thinner and thinner until narrow fibrous bands surround the alveolar portions of the tumor epithelium. No Leydig's cells are seen in the testicle proper; at the beginning of the spermatic cord, which is normal, many of these cells can be observed. The vas is normal. No seminiferous tubules were found.

The macroscopically necrotic areas are formed by a structureless faintly granular mass traversed by bands of fibrin, and occasional areas of degenerating round cells. At the margins of these large areas poorly staining cells of various kinds occur, some well advanced in a degenerative process, others still showing traces of nuclei and cell outline. There are no large or diffuse hemorrhagic areas, but small extra vascular collections of red blood cells are not uncommon. Except in the old fibrous septa no blood vessels of any size appear. Between the tumor alveoli, soon to be described, occasional capillary vessels may be seen, some of which show a more intimate connection with the tumor cells.

1. The epithelial cells are polyhedral, with cytoplasm in spots taking a fairly intense eosin stain, especially in the most actively growing portions, in other parts very light or finely granular and transparent. The cell outline is remarkably sharp and shows the effect of contact pressure. The nuclei are round or oval, have a sharp nuclear membrane, deeply staining chromatin and one or two nucleoli. The size of the cells varies from 10 to 14 microns, that of the nuclei from 8 to

11 microns. The line of demarcation between the fibrous stroma and the tumor cells is very sharp. At the edges of the tumor the advancing cells appear in longer narrow columns, and here and there a few may be seen in the narrow tissue spaces.

2. In some of the alveoli are scattered larger and more deeply staining cells of varied shape, with multiple nuclei. They resemble foreign body giant cells. In other districts enormous protoplasmic masses, reaching 500 to 700 microns in length, and 50 to 100 microns in width, and with very numerous nuclei, are found at the edges of the alveoli, also sending processes between the cells of type 1. These syncytial forms may have a homogeneous, deeply staining protoplasm, but more often a vacuolated and "foamy" appearance predominates. The nuclei vary in size, but on the whole are smaller than those of the main tumor cells, more deeply staining, and with a closer nuclear network. Usually no nucleoli can be distinguished; no mitoses were seen. Fragmentation, pyknosis, vacuolation, and other degenerative nuclear changes are not uncommon. Occasionally giant nuclei of the most bizarre shapes can be found. Where the foamy or vacuolated cytoplasm is present the nuclei show semilunar or other compression or distortion shapes. Within the syncytium or at its edges are cells of type 1, some well preserved, others degenerating, still others showing a nearer approach to the syncytial type by deeper staining of the cytoplasm and indefinite cell outline (Fig. 1).

3. Sometimes arising from the spreading syncytium, at others independent of it, are narrow, elongated cells reaching a length of 20 to 30 microns with most intensely staining elongated nuclei. These cells may be seen within the alveoli, and also advance into the surrounding fibrous tissue. Wherever they are found the cell growth is very active.

4. Transitional cells of very varied size and appearance are seen arranged like the cells in epithelioma of the skin. The alveoli usually show a rounded outline, and almost invariably contain large and numerous syncytial masses. The cells may be but little larger than cells of type 1; others reach three or four times their dimensions and resemble large and irregular cartilage cells. Their protoplasm is uniformly light, their cell outline sharp. Many are found within the syncytium, their outlines being well preserved. The nuclei are light, show much chromatin, nucleoli and a well-marked nuclear membrane. The most diverse sizes and shapes are encountered. Mitoses are rare, but not entirely wanting (Figs. 2 and 3).

The different quantitative arrangement of these constituents gives an extremely varied picture. The syncytial masses usually have large collections of red blood cells in close proximity; some of the blood cells are also found in the vacuoles of the syncytium, which often acts as a boundary to large blood lacunae. Capillaries are also seen surrounded by cells of type 1, and may end in the blood lakes just referred to. Their endothelium may be preserved, or only partially destroyed, syncytium or cells of the other types forming the boundary.

No glycogen could be demonstrated in the specimen, which had been preserved for seven years in formalin, later in weak alcohol, but the cells of type 1 morphologically were similar to cells containing glycogen.

To sum up, the tumor was composed of an alveolar epithelial growth which showed a tendency to hemorrhages and necrosis. The tumor elements consisted of cells closely resembling Langhans' cells, syncytium, chorionic wandering cells and transitional forms, arranged in some spots as in the typical form of Marchand, but yet in the main the alveolar arrangement predominating. Single fields can be found in which no one could distinguish the picture from that of a chorion-epithelioma of the female. This effect is heightened, where, by chance, a projection of the stroma forms a villous-like figure covered with Langhans' cells and syncytium.

No other ectodermic, no mesodermic or entodermic structures were found.

CASE 2.—R. C., St. Luke's Hospital, admitted March 10, 1905, aged 16 years.

History.—The family and previous history of the patient is negative. Two months ago he noticed that the left testicle was larger than the right one, and it has gradually increased until now it has attained the size of an orange. Until one week ago there was neither pain nor discomfort, but since then the tumor is tender on palpation. For the last two nights a dull testicular pain has prevented sleep. There was no loss of flesh and strength, and no other symptoms.

On examination nothing but the swelling of the testicle was found.

The testicle was removed; the wound healed promptly. The subsequent course will be followed, if possible.

Macroscopic Examination.—The testis and epididymis form a single mass about the size of a goose egg. The tunica is smooth and normal; the cord shows no macroscopic changes. On sections the diffuse hemorrhagic appearance is striking. The hemorrhages have not the "thrombotic" form usually noted, but a more arterial, brighter red, and less even carnified consistence. Large areas show a low papilliform surface such as is seen in recent adherent pericardium. Macroscopically no cysts are noticeable. Here and there the hemorrhages are more compact and typical.

The growth had already been cut into several pieces when it reached me. Numerous blocks were prepared and examined.

Microscopic Examination.—Large areas of fairly normal testicular tissue were found. Some seminiferous tubules appear to be functioning; others, nearer the tumor, are undergoing pressure atrophy, and still others are almost unrecognizable and necrotic where embedded in a granular homogeneous mass. In some spots the active tumor tissue is in fairly close proximity to the tubules, but always separated by a considerable layer of fibrous tissue. Nowhere do the seminiferous tubules show an increased proliferative activity or break through into the surrounding stroma. The stroma and Leydig's cells are considerably and uniformly increased.

The tumor proper is separated from the remaining testicular substance by no distinct capsule, but yet there is everywhere at least some intervening space filled by fibrous or myxomatous tissue.

The teratomatous nature of the growth is unmistakable. The ectoderm is most typically represented by rudimentary skin in one spot. Here both the stratified stratum corneum and the deeper rete Malpighii are plainly shown lining one side of an oblong cavity about 8 mm. long, and shading off into a lower multiple layer of epithelium, which finally becomes cubical and single, dipping down to form two simple glandlike structures and eventually breaking up and diffusely invading the stroma. By means of serial sections a direct connection between the epidermis and the typical papilliferous structures now to be described could be traced, the transition being gradual but unbroken (Fig. 4).

Numerous simple cysts, as well as papilliferous cysts, are lined with epithelium. These epithelial cells are cubical or of irregular polyhedral shape, with sharp angular cell outline and clear cytoplasm. The nuclei are large and oval, have a distinct cell membrane, often one or two nucleoli, and granular chromatin network. Mitoses are common. The size of the cells is fairly uniform, varying between 10 and 14 microns, the nuclei reaching 8 to 12 microns. In many spots the structures are very complex, cysts, true papillae (shown to be such by serial sections), and rugae form a bewildering appearance almost similar to that seen in malignant adenoma. On the papillae the epithelium is often multiple. In numerous places the epithelium invades the stroma, forming cell columns or quite as often assuming a diffuse reticulated distribution. In the neighborhood of hemorrhages or of small blood vessels, the epithelium leaves the main papilla in an irregular fan-shaped form, the cytoplasm is darker, the nucleus larger, less regular, and the type changes to that of the chorionic wandering cells (Fig. 5). These cells have a nucleus, 10 to 15 microns or more in size, and the cell body may reach as high as 30 microns. These cells abound among the hemorrhagic detritus, and about, or even under, the endothelium of the small ves-

sels, which show incomplete or eroded walls. Among this type of cell numerous smaller and lighter cells similar to those previously described are scattered. No large syncytial masses were found in spite of repeated and thorough search. The epithelium, however, in many regions has a more syncytial appearance due to loss of cell boundaries. About some blood vessels of larger than capillary size, but with very thin walls, the epithelial cells of both types are grouped, so as to give the appearance of a perithelial sarcoma. The cells are closely placed about the vessel, but away from it gradually become further separated into alveolar forms by the connective tissue.

Circular or elongated tubes lined with a high, cylindrical epithelium with small basal nucleus or an occasional goblet cell are found. They have a distinct membrana propria, and one or two circular layers of unstratified muscle surround them. These structures were interpreted as entodermal formations.

The mesoderm is represented by fibrous, fibrosarcomatous and true myxomatous tissue, also by scattered unstriped muscle, and by several islets of cartilage.

Of the well preserved portions of the growth by far the greater part is composed of large irregular alveoli, very similar to the alveoli of carcinoma. The stroma has already been described. In some spots it sends fine fibrils into the alveolus, but on the whole any indication of intercellular substance is wanting.

This case must be interpreted as a teratoma containing all three layers, in which chorionectodermal tissues (in the sense of L. Pick) have undergone active proliferation. The Langhans cells line cysts, cover papillae, surround blood vessels, and assume more diffuse though never typical alveolar arrangement. Chorionic wandering cells are common; large syncytial formations are not represented. In one spot an unbroken connection between an epidermis-lined cyst and diffusely growing chorionectodermal tissue could be traced.

CASE 3.—N. S., male, aged 21, was admitted to Roosevelt Hospital Sept. 17, 1904; died Oct. 21, 1904.

History.—According to the patient's own account the present illness began three weeks previously with a chill followed by fever. For the last two weeks he has had cough and blood streaked expectoration, with sharp thoracic pain between the shoulder blades, most marked while lying down. There has also been weakness, dyspnea and loss of weight.

On admission the veins of the neck and shoulder of the left side were more dilated than on the right. The heart was displaced slightly downward and to the left. Above the heart was an area of dullness, and a loud systolic murmur could be heard posteriorly at the level of the sixth dorsal vertebra. Anteriorly over the left upper lobe was dullness, bronchial voice, diminished breathing and sibilant and sonorous rales. Similar signs were heard over the right lower lobe posteriorly. The abdomen was distended without the signs of free fluid. The temperature was irregular, hectic, and rose to 104 degrees. On September 29 the patient coughed up half an ounce of pure blood. He died with symptoms of general weakness and dyspnea. On admission the case was diagnosed as one of aortic aneurism; later the diagnosis was changed to that of mediastinal tumor.

An autopsy was performed, but no record kept. Small portions of the lung, liver and necrotic parts of the mediastinal mass were preserved. At no time was any note made of the size of the testicles; presumably they were of normal size.

Macroscopic Examination.—The material from this case consisted of numerous small pieces from the mediastinal mass and nodules from the lung and liver.

The mediastinal growth was of a dark green-brown mottled color, with circular hemorrhagic and necrotic areas of very friable consistency and smooth marble-like surface. The pieces from the lung showed fairly normal lung tissue, which was spongy and contained air. Within these pulmonary tissues irregularly spherical nodules from pea to cherry size were scattered. In color they corresponded to the hemorrhagic



Fig. 1.—Case 1. Tumor of the testicle. To the left is an enormous vacuolated sheet of syncytium. To the right and above is an alveolar collection of Langhans cells surrounded partly by syncytium, which is also found in the center of the alveolus, partly by a fibrous septum. Lower down the syncytium contains isolated Langhans cells, giant nuclei and vacuoles, within which are a few red blood cells.

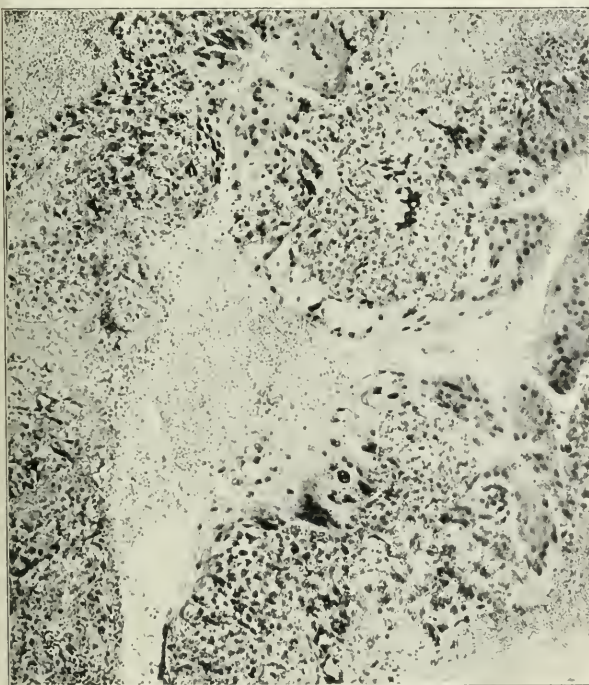


Fig. 2.—Case 1. Tumor of the testicle. Alveolar arrangement of Langhans cells, with intimate relation to large syncytial masses. The syncytium is typically vacuolated and bounds large blood spaces. Transition types abound. At the periphery (left upper corner) are fibrous septa and granular detritus.

areas seen in the mediastinal growth, but they were of firmer consistence and less necrotic.

The portions of the liver preserved were of uniform brownish color, and grossly showed no changes. Glisson's capsule appeared thickened. The nodules were similar in size, color and shape to those found in the lung, except in one spot where a larger and more diffuse area was found. This was less sharply demarcated from the surrounding liver tissue and showed advanced areas of necrosis centrally. In close proximity to this region were two nodules, one of pea size, the other nearly as large as a cherry, of totally different nature. Irregularly spherical but traversed by fibrous bands, these tumors were white in color and softer in consistency, showing on section a tendency to project above the surrounding liver. Here there were neither hemorrhages nor necrosis.

Microscopic Examination.—With the exception of the two small liver nodules just mentioned the eight nodules of liver and lung were exactly similar. Their outline was fairly sharp. Centrally, in each, was a large, hemorrhagic area composed of degenerating red blood cells, fibrin, detritus and almost unrecognizable cell material. Peripherally was a cellular area of varying width formed by clear polyhedral epithelial cells strongly similar to those of the Langhans type, with large and typical syncytial masses. The syncytium showed numerous well preserved nuclei, vacuolation and protoplasmic processes. Moderate numbers of transitional types were present. Large and small blood lacunae abounded near, or surrounded by, the syncytial masses. The arrangement was that of the typical chorioneplithelioma of Marchand. The surrounding lung tissue in some portions was normal; in others the alveoli were filled with a pneumonic exudate. In some regions a fibrous septum of considerable thickness, probably antedating the tumor, separated healthy and diseased area. The liver tissues show much bile pigment in all the liver cells. Where the tumor and liver tissue abut the difference in cell types is very distinct. The liver trabeculae are dark,

filled with pigment granules and have a homogeneous appearance. The Langhans cells stand out clear and lighter and show neither pigment granules nor dark coloring. The syncytium also is distinct; its nuclei larger and darker than that of the liver cells; its cytoplasm vacuolated

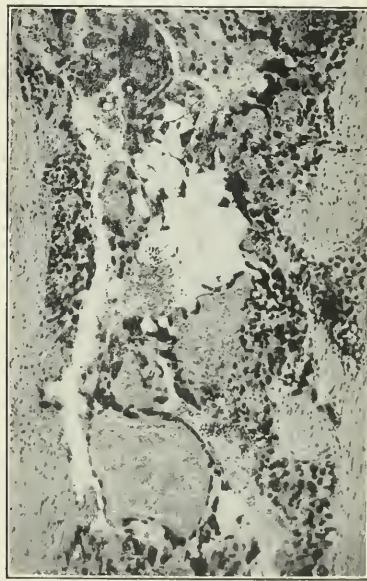


Fig. 3.—Case 1. Tumor of the testicle. Syncytium and Langhans cells as in the typical chorioneplithelioma of Marchand; at the edges young connective tissue.

and more granular. Although in many places in direct contact, no continuity with liver tissue could be found. The liver cells often show the effect of pressure. There are marks of chronic congestion and Glisson's capsule is thickened. A few outlying vessels are filled with Langhans cells (Fig. 6).

The contrast between the pigmented liver cells and the clear, light tumor constituents is very striking.

The pieces from the mediastinal tumor show formless necrotic tissue.

As the testicles were not examined, and the parts of

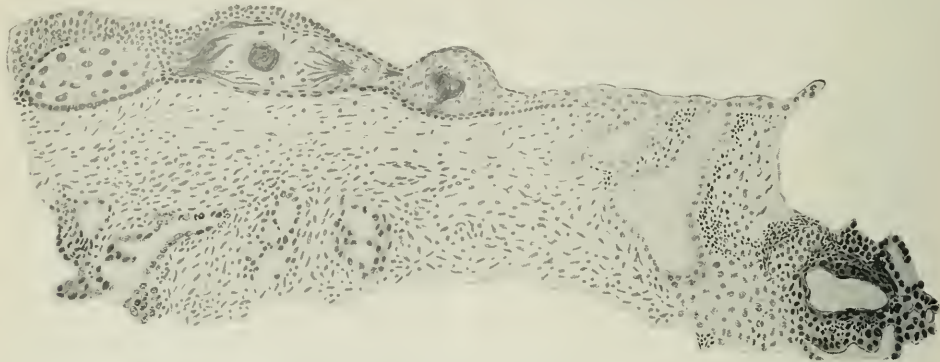


Fig. 4.—Case 2. Teratoma of the testicle. Part of a narrow cavity 8 mm. long is shown. To the left is epidermis with hornified epithelium, merging toward the right into a lower layer of epithelium, which dips down to form two glandlike structures. At the bottom of the deeper gland the epithelium is more darkly staining and fused. In direct continuity is a more alveolar arrangement of the cells, which by unbroken transitions merge into the papilliferous structures, composing the main part of the tumor. To the left and below is one of these papilliferous cavities.

The two whitish metastases are composed of a single type of cell somewhat smaller than those of the zellschicht, with clear though more deeply staining cytoplasm and similar nucleus. They are arranged like the cells of an alveolar sarcoma, the fibrous tissue entering and subdividing in the very large irregular alveoli. At the periphery the cells in small groups invade the liver substance, crowding aside the liver

the mediastinal tumor submitted to the microscope showed only necrosis, the genesis of this tumor can not be cleared up. Very possibly a more careful autopsy might have demonstrated a mediastinal dermoid or teratoma. The metastases are absolutely characteristic of chorioneplithelioma.

(To be continued.)



Fig. 5.—Case 2. Teratoma of the testicle. Below, this shows closely aggregated complexes of Langhans cells on a fibrous stroma (infiltrated with round cells). Above the cells assume the type of chorionic wandering cells and approach a small arteriole (the red blood cells within this are drawn too small) whose wall they invade. At the extreme upper angle is necrotic material and debris.

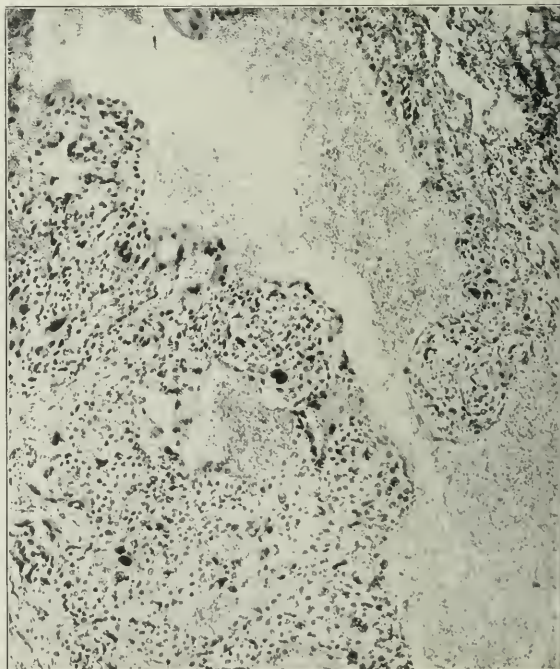


Fig. 6.—Case 3. Liver metastasis. Typical chorioneplithelioma. In the center an enormous blood lake bounded by Langhans cells and syncytium. The cells are compressed and contain bile pigment.

FRACTURES OF THE OLECRANON TREATED BY SUBCUTANEOUS EXARTICULAR WIRING.

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Considering that coaptation of fragments in fractures of the olecranon is not easily obtained by manipulation, the maintenance of the fragments is frequently an impossibility, and the treatment by splints or casts is frequently followed by ankylosis or impairment of motion, I have come to the conclusion that operative treatment is the most advisable. On the other hand, the exposure of the elbow joint appears to me to be dangerous. The open treatment that Lord Lister applied to fractures of

History.—Patient, 40 years of age, a police officer, was caught between a wall of an alley and a wagon by a runaway team, May 22, 1905. His right arm was slightly bruised and the right elbow severely hurt. Suffering great pain, he consulted a physician shortly after the accident. Physician put the limb in flexion (about 90 degrees), and applied a plaster-of-paris cast to the elbow, stating that in all probability patient's elbow would remain stiff. For thirty hours after the accident patient had considerable pain.

Examination.—He came to my office on the request of his physician May 23. In accordance with an understanding with his first physician, I removed the cast and examined the arm with the fluoroscope. I found a transverse linear fracture of the olecranon. The olecranon was divided into two halves, which were separated by a distance of three-fourths of an inch. In my opinion, an operation was advised and patient consented. The indication for operation in this case was the great separation of the fragments, the



Figs. 1 (lateral view) and 2 (posterior view).—Wiring the fragments of the olecranon together. *a*, Incision; *b*, twist or tie of wire; *c*, hole drilled in bone for passage of wire; *d*, fracture; *e*, passage of wire through tendon of triceps.

the patella, and which is practiced to a great extent today in England, does not appeal to me in the case of fractures of the olecranon. I have always feared to open a joint, even under the greatest aseptic precautions, for we all know that the liabilities of infections in a joint are greater than those in the peritoneum. Therefore, the subcutaneous and exarticular wiring of the olecranon seemed to me the most advisable and the simplest procedure. As far as I have been able to learn from the literature, subcutaneous wiring of the olecranon has not been resorted to by any one else. It is such a simple and practical procedure that I have felt that its publication might be beneficial to the general practitioner and surgeon, who undoubtedly have had unpleasant experiences with such fractures. The following is the history of our case:

upper fragment being drawn upward by contraction of the triceps. I was convinced that without operative treatment it would be very difficult to coapt the fragments and that a fibrous union would be the result.

Operation.—May 24, 1905, a longitudinal incision 1/3 of an inch long was made on the external aspect of the ulna, one-half inch from its articular surface, and tissues were divided to the bone. A smaller incision was made on the corresponding inner side. I perforated the base of the olecranon with an eyelet drill, which ran transversely from outward inward. I threaded the drill with a fine aluminum-bronze wire, drawing it through this transverse canal (Fig. 2). The wire was carried upward under the skin on the inner surface of the elbow and then drawn out through another small incision, one-sixteenth of an inch, made at the level of the apex of the olecranon. The wire was then reinserted and directed transversely from inward outward, passing it through

the tendon of the triceps above the olecranon, and then drawn out to a corresponding outward point through a very small incision similar to that made on the inner side. The wire was again reinserted and pushed downward under the skin until it was finally brought out through the initial external incision. The circle once completed, traction was exerted on the wire until I was sure that the two fragments were in perfect coaptation, the latter being easily and satisfactorily accomplished. The ends of the wire were twisted several times and then divided by scissors close to the bone. By this procedure the skin was incised at four points (Fig. 2), the largest incision being $1/3$ of an inch in length.

The coaptation of the fragments was perfectly assured by the traction of the wire. The latter could not slip, the lower part of the wire being inserted through a bony canal, while the upper part passed through the tendon of the triceps and pressed against the bony button of the olecranon (Fig. 1, E). The main advantage of this procedure is, first, that the operation is entirely extantular, an advantage which, of course, needs no further explanation or praise; and second, passive motion can be instituted immediately after the wiring.

The operation finished, the elbow was put in extension and so maintained by an anterior plaster splint which was fastened by a bandage. Following the operation, the patient had slight pain, which in a few days diminished considerably and finally disappeared on the twelfth day, when patient left the hospital entirely free from pain. The splint was temporarily removed on the third day and each of the following days, passive motion being used, and at the end of four weeks entirely abandoned. The patient has since resumed his work and has had perfect use of his arm and no pain.

Postoperative History.—Patient was thoroughly re-examined Oct. 22, 1905. Form and contour of the right elbow similar to that of the left. The natural obtuse angle formed by the axis of the right arm and forearm is equal to that of the left. Flexion and extension of the right elbow is painless and equal in extent to that of the left elbow. Palpation reveals a perfectly smooth surface; in other words, there is no interruption in the continuity of the periosteum of the olecranon. No pain on active or passive motion. The right elbow joint is functionally normal. Where the wires were twisted the continual mechanical irritation produced a small bursa, which does not inconvenience the patient in the least.

I hope the general practitioner will realize that this procedure is both practical and harmless, and does not require great surgical skill for its performance; furthermore, it gives assurance of a perfect result.

A CASE OF INFANTILE SCURVY.

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Infantile scurvy is a comparatively rare disease everywhere, though becoming more frequent. Chiefly because of its infrequency it is often unrecognized, and so reports of single cases, even if they add nothing to the real knowledge of the subject, may be useful by calling attention to the existence of the disease when it might otherwise be overlooked. For this reason I report the first case that has been treated in the university hospital.

Summary.—Case of infantile scurvy treated for two months with diagnoses of neuritis and probable anterior poliomyelitis, with sore mouth. Easily recognized as infantile scurvy by ocular proptosis with subcutaneous hemorrhages of the eyelids, characteristic swelling and discoloration of gums, depression of anterior thoracic wall, swelling and tenderness of wrists and ankles; slight rickets, sweating of head; rapid recovery on change of food and use of orange juice.

Patient.—E. B., aged 10 months, admitted to university hospital Oct. 23, 1905. The mother, aged 24, was very small as



Fig. 1.—Dr. Dock's case of infantile scurvy. The photograph was taken after improvement began, and the front of the thorax does not look so much like that of a cadaver after necropsy as it did in the beginning.



Fig. 2.—Skiagraph showing swollen arm.



Fig. 3.—Skiagraph showing swollen leg and foot.

a baby, but has always been well since then. She looks well and is of robust frame. The father, a well-to-do farmer, is 26 years old and in good health. The patient, their first child, was born Dec. 26, 1904. The birth was not difficult.

History.—The mother tried to nurse the baby, but after three weeks was obliged to stop. Milk and water, equal parts, sterilized by boiling for one hour, was next used. Barley gruel and milk sugar were added to the milk from the third week. The child vomited curds and was tympanitic, so a change was made, at 5 weeks, to the following preparation: Milk, 10 tablespoonfuls; water, 24 tablespoonfuls; Mellin's food, 4 teaspoonfuls.

As this was not taken well, the Mellin's food was increased and the water lessened, and up to the time the patient came to the hospital she took the following: Milk, 25 tablespoonfuls, water, 7 tablespoonfuls; Mellin's food, 9 teaspoonfuls. The mixture was heated to 165 F. for about ten minutes. The quantity taken at each feeding was rarely more than 3 ounces, and for some time five feedings were given in twenty-four hours.

The weight at birth was $8\frac{1}{2}$ pounds; at 5 months it was 14 pounds; at 8 months, 15 $\frac{1}{2}$.

Constipation has been the rule, rarely interrupted for a day at a time with as many as three to six stools in a day. In the end of August there was bright red blood in the stools and then for from two to three weeks the stools were almost black, becoming natural only about October 10.

The lower central incisors were cut at six months, without special difficulty. At the end of August the upper central incisors began to appear. At that time it was observed that the baby screamed when her feet were touched. Soon she ceased to use her legs, but there were variations in the degree of this. Then the back became sensitive to touch and she stopped sitting up in the middle of September. Then the arms became quiet, the left almost entirely so. The right arm was only moved to put the thumb in the mouth, where it was kept most of the time. As the upper teeth were slow in coming through the gums were incised. About the last of August the upper gum became swollen, appearing like a blood blister which subsided slightly at times, though the main swelling never disappeared nor became much smaller. The lower gum became swollen after the upper one.

About October 15 the right upper eyelid swelled suddenly. Eye salve was applied. The swelling subsided, but left a bluish red discoloration. The left upper eyelid became swollen October 23, and when admitted the lid was swollen so it did not open, was deep pink and edematous looking. The head has perspired profusely for a long time. There has never been any sign of laryngismus stridulus.

Status Præsens.—October 24: The baby lies with its right index finger in its mouth. Occasionally cries, but cries at once on being disturbed. Is of fair size; weighs 15 pounds. The head is square; anterior fontanelle 38x34 mm.; soft blowing systolic murmur over it. The scalp is sweating slightly.

The right eye is prominent. The upper lid is slightly swollen and shows a pale blue oval discoloration at the upper margin. The left upper eyelid, which was closed yesterday and bright red, is less swollen; pale red; the skin finely wrinkled. The lids open one-eighth inch. The bulbs move naturally; both are very prominent and seem to look down. The conjunctiva is normal.

The rest of the face is slightly puffy, the cheeks flushed, ears pale. There is a scanty eruption of minute red papules in the scalp and on the abdomen, but no petiche.

The lower central incisors are about half way through. The gum around them is slightly swollen, reddish purple, the purple most marked close to the teeth. The upper incisors can not be seen. The gum over them is swollen, forming two oblong oval elevations, the right 1 cm., the left 1.5 cm. long. These are dirty red at the bases, blue at the tops, but the extreme tops are broken and appear as ragged dirty-looking ulcers covered with small granulations. The mucosa of the rest of the mouth and pharynx is healthy looking; the tongue is not swollen; has a very thin white coat.

The thorax is of good size. The sternum and costal cartilages are flat and look as if pushed in, forming a ridge running from the nipples to the flanks, parallel to the margin of the ribs, from which the ridge is separated by a shallow groove. The chondrocostal articulations are firm; very slightly swollen. Heart and lungs negative.

The abdomen is below the level of the ribs. Liver and spleen not enlarged. The back is tender, but otherwise negative.

The left arm lies extended; the right thumb is in the mouth and can be moved away without evidences of great tenderness. The wrists and lower fourths of the forearms are swollen; the skin is not tense, but there is a firm swelling seemingly beneath the deep fascia. The hands are emaciated. The thighs and knees are negative. The upper parts of the tibiae are not distinctly thickened. The lower thirds of the legs and the ankles are swollen, the skin glossy, and at the same time pitted, like an orange peel, with slight bluish yellow discoloration. The swelling is very firm. Touching the arms and legs causes severe crying, with many tears. The legs and feet are kept extended; no effort is made to move them.

Blood: Reds, 4,000,000; leucocytes, 11,700; hgn., 80 per cent. Differential count (Dr. H. A. Freund): Small lymphocytes, 14.2 per cent.; large lymphocytes, 9 per cent.; polymorphous, 75.2 per cent.; transitional, 0.8 per cent.; eosinophile, 0.4 per cent.; basophile, 0.4 per cent. Few microcytes; many macrocytes; few poikilocytes.

Treatment and Course.—Orange juice was begun as soon as the baby was admitted. It took one ounce of a 25 per cent. mixture very well, apparently liking it, before each feeding. It also took the following milk mixture: Cream, 8 fluid ounces; milk, 1 $\frac{1}{2}$ fluid ounces; lime water, 1 fluid ounce; water, 9 $\frac{1}{2}$ fluid ounces; milk sugar, 6 $\frac{1}{4}$ drams. Heated at 99.5 C. for twenty minutes; then cooled; 5 ounces every three hours.

October 25: The baby is distinctly better. It looks more intelligent and does not cry as much as before. The swelling is entirely gone from the left eye. The blue spot on the right lid is more distinct. The gums are less swollen and less blue. The wrists are smaller; ankles about as before. The milk was increased to 2 ounces. Mutton broth cooked with potato and carrots was given.

October 26: The appearance is still better. Moves hands and does not complain as much when touched. Ankles very little smaller than before. Food changed to: Cream, 8; milk, 4; otherwise as before.

October 28: Looks much better. Moves left hand freely, also feet. Wrists and ankles are smaller, but the left internal malleolus is still surrounded by considerable swelling. Milk changed to 5 ounces; other ingredients as before.

October 30: General appearance better. Moves all extremities actively. Gums less swollen; lateral upper incisors show through. Eyes, ankles and thorax about the same. While in the hospital the bowels were slightly constipated. The stools were of natural color and well digested. There was a positive test for occult blood (Dr. Cowie) on October 25, 26 and 27; negative afterward. The urine was not obtained, but the napkins showed no traces of blood. The temperature ranged between 101 C. on admission, and 98.6 C., usually between 99 C. and 100 C. Weight 15 $\frac{1}{2}$ pounds.

Patient was discharged, with full directions for raw milk, milked with as much cleanliness as possible; aerated at once, filtered through cotton and kept on ice.

November 1: Returned for examination. Looks stronger. Moves more than ever before. Does not cry when handled. Discoloration on right eyelid clearing up. Eyes are further back than before. Upper gum is still spongy and red, but improving. Ankles and wrists about as before.

November 7: Patient sat up yesterday alone. Better in every way.

November 10: Examined in clinic. Moves extremities freely and sat up alone to-day. Color good. Discoloration of right eyelid has disappeared. Left eye normal. The eyes are not prominent. The thorax is deeper. The gums are still slightly

swollen and red. Does not take orange juice as well as at first. Is taking 6 fluid ounces of milk in 20 ounces of the mixture. Weighs 16½ pounds. Food changed to cream 8 and milk 7 fluid ounces; other ingredients as before. Broths and gruels were also prescribed.

November 23: For two or three days has not taken food as well as before. Vomited once on the 19th, probably as the result of cathartic medicine. Looks stronger. Moves actively. Wrists are thick; ankles smaller than before. No discoloration. No tenderness. Gums natural; four upper incisors out; three below and fourth almost through. Costal cartilages still show groove, but body is more rounded than before. Advised five meals a day.

REMARKS.

Diagnosis.—Among the points of interest in the case diagnosis takes the first place. Like many similar cases, the true nature of this one was long overlooked. During this time the patient was in care of two physicians, in turn, of considerable experience and more than average ability. Neither had ever seen scurvy at any age, and they had only the usual knowledge of the less common diseases of childhood. But lack of actual observation of a similar case can not be a valid excuse in practical diagnosis. All progress in medicine would stop if it were. The physician first consulted discussed the case with a surgeon, who suggested neuritis without seeing the patient. The other suspected anterior poliomyelitis, but, not feeling certain, referred the patient to me. The chief cause of failure was the lack of a thorough examination, the cause of most faulty diagnoses. This was assisted by a failure to compare the findings with descriptions in text-books on diagnosis and practice.

A literary knowledge of the subject does not alone prevent error. Heubner tells us that in half the undiagnosed cases of infantile scurvy he saw in consultation the physicians in charge had a literary knowledge of the disease. Until I stripped the baby and examined its extremities, its mother and a very experienced and critical grandmother were not aware of the striking alteration in the shape of the thorax and the swellings and discolorations of the extremities. Had an examination been made, the first diagnosis of neuritis must have been given up on account of the absence of objective evidences of that disease and the presence of other features that could not be explained by neuritis alone. Then it would have been necessary to consider the possibilities that have caused error in other cases. Osteomyelitis, so often diagnosed, even to the point of causing operation, could hardly have been suspected in this case. In some, where the swelling has been greater and less symmetrical, only a complete examination and thoughtful differential diagnosis could prevent error. Against rheumatism, the relative constancy of the local lesions, the fact that they were not in the joints, the absence of superficial redness and of distinct fever would have been useful. On the other hand, the sweating of the head, if not considered in all its bearings, and the slight elevation of temperature, might easily confuse the diagnosis in this respect. Against sarcoma, the multiplicity and symmetry of the lesions, and the failure rapidly to increase should suffice. Against syphilis with pseudo-paralysis the condition of the parents, the age of the patient, the condition of the skin and mucous membranes, the absence of joint involvement and the great degree of tenderness, would be decisive. Anterior poliomyelitis was an insufficient diagnosis in view of the physical conditions. There was also no history of the onset of that disease, and the description of the course of the pseudo-paralysis was clear and agreed more with that of scurvy

than of infantile paralysis. Rickets would have been a better diagnosis, would have been partially correct, and, if made in time, should have led to a change in diet that would, in all probability, have prevented the full development of infantile scurvy. The case illustrates the importance in all cases of artificially fed infants of looking for rickets and the scurvy so often associated with it.

Critical examination of the mouth should have made it clear that the disease in the gums was not due to the incision, as was supposed, for it was also present in the lower gum that had not been incised. Further study of such anomalies must have led to a correct diagnosis of scurvy.

The proptosis and subcutaneous hemorrhage in the eyelids came on late. Diagnosis made in time should have prevented them. Although the orbital changes are relatively rare, the fact that E. Schlesinger has recently reported a case in which orbital hematoma was the first symptom in a case of infantile scurvy shows the importance of a general knowledge of the process. The article of Schlesinger¹ and that of Irving Snow² give a complete résumé of our knowledge of this interesting symptom. In regard to its incidence, the collective investigation of the American Pediatric Society gave only 22 cases out of 379, positively absent in 110. Heubner saw 4 cases out of 65. Barlow, who first described it, has also seen a case in which orbital hematoma was the only symptom. Snow shows the anatomic feature of the condition, a subperiosteal hemorrhage like the process on other bones, and Cohn's report of a case in which the hemorrhage came on suddenly, during a severe crying spell, suggests a traumatic element that is often present in the hemorrhages on the long bones. The successive affection of the two orbits, as in my case, is very frequent.

Etiology and Results of Treatment.—The study of the causal factors in the case reveals nothing new. There is the history, as in most cases, of a monotonous food, composed of a milk mixture that would not seem well adapted to the patient, and yet it seemed to agree fairly well for a longer time than one would have anticipated. The long-continued use of Mellin's food is of interest, but does not give any positive ground for conclusions. It is interesting to observe that severe gastrointestinal disturbance did not occur. The idea that a severe diarrhea or enteritis had been present was entertained by one of the physicians, but was not borne out by the clear and positive descriptions of the relatives nor by the examination of the stools. The bloody stools were certainly the result of the scurvy, without further implication of the intestines.

As in so many cases, we can not say whether the cause here was some qualitative or quantitative alteration of the food elements or some toxic substance, or all combined, in a patient long inappropriately fed.

Some other details of the feeding are interesting. The patient lived on a dairy farm, the herd being made up of Jerseys with a few Holsteins. As I learned later, the milk had undergone official tests and was good in every respect. When I began the treatment I was afraid to use raw milk, fearing the supply on the one hand, the gastrointestinal condition of the patient on the other. I therefore gave orders to Pasteurize the milk at 160 F., but by an error the method then in use in the ward was followed, and the milk was really heated longer than

1. "Zur Symptomatologie der Barlow'schen Krankheit," *Muench. med. Wochtt.*, Oct. 24, 1905, p. 2073.

2. "Eye Symptoms of Infantile Scurvy," *Archives of Pediatrics*, August, 1905, p. 576.

before and at a higher temperature. The only differences, then, were in the different source of the milk, an element that can not be analyzed, the withdrawal of the Mellin's food and the use of orange juice. Before anything else was given a distinct improvement was obvious, and recovery occurred while on sterilized milk, orange juice, and a small amount of potato and carrot broth. So rapid an improvement, of course, is not at all uncommon, and the change as soon as the orange juice is given, along with the curious avidity with which my patient took it, like so many others, seems to prove that it contains something much needed by the scorbutic body.

Skiagraphy.—My efforts to get an x-ray picture of the affected bones were not successful. It was impossible to make an exposure the first day, when the legs were spontaneously kept still. By the next day there was some motion when the noise and light of the apparatus were perceived, so that it was not possible to make a slow exposure with a soft tube that would show fine differentiation of the soft parts. The pictures, of which my colleague, Mr. V. H. Willey, made a number, show the swellings, as well as the appearances of the bones, but nothing more.

X-ray pictures of infantile scurvy have been published by Ausset, Rotch³ and Lenndorff.⁴ Those of Ausset and Rotch are not very good. Lenndorff's is given in a rather diagrammatic reproduction. The author says there were shadows along the femur and the tibia and fibula, and a clearing up of the bone shadow in all the bones. He explains the findings by assuming that the periosteum had had time to exert its osteogenetic function, a belief that is borne out by postmortem examinations. Lenndorff, however, very properly warns against too much dependence on the skiagraphic diagnosis of infantile scurvy, though it may be of assistance in clearing up some of the anatomic changes.

AN ANTIGONOCOCCUS SERUM EFFECTIVE IN THE TREATMENT OF GONORRHEAL RHEUMATISM.*

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The following communication is intended merely as a preliminary announcement of the preparation of an antigonococcus serum of therapeutic value. It will be followed shortly by an article in which the character and properties of this serum are dealt with in greater detail.

There are several reasons why an antigonococcus serum has not been used heretofore in the treatment of gonorrheal rheumatism. They may be tabulated as follows: First, there is not the slightest indication of an immunity in man to gonorrheal infection acquired by a previous attack; nor in chronic gonorrhea is the individual any the less susceptible to an acute superinfection. Second, there is no well-established case of an infection in animals with gonococcus. Wertheim, by injecting agar and gonococci together into the peritoneal cavity of rabbits, was able to produce a local peritonitis, but not a real infection. Heller's statement that he has produced an ophthalmic gonorrhea in young dogs by

injecting gonococci into the anterior chamber of the eye has not been confirmed. Third, it is generally supposed that gonococci can not be induced to grow luxuriantly under artificial conditions. Finally, most authorities agree with Wassermann and Nikolaysen in concluding that animals can not be immunized to the toxin of the gonococcus, as it is embraced within the cells and only diffuses into the surrounding tissues on its death and disintegration. In other words, according to their view, it is an endotoxin, a bacterial protein.

Although there was apparently slight chance of success, at the suggestion of Dr. Rogers I prepared a serum for a patient with gonorrheal rheumatism of some 15 years' standing, who had been treated in every other way without result. We were agreeably surprised to find the serum effective, not only in that case, but also in a high percentage of others in which it has been tried. These cases are fully described in the preceding clinical report by Dr. Rogers.

The culture which was originally employed in producing the serum was isolated from an acute case of gonorrhea in a male, who had not been treated. Gonococci were very numerous in the exudate, principally within the leucocytes. Smears were made from the discharge on petri dishes of ascitic agar. After an incubation of 24 hours, an almost pure culture of very small, transparent colonies appeared. These colonies were composed of small diplococci in every respect identical in morphology, staining reactions and cultural features with the characteristics of gonococci. The micro-organisms were negative to Gram's stain, would not grow on ordinary peptone agar or broth (repeated tests have been made extending over several months), and died out even on ascitic media in a short time. On ascitic agar (equal parts of ascitic fluid and 2 per cent. glycerin agar) the colonies are small and tend to remain separate. At first transparent and with regular edge, after four or five days the center of the colony becomes granular and the edge spreads out thinly and irregularly. All the diplococci have died in from six to eight days. In ascitic broth the length of life is much greater, from thirty to forty days.

For purposes of inoculation, a very satisfactory medium has been found to be a mixture of rich ascitic fluid and slightly acid beef infusion peptone broth in equal parts. Tubes of about 12 c.c. of the mixture are heated to 60 C. for several hours and tested for sterility. To obtain the best results, the temperature of the incubator should be between 36 and 37 C. Gonococci are killed at a relatively low temperature (at from 40 to 41 C., according to Scholtz). After from 18 to 24 hours' incubation, a slight granular growth appears near the surface and along the side of the tube. This slowly increases in amount until, after six days, the medium is well clouded on shaking. Other strains of gonococci which have been used form, after four days, a rather thick and flaky pellicle. In all the strains the growth after a time sinks to the bottom of the culture tube.

Various modifications of the proportion of the ingredients in ascitic broth have been tried, such as the presence and absence of peptone, increase in the amount of albuminous matter and ascitic fluid, but no combination has proved, on the whole, more satisfactory than the one which has been described.

It is interesting to note that the strain of gonococcus which was first used, after being cultivated for over a year on ascitic media, grows fully as well and produces as effective a serum as when first isolated. This is in harmony with the well-known fact that gonococci, iso-

3. Medical News, 1903, vol. II.

4. Archiv. f. Kinderheilkunde, vol. xxxviii, 1904, p. 160.

* Read before the New York Academy of Medicine, 1905.

lated from chronic cases, have suffered no loss in virulence or growth energy. Two other strains of this organism, which were kindly given to me by Dr. Elser, have been found to give rise to fully as efficient a serum as the original culture. These were isolated from cases of vaginitis.

Large rabbits have been used exclusively in producing the serum. They were inoculated in early stages of the experiments at intervals of three or four days with about 10 c.c. of the entire culture. It has been found, however, that the results are rather more satisfactory if an interval of five or six days elapses between the inoculations. The animals thrive much better if so treated and bleed more freely. Experiments have been carried on with the idea of determining the most suitable age for the cultures used in inoculations. It has been found that both very young cultures, from two to five days old, and old cultures, from twenty to thirty days, produce a serum that is fairly satisfactory. The best results, however, are obtained with cultures from six to fifteen days old. During this period the cell growth reaches its height and the culture contains the greatest amount of toxin. Experiments on guinea-pigs also point to this conclusion. The inoculations are always made intraperitoneally.

According to Wassermann, no immunity can be produced in mice or rabbits to gonotoxin, although these animals may exhibit a slight resistance and adaptation. It has been my experience that rabbits and guinea-pigs show individual differences in their powers of resistance to repeated doses of gonotoxin, and that possibly in no case is there a true prolonged active immunity. The first inoculation always causes in rabbits a great loss of weight, sometimes amounting to one-fourth of the total weight. If the amount of toxin in the first inoculation is not too great and the animal is allowed to recover completely from its effect, the second and four or five subsequent inoculations give rise to only a slight loss of weight and discomfort. After a variable time, however, the majority of the animals reach a condition of hypersensitivity to the toxin and succumb finally to a dose that would never prove fatal to a normal animal. This seems to indicate, as Wassermann and others have pointed out, that the toxin present in the culture is, for the most part, if not entirely, derived from the dead bodies of the cells. When rabbits reach this hypersensitive stage, they refuse to eat and finally die in a greatly emaciated condition.

The rabbits are bled for the first time after they have received six inoculations, or about 60 c.c. of the culture, extending over a period of about a month. The most economical method is to bleed from the ear (which has been carefully shaved, washed with a germicide and finally with sterile normal salt solution) until the animals show signs of becoming hypersensitive, and then from the carotid. Large animals should yield a total of from 70 to 90 c.c. of serum. It is interesting and important to note that serum derived from one of the later bleedings is more potent than that obtained at first, when the animal has received only a few inoculations. Some rabbits, too, produce a better serum than others. It has also been found that the serum loses little, if any, of its power after remaining in the ice box for from one to two months. For distribution, small sealed glass tubes holding about 2 c.c. of serum are used. No preservative is added to the serum. With ordinary precautions it may easily be obtained sterile.

It is obviously a matter of interest to determine to

what factors in the serum its curative properties are due. In inoculating rabbits, whole cultures, both the cells and the filtrate, were used with the hope that a serum might be produced possessing both antitoxic and bactericidal factors. Although the majority of those who have investigated the subject believe, with Wassermann, that the toxin of the gonococcus is not of such a character as to bring about the production of an antitoxin when injected into animals, still one observer, de Christmas, claims to have obtained from old cultures an extracellular toxin, which, when injected into the brain of a guinea-pig, kills in very small doses. He believes that this toxin is produced by a vital process of the cell and is analogous with the extracellular toxins of diphtheria and tetanus. This toxin, however, is produced in considerable amount only when a special culture medium is used, consisting of one part strongly albuminous peptone-free broth and three parts aseptic fluid. By inoculating rabbits and goats with the filtrate of old cultures he apparently obtained a serum with sufficient antitoxic power to neutralize twenty times its volume of toxin. Although I have not found that there is any very decided increase in the amount of toxin produced by the use of the formula of de Christmas, my experiments, so far as they have been conducted, tend to confirm his assertion that it is possible to obtain an antitoxin for the toxin of gonococcus. This seems probable, on the one hand, from the protective power of the serum for guinea-pigs. Two pigs were given 1 c.c. of serum and one pig 2 c.c. Eighteen hours later these three pigs, and also an additional control pig, which had received no serum, were inoculated intraperitoneally with 3 c.c. of toxin. In one hour the temperature of the control pig had dropped over 10 degrees, and in three hours the animal was dead. The three pigs which had been treated with serum suffered only a slight drop in temperature and showed practically no signs of an intoxication. The details of these experiments will be given in a subsequent paper.

The clinical evidence also points to the same conclusion. In some cases there is a decrease of pain in the joints within twenty-four hours after the first administration of the serum. The most reasonable explanation of this result seems to be that some of the gonotoxin, which causes the inflammation and the attendant pain, has been neutralized.

Without doubt, however, the most important permanent relief which the serum affords in most cases is due to a bactericidal activity. In chronic gonorrhea there are comparatively few gonococci, often deep in the tissues, but, as an active immunity never arises in man to gonococcus, the system frequently finds difficulty in disposing of them. It seems possible that the serum supplies enough immune bodies to accomplish this, although too few to bring about the destruction of the great number of gonococci which are present in the urethra in acute gonorrhea. This theory has not been substantiated as yet by complete experimental evidence. The serum, however, has been found to contain both agglutinins and precipitins for the gonococcus.

Honorable Dealings.—It is a question whether the testimony given in suits for damages, against railroads and other corporations, is not at times biased by the knowledge that the physician will get no fee for his attendance, if the patient fails to "recover" for his injury. I was once asked to give a note saying that I was too busy to come to court to testify, because it was known that my opinion would be unfavorable to the cause of the plaintiff. Does anyone doubt that acceding to the request would have rendered the payment of my bill more certain?—J. B. Roberts.

THE TREATMENT OF GONORRHEAL RHEUMATISM BY AN ANTIGONOCOCCUS SERUM.*

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Cases of gonorrheal arthritis can be grouped roughly in three classes—those which are mild and recover quickly; those which are severe and run a prolonged course; and those few which continue indefinitely. From what is known of other infectious diseases, it is very evident that the prolonged cases of this infection must lack the antibodies which naturally exist or are produced in the vast majority of individuals. If these antibodies could be provided artificially recovery ought at least to be accelerated, and with the specific object of thus benefiting the patient whose history is given in Case 8, I proposed the scheme to Dr. John Torrey, the bacteriologist in the experimental laboratory of Cornell University Medical College. He follows this clinical report with one describing the details in the manufacture of an antigonococcus serum.

The gonococcus is somewhat peculiar in its pathogenic limitation to man. Inoculations of pure cultures of the micro-organism into the various organs and tissues of other animals produce little or no reaction, and even in man repeated subcutaneous injections of considerable amounts of such a culture have caused only slight or transient local inflammation. Furthermore, there is still doubt as to how the human urethra recovers from the infection. It is not because the gonococcus has its vitality lowered by residence in this organ, because in chronic cases the organism retains its virulence unimpaired and can excite as acute an inflammation as any new culture. Nor does a true general immunity arise, as infection, reinfection and superinfection in the same individual are common. Recovery, therefore, seems only explainable on the ground that the mucous membrane gradually becomes an unsuitable culture medium. The susceptibility of a mucous membrane also varies with its location and the age of the patient; the conjunctiva, for example, is very easily infected during infancy and much less so during adult life. The same is true of the vaginal mucosa, as epidemics in little girls are often observed, while women who have borne children are comparatively insusceptible. The reverse is true of the endometrium, which is much more easily infected after puberty than before. Contrary to the general opinion, the mucous membrane of the bladder and pelvis of the kidney is quite resistant, and the nasopharyngeal tract is almost never attacked. The penetration of the gonococci into the deeper layer of the epithelium, its proliferation and desquamation, the exudation of the serum and emigration of leucocytes, in which the gonococci are found from the early stages of the process, are familiar facts. It is not so well known, however, that there is probably no true phagocytosis in the sense that the leucocytes destroy the gonococci by ingestion. They may even help to disseminate the micro-organisms by carrying them into the general circulation, although this explanation of systemic invasion is not necessary, as they have been found in abundance, free in the submucous capillaries and lymphatics and inguinal lymph nodes. The injurious effect of the infection is probably produced not by a true toxin, but by a bacterial proteid which is liberated by the death of the micro-organism.

The local complications produced by direct extension of the disease into tracts which are in continuity with the original focus do not come within the scope of this article, except as they illustrate the possibilities of suppurative inflammation. For buboes and periurethral abscesses have been repeatedly found to yield only a pure culture of the gonococcus. Of course, mixed infections are common, but the probability, or even the possibility of a pure gonorrheal infection in any of the complications of this disease should have an important bearing on the treatment here offered.

The term gonorrheal rheumatism seems particularly appropriate, as by analogy it calls attention to a systemic infection which most commonly manifests itself by serious disease of one or more joints, and less often involves other organs. It invites comparison with the ordinary acute polyarticular rheumatism, in which the microbic cause of the almost exactly similar lesions is as yet not proved. After entering the general circulation the gonococcus shows a marked affinity for the serous membranes, and, in addition to the common disorders of joints and tendon sheaths which it produces, there are enough cases on record of endocarditis, pericarditis, pleurisy and meningitis, due only to the gonococcus, to make one attribute to this organism any such complication in a patient giving a more or less recent history of gonorrhea. Cases of iritis, myelitis, myositis, neuritis and skin eruptions, and also subcutaneous and bone inflammations and abscesses and true gonorrheal septicemia, i. e., cases in which the gonococcus is demonstrable in the blood, are reported and are mentioned as more than occasional possibilities. They all emphasize the gravity of the systemic infection which has occurred in every case of gonorrheal arthritis. One or more of the large joints, seldom those of the fingers or toes, may be attacked at almost any period after the incidence of the gonorrhea, the usual time being between the first and eighth week. It is generally considered necessary for the infection to have extended to the deep urethra before a systemic invasion can occur, but this belief is untenable, as there is on record a case of gonorrheal arthritis in an infant which followed a gonorrheal ophthalmia. It is evidently a complication which can occur from such an infection in any locality and in any stage.

The first symptoms of joint involvement are, of course, pain and disability. Swelling follows within a few hours, at first from serous effusion into the synovial membrane, and later from a diffuse edema of all periarthritic structures. This edema is much more prominent than the intra-articular effusion. There is usually not much temperature or local redness, and it is more common for the affection to be monoarticular than polyarticular. It is quite characteristic for the chart to show a fever of from 101 to 102 F. for the first two or three days of the joint infection, and this probably marks the period of systemic invasion. After this the temperature curve, unless suppuration occurs, stays close to the normal point. The disease runs a rather slow course for several months and tends to gradual recovery, but it is often more violent and accompanied by high fever and suppuration, which may destroy one or more joints and endanger life from exhaustion or from other metastases. Rarely there may follow a very chronic condition, as in two of the cases cited below, which terminates in a condition indistinguishable without the history, from an arthritis deformans, with destruction and ankylosis of nearly all the joints in the body. Experience seems to prove that practically every joint lesion which arises in the course of a gonorrhea, even when there are no signs

*Read before the N. Y. Academy of Medicine, 1905.

of the original disease except a few gonococci in the "shreds" obtained from the urethra, can be pretty safely attributed to this organism. Ordinary polyarticular rheumatism and other arthritic troubles can be considered only after the gonorrheal arthritis is excluded. Differentiation from tuberculosis is the most difficult, but the x-ray should show the usual osseous character of this process, which almost never occurs in gonorrhea, and if this fails no harm can come from a trial of the antigonococcus serum.

This question of diagnosis needs considerable emphasis, because I am convinced a great many cases, especially those in women, escape detection. In the early stages the resemblance to polyarticular rheumatism is very close, as at first one joint, then another, may be attacked, and the attack in one or more joints may be somewhat evanescent and subside rather quickly, but there is almost always a joint which will continue diseased, and this in the later stages will lead to confusion with tuberculosis. There is the same diffuse thickening around the joint, often with the apparent or real production of new bone. In addition, to complete the similarity, there is atrophy of the muscles above and below the joint and the general appearance and attitude characteristic of tuberculous disease. Or in the later stages, if several joints continue affected, it is very difficult to rule out an arthritis deformans. In all these cases the essential point in making the correct diagnosis is the history. If there has been a urethritis or a vaginitis a few days or weeks before the onset of joint symptoms a gonorrheal infection is almost certainly at the bottom of the trouble. The x-ray, as stated above, may be of great assistance, and to this can be added a trial of the antigonococcus serum, which, if the diagnosis is correct, will relieve the pain within a few days. Very little reliance, however, can be placed on finding the suspected organism in the fluid aspirated from such a joint.

The gonococcus lodges and grows in the synovial membrane alone and apparently only for a short time, as it can not be found in the exudate after the first week or ten days, and it has not been found in the periartritic edema. It may, of course, escape from the joint (or tendon sheath) as the result of suppuration, and has thus been found in the neighboring abscesses, but by its presence there is usually excited only a serous or serofibrinous exudation with thickening of the synovial membrane.

The onset is acute and is followed by a rather slow course, with more or less damage to the joint from fibrillation of the cartilages, intra-articular adhesions and contraction of the ligaments, but ultimate recovery under careful treatment is the rule. Less commonly the exudate is purulent and the process is accompanied by the destruction inevitable in a suppurative inflammation in a joint, and bony ankylosis is about the best result to be expected. Even in these cases the reports seem to prove that the majority are due entirely to the gonococcus and that a mixed infection is unusual. When an additional infection does occur it has generally been with the *Staphylococcus albus* and less often with the streptococcus, and this possibility must not be forgotten in judging the results obtained by an antigonococcus serum. Fortunately for the diagnostician, however, nearly all the joint and serous membrane affections arising in the course of a gonorrhea can be pretty safely ascribed to this organism.

The ordinary antirheumatic treatment is notoriously unsatisfactory. Freely opening and washing out the

joints with more or less strong antiseptics has given somewhat better results, but unless suppuration is present it only slightly accelerates recovery and imposes the additional risk of a mixed or pyogenic infection. If, however, there is any evidence of the existence of pus, free incision, irrigation and drainage with every antiseptic precaution is, of course, always indicated. In every suspicious case, however, from twenty to sixty minims of the antigonococcus serum should be administered every day, or every other day, beginning as early as possible after the arthritic complications appear and continuing until the pain and disability subside. I have usually given it in the loose tissue overlying the fascia in the back of the upper arm. There is generally a noticeable improvement at the end of twenty-four or thirty-six hours, and within a week or ten days there is an almost complete subsidence of the disorder if it is acute. After the suspension of the medication there seems to be a constant danger of recurrence or recrudescence of the arthritis, especially if the urethritis persists, and the inoculations may have to be repeated. The whole course of the disease, however, is vastly shortened and ameliorated, and, beyond an occasional erythema, which may be observed after the use of any serum, absolutely no ill effects have been produced.

As to the prognosis, the earlier the disease is recognized and the earlier the serum is administered the better, of course, is the result. After the inflammatory process has continued for weeks or months and new tissue and adhesions have formed, or if destructive lesions have developed, the restoration to a normal condition may be very slow or may never occur; but even in these cases the serum will produce a more or less rapid subsidence at least of the inflammatory symptoms and the pain. The stiffness and the faulty motility must be overcome, as in similar conditions, by electricity, massage, passive motion and hydrotherapy.

This method of treatment has the same limitations and disappointments as all serum therapy and is not advanced as an infallible remedy. It must be borne in mind that the effectiveness of the serum depends on the animal and the culture which is used, the length of time and the manner that this animal is inoculated and the number of "bleedings" to which it is subjected. The serum obtained from the first bleeding does not seem to be as good as that obtained in the second or third bleeding. Then, even with the same serum, some patients react far better than others. An old chronic case requires more doses than an acute one, and there is even a considerable variation in the acute cases. In all except one of my cases, and that a chronic one (Case 7), the patients have shown some reaction in the way of improvement, even if not of speedy cure.

It must be remembered, however, that the serum has little or no effect on the urethritis, and as long as any traces of this persist there is a theoretical and real danger of recrudescence of the arthritic complications. Case 3 shows this very well. The gonorrhea persisted and a few days after apparent cure of the "rheumatism" the latter reappeared, but almost immediately subsided under energetic local treatment of the urethritis and a repetition of the serum injections.

The recrudescence of the arthritis after its apparent cure by this serum therapy, the rarity of the affection compared to the almost universal susceptibility of the urethra, the proved systemic resistance of man to experimental inoculation and the clinical observation that the same individual is prone to repeated attacks of arthritis with every fresh gonorrhea all suggest some difference

in the local and systemic resistance to the infection. The unfortunates who suffer from gonorrheal rheumatism must have a constitutional or congenital deficiency of antibodies, and as soon as these are supplied artificially the disease subsides. Furthermore, the serum seems to have no very marked effect on an existing urethritis or vaginitis. There was apparently some improvement in the course of the inflammation in the mucosa in my cases, but not enough to warrant the abandonment of the present reasonably satisfactory methods of local treatment or even to suggest that the urethritis is sensibly affected.

Objection may be raised to the lack of scientific accuracy in this report, as before administering the serum the gonococcus was not always identified except in the female cases (in the pus obtained from the cervix). In men the clinical evidence of the disease was generally deemed sufficient. This must be taken as merely a preliminary statement to call attention to the value of the treatment in cases of systemic infection.

The histories of the cases here submitted are examples of the common acute, chronic and prolonged forms of this joint disease, and although they are by no means all that have been tested, I have not omitted the failures. In a "prolonged" case, or one which continues for years and goes from bad to worse, a failure should not be judged harshly when the possibility of error in diagnosis is considered. Many good observers doubt the existence of such a condition and its explanation involves some difficulties, but in following the histories of these patients the more or less steady continuation of the same mildly inflammatory process seems to me conclusive evidence of the nature of the original infection, even if its indefinite prolongation is due to some superimposed alteration in nutrition or metabolism. That one of these peculiar patients was evidently benefited was certainly gratifying and encouraging.

CASE 1.—A. McC., aged 35, had the first gonorrhea seven years ago. The second began about two weeks previously, or on April 8, 1905. On April 22 he first noticed pain in the left knee, which increased during the next two days so that he was unable to move the leg.

Examination.—I first saw him on April 24. He then had a profuse purulent urethral discharge with frequent micturition. The left knee was swollen, held in semiflexion and exquisitely tender to touch and motion. There was very little effusion into the joint, most of the swelling being periarticular, and very little cutaneous redness.

Treatment.—Antigonococcus serum XXX was given hypodermically in the subcutaneous tissue in the back of the left arm, and a urethral injection of a silver solution was prescribed.

Course of the Disease.—On April 26, or two days later, this patient was found moving about his room with no pain or limitation of motion in the leg and was thought to be cured, but on April 30 he called at my office, complaining of a recurrence of the pain in the leg. There was some tenderness and a little thickening above the patella and another hypodermic of thirty minims of the serum was administered. The urethritis showed some improvement at this time. On the following day the pain and stiffness in the knee had disappeared entirely and did not again recur. The urethritis, under the usual treatment, subsided at the end of about two weeks more.

CASE 2.—H. L., aged 34, was admitted to Gouverneur Hospital November 26, with a temperature of 101 F. and a history of gonorrhea which had first appeared three weeks ago. For the past four days the right knee had been painful and swollen.

Examination.—The joint was held in the semiflexed position; there were slight redness and signs of considerable serous effusion. The synovial membrane above the patella seemed thickened and in this locality was more tender than elsewhere, although the region all about the joint was painful and sensi-

tive to pressure. The gonococcus was found in the urethral discharge (which had nearly disappeared).

Treatment.—On November 26, 27 and 28 forty minims of antigonococcus serum was injected into the subcutaneous tissue at the back of the upper arm—considerable local reaction followed, but no suppuration.

Result.—On November 27, or the day following the first injection, the fluid in the joints had diminished very perceptibly, and on November 29 no evidence of effusion could be detected. The improvement was marked and rapid, and on December 2 this patient went home without any sign of joint disorder.

CASE 3.—S. C., aged 22, showed the first symptoms of a gonorrheal urethritis on Nov. 10, 1905, and on November 13, or three days later, the left knee became swollen and painful and on the following day the left shoulder was involved. He was brought to Gouverneur Hospital on November 17 in the ambulance, as he was unable to move the left leg or to bear any weight on it.

Examination.—There was a profuse purulent urethral discharge; the left knee was held in a semiflexed position and was exquisitely sensitive to pressure, especially on the inner side in the line of the joint. There was evidence of some serous effusion, but no redness and no edema. The left shoulder was painful and tender to pressure and held in an immobile position, but there was no swelling or other external evidence of disease.

Treatment.—On November 17, 19, 21, 24, 26 and 27 the man received from thirty to forty minims at a dose of the antigonococcus serum hypodermically in the subcutaneous tissue, first in one arm and then in the other.

Course of Disease.—There was an almost immediate disappearance of the trouble in the shoulder, but that in the knee subsided more slowly and the maximum point of tenderness shifted from the suprapatellar region to the tendon sheaths around the inner tuberosity of the tibia. On November 28 this had all disappeared and the patient began to walk, and on the following day went home apparently cured. The urethritis, for purposes of observation, had received no treatment and had shown only the improvement which might have been expected from the rest in bed. On December 5, after considerable exertion, the pain and swelling in the knee recurred, and he returned to the hospital on December 8, barely able to walk. The left knee joint was partially flexed, tender and swollen, and was distended with (serous) fluid. An injection of a silver solution was prescribed to be used after each urination, and forty minims of the serum were administered this day and the next, with striking benefit. On December 12 he appeared at the hospital for examination without any effusion in the joint and with no pain or tenderness and with no urethritis. He was dismissed cured, with directions to continue the urethral injections twice daily for another week.

CASE 4.—J. F., aged 29, had a gonorrheal urethritis in March, 1905, and the purulent discharge continued till June, when the left wrist became swollen and painful and he entered St. Vincent's Hospital.

Clinical History.—The condition was not at first recognized and all the antirheumatic remedies were tried without effect. On August 19 there had been little or no improvement and the left wrist measured two and one-half inches more in circumference than the right. There was little or no redness and very little edema, the wrist was partially flexed and the fingers extended; the swelling appeared to consist of new tissue and extended from the knuckles to just above the wrist. There was a noticeable atrophy of the muscles of the forearm and motion was impossible and the tenderness great. The whole picture was so like tuberculous disease that even with the history and the few "shreds" and pus cells discoverable in the urine the diagnosis seemed very doubtful.

Treatment and Result.—Thirty minims of the antigonococcus serum were administered hypodermically on August 19, 25 and on September 1, 3, 5, 7 and 9, with very marked benefit, and on September 11 the patient was discharged practically cured. The swelling had decreased so that there was only a half inch difference in the circumference of the two wrists. On November 10 this patient was shown to the Interurban Clinical Society at its meeting in the Cornell University Medi-

cal College; the only abnormality was a slight limitation to full flexion and extension in this wrist.

CASE 5.—J. A., aged 34, entered the French Hospital Sept. 18, 1905, with a slight subsiding urethritis and a history of pain, swelling and disability in the right wrist existing for two days.

Clinical History.—There was a temperature of 102 F., with headache, malaise and some diarrhea, all of which disappeared shortly afterward, but the wrist remained practically unchanged. On October 23 examination revealed a diffuse painful swelling of this wrist, which was held semiflexed with the fingers extended. Of the signs of urethritis there only remained a few shreds in the urine in which I was told that gonococci had been previously found.

Treatment and Result.—Beginning with October 23 and continuing until November 8 thirty minims of the antgonococcus serum were injected on alternate days into the subcutaneous tissue, generally in the back of the upper arm. Before the first injection the patient had required morphin every night to relieve the pain, but after the first injection this was no longer needed. The swelling and disability subsided very much more slowly, and on November 10, when this patient was shown at the Interurban Clinical Society at Cornell University Medical College, the result was not brilliant. The tenderness, pain and most of the enlargement had gone, but some of the new tissue and the many adhesions resulting from the inflammation remained, and the hand was still incapable of use. I did not, however, consider it a failure, as the signs of active disease had been dissipated. The results of the disease could only be cured by a time and mechanical treatment.

CASE 6.—A. B., female, aged 17, gave a suspicious history of a syphilitic infection some two years previously.

Clinical History.—On April 20, 1905, she was admitted to the medical wards of the St. Francis Hospital with a history of vaginitis, urethritis and endometritis existing for a couple of weeks. During the past three days the left wrist and left knee had become swollen and painful. She was confined to bed and received all the usual antirheumatic remedies, without the least improvement until the gonorrheal character of the disorder was finally demonstrated in the pus obtained from the cervix. On June 1 she was transferred to the surgical division. The left wrist and the knee had the general appearance of the old-fashioned "tumor albus." There was very little redness over either joint and each was in a semiflexed position and extremely tender. The slightest motion caused great pain. In the wrist there was an even swelling and firm thickening which extended from the knuckles nearly to the middle of the forearm. In the knee there was the same diffuse periarticular edema and also thickening of the suprapatella bursa. The joint contained some fluid. There was perceptible atrophy of the muscles in the forearm and the leg. Without the history and the finding of the gonococcus in the cervical pus each of the joints might have been pronounced to be the subject of tuberculous disease.

Treatment.—On June 2 the first injection of thirty minims of the antgonococcus serum was given into the subcutaneous tissue on the back of the left upper arm. The next day an erysipelas-like bluish developed in the neighborhood of the injection and extended from the shoulder nearly to the wrist. This began to subside within a couple of days, but caused me to postpone the next injection until June 6, when thirty minims were given in the other arm. On the following day the pain in the wrist was much less and the knee showed some improvement. The injections were repeated on June 8, 12 and 15.

Result.—The wrist had lost all pain after the third injection, but, as might have been expected, it was somewhat stiff and did not regain full mobility for about two weeks. The inflammatory symptoms disappeared from the knee on June 16, when the patient was able to get out of bed for the first time since admission in April 20. From this time on there was steady, though somewhat slow, improvement; walking was begun on June 20 and she went home the following week. The wrist had entirely recovered, but the knee still had some limitation of motion.

CASE 7.—C. W., aged 34, suffered from several attacks of gonorrheal urethritis between 1893 and 1899.

Clinical History.—In the latter year the metacarpophalan-

geal joint of the left index finger became swollen and painful and has continued in a more or less disordered condition ever since. The urethritis persisted as a "morning drop" and shreds in the urine were noticed for several years. In 1901 the right knee began to show pain and swelling and the disease gradually extended from one joint to another until in October, 1905, he entered Gouverneur Hospital. He was just able to move about a few steps at a time with the aid of crutches. Every large joint was tender and showed thickening of all the periarticular soft parts, but no redness; most of them revealed marked limitation of motion and the mobility which remained was painful; the muscles of the arms and legs were atrophied and the feet edematous; there was a subluxation of the right knee.

Treatment and Result.—For six weeks this man received samples of the antgonococcus serum from nearly every rabbit in the laboratory and it was impossible to detect any improvement. His case is described as a frank failure in the treatment and as an example of what I am firmly convinced is a chronic gonorrheal arthritis of the worst type like Case 8. This form of the disease is often doubted, but though rare, the history is so plain in the coincidence and coexistence of the urethritis and the arthritis that I can make no other diagnosis. In neither of these two chronic cases, however, could the gonococcus be demonstrated since they have come under observation.

CASE 8.—H. W., aged 39, had a first attack of gonorrhea in December 1887.

Clinical History.—This attack had almost disappeared, when in the first week of January he spent a whole day skating. The next morning the left knee was found to be swollen and painful and a few days later the right knee became involved. The probable origin of the difficulty was not suspected, and the urethritis shortly afterward disappeared, although he noted shreds in the urine for years. He never entirely recovered from the original arthritis, and though from time to time it improved, sooner or later another joint became inflamed. Every conceivable cure was attempted in this country and Europe, but after a year or two symptoms of arthritis deformans or a chronic rheumatism with intermittent acute exacerbations in one or another joint were so prominent that no one seemed to have even suspected a gonorrheal infection. In 1901 he suffered from a rather severe typhoid fever. Before that period he had been able to get about in the intervals of acute attacks, though with increasing difficulty, with a cane or on crutches. After the fever, however, the former "rheumatism" returned worse than ever and he became bedridden. Then an iritis developed, first in one eye and then the other, and in course of time resulted in nearly complete loss of sight. It is interesting to note that about this period he underwent a rather prolonged course of treatment with the x-rays applied over the inflamed joints. The result was no improvement of the arthritis and an extensive severe dermatitis. He first came under my observation in November, 1904, and his pitiful condition and history prompted the work which resulted in this serum. The patient was bed-ridden, blind, with ankylosis of all the spinal joints, hips flexed, knees bent at a right angle and dislocated backward and with elbows, wrists, fingers and ankles swollen and inflamed. The only joints not affected were the temporo-maxillary and those of the toes. He had to be fed by a nurse and suffered constant pain.

Treatment and Results.—The injections of serum, from twenty to thirty minims at a dose, were begun in January, 1905, and given about twice a week until February. The inflammatory symptoms and the pain began at once to subside, but after the medication was stopped the disease reappeared again in the wrists, and the hypodermies were resumed and continued twice a week during March. After about the 1st of April there were no further signs of active inflammation and he became able to feed himself and to smoke a pipe. Then massage was begun and at present (October, 1905,) he is able for the first time in several years to sit in a chair. The bony ankylosis of the spine, the partial ankylosis of the hips and the subluxation and deformity of the knee joints and the blindness, of course, remain, but the freedom from active inflammation and the pain is a remarkable gain. There was only one hypodermic abscess as the result of some twenty or thirty injections.

THE "PATENT MEDICINE" AND NOSTRUM EVILS.

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Encouraged by a small measure of success resulting from the efforts put forth in the recent past to stamp out the "patent medicine" and secret nostrum evils, it behooves the medical profession at large to forward the beneficent effects of an awakening that has come none too early, until victory for reputable therapeutics and pharmacy is no longer in doubt. Individual members of our profession and medical organizations can aid the progress of this praiseworthy work by a calm, temperate, dispassionate discussion of the question, more particularly by pointing out the reasons for the phenomenal success of these doubtful preparations and by urging measures of relief in the interests of the public and professional weal. It is the province of the trained and disinterested physician to give appropriate and efficient direction to the movement.

THE NATURE OF THE BUSINESS.

It is well known that adulterants are extensively introduced into foodstuffs and medicines. This vicious practice is not of recent birth, but has long been carried on by the orientals. Such adulterations and falsifications have been gradually brought under the control of state and municipal authorities, but an even greater American curse has been allowed to grow and develop, without official molestation by a patient and long-suffering people—the "patent medicine" and nostrum enterprises.

It is well to recollect at the outset that a patented medicine is not a secret medicine, since the inventor or manufacturer must disclose the composition and also the process of manufacture; this information is obtainable on application to the patent office of the government. It is, however, protected for a given time, 17 years, after which period it becomes public property. On the other hand, the trade-mark nostrum, under which head come innumerable secret or semi-secret proprietary preparations, is a perpetual monopoly, and to this class belong so-called "patent medicines," which, however, have not been patented. Since the nostrums would have narrow chances of success without the patronage of physicians, and since also so-called "patent medicines" are supported principally by the general public, it seems to me that a divisional study of the subject based on this significant distinction is necessary.

The lay press, more especially such representative publications as *Collier's Weekly*, *Ladies' Home Journal*, and others, have already broken soil in the field of "patent medicines," and their efforts promise the richest harvest; they are fully entitled to the warmest gratitude of the medical profession, as well as of all who are truly desirous of promoting the social good.

To attempt to point out to a medical audience the capabilities for harmful effects of the many known "patent medicines" which are used by a confiding public would be a work of supererogation. Physicians also know that exorbitant charges are made for these preparations—a fact not yet realized by the general public. Indeed, the extent of the prostitution of talent and services to the injury of their fellow-men, by the venal manufacturers of these preparations, strikes one with painful astonishment. Numerous individual instances could be

cited to corroborate this statement, but it is enough here to refer specifically to peruna, which has been exploited by its quack owner as a certain cure for catarrh—a term so defined as to embrace nearly all human ills. The composition of this much-advertised preparation, according to analyses carried out by *Collier's Weekly*, is as follows: One-half pint Cologne spirits, 190 proof, and 1½ pints of water, adding thereto a little cubes for flavor and a little burned sugar for color. But peruna has many conspicuous rivals, and it is an interesting fact that, taking the different "patent medicines" at random, it will be found that alcohol in some form is, as a rule, the principal constituent.

Mr. Edward Bok has done telling pioneer work in creating public sentiment against the patent-medicine curse, and has catalogued a long list of preparations by name, giving the percentages of alcohol which each contains.

A glance at this list will convince the most skeptical that the percentage of alcohol contained in the various "bitters" and "bracers" is, on the average, higher than in spirituous and malt liquors, or the products of the saloon. It is a matter of observation that in places (e. g., prohibition states) in which whisky can not be purchased the consumption of patent medicines reaches its maximum. It would appear, therefore, that they have been conceived, manufactured and used quite outside of the sphere of legitimate medicine.

The principal objection to these nostrums, however, appertains to the well-known methods which have been and are adopted to exploit them. With an assumed devotion to mankind, which is only equalled by the love of the Tudor monarchs for flowers and gardens, and an implied burning desire to relieve suffering humanity from its manifold ills, attractive representations are made to the public, through advertisements, which, however, can be readily shown to be largely fictitious.

Unfortunately, the people of the work-a-day world, who are afflicted with chronic ailments of various kinds and degrees, whatever their mental training, are unconsciously credulous in the matter of the extravagant claims made in the newspapers and magazines by the vendors of "patent medicines." Moreover, the modern type of quack is quite able to appeal with success to the most cultured classes of society, so well has he or his hired advertisement writer mastered the art of seduction.

Females complaining of backache, and young men and boys, who believe what they read in newspapers and magazines about the meaning of their meaningless symptoms, become ready victims of a vicious class of swindlers. It appears to me, however, that many doubtful or so-called borderland nostrums, which are advertised in both the medical and lay press as being of great value in incurable conditions and readily prescribed by practicing physicians, are not less objectionable than the "patent medicines." At all events, they are scarcely accessible to the spirit of science. Obviously the present propaganda against the evil under consideration must be extended beyond the "patent medicines" to many well-known "proprietary" articles.¹

Again, the testimonials of widely-known persons, many of whom have attained to eminence in their respective callings, have stimulated and encouraged the use of nostrums. Here is a shining example: Mrs. Leslie Carter says of peruna: "It cures all catarrhal affections like magic. No money could tempt me to be

without this remedy for even a day." The columns of our newspapers and other lay periodicals as advertising media have been the principal or essential element in bringing about the pecuniary success of "patent medicines." While we need not stop to inquire what has been the motive or moral principle governing the universal action of the lay press in respect to its advertising pages in the past, it has manifested an obvious ambition for a quick financial return, to say the least. There is cause for exultation, however, in the fact that a wave of righteous public indignation has appeared on the horizon and bids fair to sweep over and extirpate the free field so long pre-empted by the quacks of this country.

Mr. Samuel Hopkins Adams has made the profession and public alike his debtor by giving a "full explanation and exposure of patent-medicine methods and the harm done to the innocent public by this industry." He has pointed out a number of great practical truths which can scarcely be over-emphasized. In the first place, as is well known to physicians, the long-continued use of certain drugs (e. g., cocaine, opium, arterial stimulants) will most certainly enslave the devotees to their use, and thus are the ranks of the drug fiend constantly recruited. Mr. Adams clearly echoes medical opinion in pointing out that the alcohol-laden "bitters," "sarsaparillas," and "tonics," taken daily and in increasing doses, make not for health, but for disease. Such information as this writer has been giving directly to the public will prove effective in lessening the annual outlay of moneys by Americans for medicines having little or no value for the conditions in which they are employed.

Having considered "patent medicines," I shall attempt to point out the reasons for a parallel demand for proprietary remedies and nostrums. At the outset, the fact is to be emphasized that it would be unjust to condemn all proprietary preparations; they are not objectionable provided that their composition be revealed and they are judiciously and honestly exploited. On the other hand, proprietary remedies that are secret or semi-secret in character, and the immense majority of the "proprietarys" belong to this category, are clearly condemnable. Every intelligent and properly-minded physician must concede that it is wholly unscientific to prescribe remedies of whose composition he is ignorant, or a mixture for whose reliability he can not vouch, and no one can deny that the medical profession has been a powerful and unfailing adjunct of the manufacturers of this class of remedies; they have been allowing the manufacturers of secret proprietary articles to compound their preparations and even to point out the indications for their use. Again, as Dr. Frank Billings² says, "many so-called medical journals are subsidized by medical manufacturers, and one-half of the medical journals of the country would be out of existence if it were not for the nostrum advertisements."

One of the most unfortunate aspects of the situation is the widespread control exercised by the Proprietary Association of America over both the medical and lay press. Moreover, the advertisements of the "proprietarys," be it observed, exhibit in a striking degree the same structure and method as those of "patent medicines," and they, together with the visiting agents, are chiefly responsible for the extensive employment of nostrums by overcredulous practicing physicians. In this connection, the claims of certain writers that the flagrant iniquities of many pharmaceutical manufacturers are

the natural result of modern therapeutic nihilism must be largely admitted. As elsewhere stated, "Our colleges of medicine and pharmacy are scarcely alive to the moral responsibility involved in this gravely threatening evil. The teachings of these schools should be of such a character as to enable students to discriminate between genuine and spurious remedial agents."³

The principal neglect on the part of the medical schools affects the science and art of pharmacy, and on this question the editor of *American Medicine*, in a recent issue, pertinently remarks: "The revolt against these nauseating mixtures of the past generation of physicians was, in part at least, a cause for that remarkable stampede toward homeopathy which this country witnessed. All the work of discovering proper methods of administering drugs has thus been left to the pharmacist. The tendency toward therapeutic nihilism would certainly have become a great evil but for the pharmacist, to whom the medical profession certainly owes a great debt of gratitude."

Unquestionably, the time is ripe for the inauguration of a campaign of education among physicians and college faculties in the interests of legitimate, scientific therapeutics and pharmacy.

HOW TO COMBAT THE BUSINESS.

I shall next deal with various measures and methods for the cure of the nostrum evils. In the first place, a most timely organized effort has been instituted by the American Medical Association, with the object of exposing the evils of the preparations under discussion, of determining their precise composition, and showing the extent of the harmful effects which they produce. To THE JOURNAL of the American Medical Association belongs the credit of suggesting the formation of a board of control, with the double object of reviewing all medical preparations offered for insertion in the advertising pages of that journal, and of giving a description of the unofficial preparations, which conform to the required standard, the whole to be issued in a work supplementary to the United States Pharmacopeia, to be entitled, "New and Unofficial Remedies."

Furthermore, the board of trustees of the American Medical Association has authorized the creation of a Council on Pharmacy and Chemistry, which proposes to examine into the composition of the numerous and varied preparations that are constantly offered to the medical profession independently of the United States Pharmacopeia. Up to the present time the investigations have been confined principally to proprietary nostrums, on which the editor of THE JOURNAL of the American Medical Association has wisely commented as follows: "Before we can proclaim war on patent medicines with energy and a clear conscience, it will be necessary for us as physicians to rid ourselves of the proprietary nostrum evil by ceasing to prescribe preparations that are nothing more nor less than patent medicines. Before medical journals can criticize newspapers for carrying patent medicine advertisements, they must themselves refuse advertisements of similar preparations, even though these be dignified with the name of proprietary medicines."

It should be stated here that the secretary of agriculture has organized in the Bureau of Chemistry of that department a drug laboratory for the investigation of the purity, adulteration, false labeling and false brand-

2. "The Nostrum Evil," THE JOURNAL A. M. A., Dec. 2, 1905.

3. Anders: "The Curriculum of the Scientific Professional College," THE Medical Bulletin, October, 1905.

ing of drugs. This laboratory, which was established about two and a half years ago, has accomplished much valuable work, and the bulletins issued from it can be secured by addressing a request to that effect to the secretary of agriculture. More recently, the agricultural department, at the request of the postmaster-general, has investigated certain secret remedies and nostrums, as well as the advertisements offered for transmission through the mails. As a consequence, the literature pertaining to the nostrums investigated has been excluded from the mails, and to this extent the public has been protected against fraudulent allegations.

In commenting on the important work undertaken by the postoffice and agricultural departments at Washington, Dr. W. H. Wiley⁴ remarks: "In the interests of the medical profession, of the pharmaceutical profession and of the public, it is hoped that federal control of drugs in general may become universal and more efficient. In this way the interests of the two great professions mentioned, and of the public, can be best conserved." As measures of relief for the evils under consideration, the combined results of the labors of the lay press, the medical press, the Council on Pharmacy and Chemistry of the American Medical Association, and the two departments of the United States government mentioned above, can not be overestimated, and through these channels both the general public and the medical profession are receiving reliable, impartial information on the subject.

In attempting to deal with this great problem, however, its financial aspects must be reckoned with, since men engaged in this nefarious business pay annually enormous sums of money to newspapers, magazines and medical periodicals for cunningly executed advertisements of a deceptive character. It has been estimated that the yearly amount expended for "patent medicines" and other nostrums exceeds \$100,000,000—"more than one thousand dollars to each daily, weekly and monthly periodical in the country." The query, Can the mutually profitable financial relations existing between the press and the patent-medicine makers be severed? is pertinent. A few high-class secular periodicals, e. g. *The Outlook*, *The Evening Post*, *Life*, *Collier's Weekly*, and *The Ladies' Home Journal*, refuse to accept such advertisements, thus showing an ardent desire to break up this illicit combination. We may be assured that a thorough appreciation of the beneficial results to the public resulting from this attitude of the lay press will prove to be an incentive for emulation, and that eventually, as the result of the upheaval in progress, all reputable publications—both medical and lay—will be lifted to the same high, ethical level.

On the other hand, to my mind, the great American evil could be more effectually remedied by a comprehensive legal enactment compelling all makers of proprietary articles to place the formula on the bottle. Legislation could be of further service by insisting that preparations containing poisons must be labelled accordingly, while those containing alcohol must give its precise percentage. Under these circumstances, laudatory advertisements would no longer suffice, for the simplicity of their composition and the absurdity of the extravagant and unfounded claims made for them as therapeutic agents would be known to the general public. Such legislative action has been taken both in the state of North Dakota and by the New Zealand parliament.

According to Dr. Syme,⁵ there followed in the last-named country a storm of protest by the manufacturers of "patent medicines" and their agents, which led to a modification of the regulations to the extent that the formula was to be lodged with the Health Department. But the manufacturers still objected and they decided not to send their medicines to New Zealand, realizing, as this writer observes, that "they would have no demand at the extravagant prices at which they had hitherto been sold."

The patent medicine manufacturer is quite aware of the fact that so soon as the public shall have been made acquainted with the composition of his fraudulent preparations popular support will be promptly withdrawn. It is, however, impossible to foresee the time when state legislative action shall have progressed to the point of accomplishing the coveted practical good, owing to the existence of organized opposing forces, such as the Proprietary Association of America, and other influences. Meanwhile it seems to me that the work of educating the people at large devolves naturally on physicians and pharmacists (although up to the present undertaken principally by the lay press), even at the risk of being denounced as actuated by self-interest.

It is of the utmost importance to make the public understand, as the result of the present crusade, that the "demonstrations of popular sentiment" in favor of these nostrums are absolutely fictitious, that they are inspired by the unwarranted claims of the manufacturers, and that advertising contracts exercise a controlling influence over the lay press, especially in the rural districts. The popularizing of such information would at least compel manufacturers to guard and moderate the unfounded claims of their patented and proprietary articles. May we not indulge ourselves in the hope that a properly directed, energetic and unceasing agitation of the subject, in the absence of efficient protective legislation, may compel the adoption of the habit of placing the formulas on the bottle?

As touching the secret proprietary articles, which are advertised principally in the medical journals, it is assuredly the province of our profession to create an appropriate professional sentiment, and to disseminate thoughts and data, that will bring medical men in touch with those influences that make for a higher moral and ethical standard. No other factor would be so influential as an uplifting force in this prodigious task as the united medical press. THE JOURNAL of the American Medical Association has had the courage and independence to give to the medical profession of this country the true situation regarding the nostrum evil in a truly scientific spirit, and is rapidly eliminating the advertisements of articles of an objectionable character from its advertising columns. As stated above, a certain number of high-class lay journals are refusing to accept the advertisements of unethical "patent medicines," and the question naturally arises, Can the best medical journals afford to occupy any longer a lower ground with reference to the secret proprietary articles? A movement of this sort should include the education and enlightenment of the general public—a course that would, in turn, give greater scope and meaning to all professional sentiments and lines of action. So long as the community is opposed, or even indifferent, to the endeavors of the profession to correct the abuses under discussion, just so long will the deep-rooted inclination of the populace to

4. THE JOURNAL A. M. A., Dec. 3, 1904.

5. International Medical Journal of Australasia, quoted by THE JOURNAL A. M. A., Nov. 4, 1905, p. 1422.

disregard or even combat new ideas and methods defeat our best efforts.

Finally, the profession must adopt a general plan of action if it would hope to execute a winning fight against the great wrong, and I would respectfully submit a series of lines of attack to be included in such a plan:

1. Agitation through co-operative effort on the part of high-class journals, medical writers and medical organizations with a view to enlightening the profession and elevating the standard of the profession.

2. The enlightenment of the public by the agencies noted under 1 with the aid of the influential lay press, which has already rendered excellent pioneer service.

3. Medical schools and medical journals should aim to educate physicians regarding official preparations and proprietary articles whose composition is known and of proved usefulness.

4. The proper training of medical students in the science and art of pharmacy, including prescription writing.

5. Co-operative effort on the part of physicians and scientific pharmacists is to be encouraged, e. g., such as the admirable work that is being carried out by the Council on Pharmacy and Chemistry of the American Medical Association.

6. Continued exposure of "patent medicine" and nostrum methods and the disclosure of the composition of these preparations by the lay and medical press (to the public) is urgently needed.

7. The creation of a professional sentiment to the effect that trade-marked nostrums are unworthy of being prescribed.

8. Attempts to emancipate a shackled medical and lay press must be persistently maintained.

9. The enactment of appropriate legislation—a line of action in which it will be hard to demonstrate practical results in the immediate future, owing to powerful organized opposition.

10. The furtherance of the aims of the upheaval in progress by completing the organization of the medical profession of America in accordance with the plan proposed by the American Medical Association in 1900.

SODIUM AURATE: A NON-IRRITATING LOCAL ANTISEPTIC OF REMARKABLE POWER.*

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BOSTON.

The need of an antiseptic combining effective germicidal power with lack of toxicity to the tissues is well known. So many chemical antiseptics have been tried without success that the belief has become prevalent that no chemical substance could possibly fill these requirements. In fact, attention has been directed of late almost exclusively to the development of serum therapy, which, however, has yielded but few practical results. The problem has presented itself to me particularly in connection with gonorrheal ophthalmia. Here it would seem easy to overcome the infection by means of local applications, yet thus far no satisfactory antiseptic has been available for this purpose. After many failures in attempts to solve this problem, I believe I have found an antiseptic which will prove of great value not only in the treatment of infections of the eye, but also in the

treatment of many other conditions in which the use of a local antiseptic is indicated. In this communication the method of preparing the antiseptic will be given and the experiments which demonstrate its bactericidal properties will be described. While in the cases in which it has been tried it has given most gratifying results, as yet these are necessarily few in number, and a full report of its action in a series of clinical cases must be deferred.

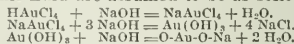
PREPARATION.

The antiseptic is prepared as follows:

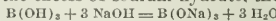
One gram (15 grs.) of gold chlorid¹ is dissolved in 50 c.c. distilled water. To this is cautiously added sufficient of a 5 per cent. aqueous solution of sodium hydrate to produce a faintly alkaline reaction with ordinary litmus paper. As the process of neutralization approaches the stage desired the fluid becomes lighter in color and also slightly turbid. One hundred c.c. of a 1 per cent. solution of boric acid is then quickly added and the whole thoroughly shaken. This should cause the turbidity to disappear and the fluid to turn somewhat darker in color. If the turbidity persists, it indicates that too much sodium hydrate has been added. The total volume should now be made up to 200 c.c. with normal saline solution, filtered and kept in a glass stoppered bottle. The final solution should give a faintly acid reaction. While, as will be shown, the gold does not exist in the fluid as a chlorid, for practical convenience the strength of the fluid is best expressed in the percentage of gold chlorid used in its preparation. The above solution will, therefore, be designated as a ½ per cent. solution. A 2 per cent. solution may be prepared from which the lower percentages may be obtained by dilution, but it is much more difficult to arrive at the proper degree of acidity in the higher strength. By evaporating the fluid to dryness the antiseptic may be obtained in powder form from which an ointment can be prepared.

The bactericidal properties of this fluid are dependent on the presence of gold. It is the partial or complete neutralization of the fluid, however, that renders possible its use as a practical antiseptic. The boric acid is not an essential constituent and is added only to avoid a practical difficulty. This arises from the fact that in order to prevent precipitation the fluid must be sufficiently acid, while if too acid it is highly irritating to the eye. The boric acid neutralizes any slight excess of sodium hydrate and ensures an acid fluid free from irritating qualities. If, through mistake, too much sodium hydrate has been added and precipitation has taken place (which may not occur until after twenty-four hours) the precipitate can be dissolved by adding an excess of hydrochloric acid and the acidity again reduced to the proper degree by sodium hydrate. When properly prepared the solution remains stable indefinitely.

The chemical reactions which take place in the preparation of this fluid are assumed to be as follows:



Further reaction is prevented by the boric acid, which reacts with the excess of sodium hydrate, thus—



The final constituents of the fluid, then, are in all probability sodium aurate, sodium chlorid, sodium borate and boric acid. Of these it is obvious that the sodium aurate alone gives the bactericidal properties to the fluid. It is hardly necessary to state that the antiseptic could be prepared by the use of other compounds of gold and of other alkalis, but the method here given seems to be the most convenient.

* Read before the New England Ophthalmological Society, and before the Boston Society of the Medical Sciences.

1. Chlorid of gold may be obtained from wholesale druggists or from dealers in photographic supplies. Although sold under this name it is really hydrochlorauric acid, HAuCl_4 . The pharmacopoeial preparation, chlorid of gold and sodium may be substituted if used in double quantity. It is, however, more expensive.

When prepared as above this fluid, in strength of 0.5 per cent. gold chlorid, may be repeatedly dropped into the conjunctival sac without producing any feeling of irritation or giving rise to hyperemia. After a time a peculiar sticky or dry sensation may be experienced, and one or two patients have spoken of an occasional blurring of vision after its use. This is not due to mucus or other secretion, but probably to small collections of desquamated epithelium brushed across the cornea by the lids. The 1 per cent. solution produces some slight irritation, but judging by the bacteriologic tests, for most purposes this is unnecessarily strong. If the 1 per cent., or even the 2 per cent., solution is made faintly alkaline in reaction it loses its irritating qualities, but unfortunately will undergo precipitation within a few days. Where it is necessary, however, to make use of the stronger solution it can be prepared fresh every day from two stock solutions, one containing the gold and the other the alkali in suitable proportions. The alkaline solution has fully as strong bactericidal properties as the acid solution. The only disagreeable feature of the fluid, whether acid or alkaline, is that it stains about everything on which it is allowed to dry, including the skin. It does not irritate the latter, however, and the stain wears off in a few days. If not too old the stain may be removed from linen by means of Lugol's solution. Fortunately the fluid does not stain the conjunctiva or cornea. While, as already stated, the fluid is stable when properly prepared, it undergoes a certain amount of precipitation when foreign particles are added to it by the repeated insertion of eye-droppers. It is, therefore, probably best to renew frequently the fluid used by the patients.

BACTERIOLOGIC TESTS.

The bactericidal power of the antiseptic was tested by placing one-half to one c.c. in a small sterile glass vessel, stirring into it organisms from a 24-hour-old culture, and taking cultures from the mixture at definite intervals. An amount of bacterial growth equal to several colonies was always stirred in so that the fluid was rendered distinctly turbid. In making the cultures one large loop full of the fluid was transferred to the water of condensation in a blood serum culture tube, the latter shaken and the water flowed over the solid medium. The culture tubes were especially prepared with an extra amount of water for this purpose. By this method the number of bacteria killed in a given time was quite accurately indicated by the number of colonies which grew out on the solid media. Thus, in case all the cultures taken were positive, the length of exposure necessary to kill all the organisms could be closely estimated, and the next series of exposures timed accordingly. A sufficient variety of bacteria were tested to show that the action of the fluid was not limited to any special kind. The following table shows the results of the tests:²

Explanation: The first of the two figures stating time of exposure indicates the last positive culture, the second figure the first negative culture. The time is expressed in minutes, except in the case of the last two organisms.

| Strength of solution computed in percentage gold chlorid | 1/2 p. c. | 1/3 p. c. | 1/4 p. c. | 1/8 p. c. | 1/16 p. c. | 1/32 p. c. |
|--|--------------|--------------|--------------|--------------|---------------|---------------|
| <i>Staphylococcus aureus</i> | 1 1/2, 1 | 1 1/2, 1 | 2, 3 | 5, 8 | 8, 10 | 10, 15 |
| <i>B. coli communis</i> | 1 1/2, 1 | 1 1/2, 1 | 1, 2 | 2, 4 | .. | .. |
| <i>B. typhosus</i> | 1 1/2, 1 | 1 1/2, 1 | 1, 2 | 2, 4 | .. | .. |
| <i>B. prodigiosus</i> | 1 1/2, 1 | 1 1/2, 1 | 1, 2 | 2, 4 | .. | .. |
| <i>Pneumococcus</i> | 1 1/2, 1 | 1 1/2, 1 | 1, 2 | 2, 4 | 4, 6 | 4, 5 |
| <i>Streptococcus</i> | 1 1/2, 1 | 1 1/2, 1 | 1 1/2, 1 | 1 1/2, 1 | 2, 4 | 4, 8 |
| <i>B. diphtheriae</i> | 1 1/2, 1 | 1 1/2, 1 | 1 1/2, 1 | 1 1/2, 1 | 2, 4 | 4, 8 |
| <i>B. pneumoniae</i> | 1 1/2, 1 | 1 1/2, 1 | 1 1/2, 1 | 1 1/2, 1 | 2, 4 | 4, 8 |
| <i>B. anthracis</i> (spores)..... | 2, 3 | .. | 3 1/2, 4 1/2 | .. | .. | .. |
| <i>B. subtilis</i> (spores)..... | 2, 3 | .. | 6, 10 | .. | .. | .. |

2. These tests have been carefully repeated and the results confirmed by Dr. E. N. Toby in the bacteriologic laboratory of the Harvard Medical School.

Bactericidal Action in Presence of Albumin.—A saturated filtered solution of dried egg albumin was mixed with the 1/2 per cent. solution in the proportion of 1:2, making the final percentage 1/3 per cent. and the mixture tested as described above. The *Staphylococcus aureus* was selected for these tests on account of its resistant powers. The results obtained were practically the same as when the dilution was made with normal saline solution. When the tests were made immediately after mixing a slightly longer exposure was required, due no doubt to the fact that the solution did not have the same concentration throughout. The same thing was true when the organisms were stirred in the albuminous fluid first and the antiseptic then added. When the mixture was allowed to stand one hour before testing the results were exactly the same as in the absence of albumin. After standing twenty-four hours an exposure of two to three minutes was required. At the end of twenty-four hours the mixture began to assume a purple tint, indicating a reaction between the albumin and gold, and after several days a precipitate was thrown down. It is evident from these tests, therefore, that for all practical purposes the bactericidal action of the antiseptic is not interfered with by the presence of albumin.

Bactericidal Action in Presence of Urine.—On mixing with urine no apparent reaction took place and the bactericidal power of the antiseptic was not impaired even when the mixture was allowed to stand forty-five minutes before testing.

Bactericidal Action in Presence of Blood.—When the 1/2 per cent. solution was mixed with an equal quantity of blood the latter immediately became more intensely red and the bactericidal properties of the antiseptic were at once destroyed. The typhoid bacillus was not killed by the mixture after an exposure of twenty-four hours. Microscopic examination failed to show any change in the character of the blood on the addition of the antiseptic, but its power to coagulate was destroyed.

The prompt change in color of the blood and the simultaneous loss of bactericidal power point to a union of the gold with the hemoglobin of the blood. A reaction with the blood plasma promptly and in several cases with extreme slowness with four to five tests demonstrate the futility of attempting to use the antiseptic intravenously.

Bactericidal Action in Presence of Pus.—Pus obtained from cases of otitis media, infected with the *Staphylococcus aureus* and *albus*, gave negative cultures after exposure of three to four minutes to the 1/2 per cent. solution.

Action of the Antiseptic on Ferments.—It was found that the pancreatic digestion of albumin was not interfered with in the 1/8 per cent. solution, but was prevented in the 1/4 per cent. solution. At the end of twenty-four hours the latter was diluted to make a 1/8 per cent. solution, but digestion still failed to go on, indicating destruction of the enzyme. The fermentation of glucose by yeast occurred in the 1/64 per cent. solution, but not in the 1/32 per cent. solution. Yeast exposed to the action of the 1/16 per cent. solution for one hour failed to ferment glucose when the mixture was diluted to the strength of 1/64 per cent.

TOXICITY OF THE ANTISEPTIC.

The harmlessness of the 1/2 per cent. solution when dropped into the conjunctival sac has already been mentioned. It has been used in this way at intervals of two minutes for one-half hour and at intervals of fifteen minutes for two weeks without injury to the eye. The subcutaneous injection of the fluid into a rabbit and also

into my arm was followed by no reaction. The following experiments were made to determine its remote effects when absorbed and taken into the circulation: Three c.c. of the $\frac{1}{2}$ per cent. solution were injected into the ear vein of a rabbit without producing any apparent effect. Fifteen c.c. of the same solution were injected into the peritoneal cavity of a rabbit weighing four pounds, also without apparent effect. This would be equivalent to a dose of about 500 c.c. in the case of an adult man. On the other hand, thirty c.c. of the $\frac{1}{2}$ per cent. solution injected into the peritoneal cavity of a rabbit weighing four- and one-fourth pounds caused death in twenty-one hours. The animal showed toxic symptoms within about five minutes after the injection, evidenced mainly by drowsiness, which gradually became more marked until death ensued. The abdominal cavity, opened immediately after death, was found perfectly normal and free from congestion. These experiments show that so far as the treatment of the eye is concerned no remote toxic effects of the antiseptic need be feared.³ It would seem also that the antiseptic could be used with safety in the treatment of genitourinary diseases. The effect produced by the absorption of large quantities of the antiseptic at frequent intervals requires further investigation.

PENETRATING POWER OF THE ANTISEPTIC.

That the effective penetrating power of the fluid is very great is indicated by its bactericidal power in the presence of albumin. The rapidity with which the fluid is absorbed was shown by the experiment just mentioned, in which thirty c.c. of the $\frac{1}{2}$ per cent. solution was injected into the peritoneal cavity of a rabbit. Here toxic symptoms were produced in five minutes, whereas fifteen c.c. similarly injected produced no effect, indicating in the former case great absorption in a short time.

COMPARISON WITH OTHER ANTISEPTICS.

The bacteriologic tests already given show the $\frac{1}{2}$ per cent. solution to be more powerful than a 1:1000 solution of mercuric chlorid. ^{VERHOEFF, A. J.} of the latter, made under the same conditions, it required two to three minutes to kill *Staphylococcus aureus*. It was found that more bacteria were killed in a shorter time by the mercuric chlorid than by the antiseptic for a longer time. This is in the finding of Abbott that a few cocci may survive after an exposure of thirty minutes to the 2 per cent. mercuric chlorid solution. Silver nitrate in 2 per cent. solution, which was once generally used in treatment of corneal ophthalmia, but now largely abandoned on account of its irritating qualities, requires between four and eight minutes to kill the *Staphylococcus aureus*. It is, moreover, precipitated by albumin and sodium chlorid. I found argyrol, the silver compound now most used for this purpose, to require, even in a freshly-prepared 50 per cent. solution, at least thirty minutes to destroy the *Staphylococcus aureus*. A 12 per cent. solution failed to destroy the same organism after an hour's exposure. Contrary to statements sent out by the manufacturers of this

preparation, I found that it was precipitated by albumin. When the 50 per cent. solution was mixed with an equal quantity of saturated albumin solution it failed to kill the *Staphylococcus* after an exposure of three hours, thus showing that it possesses no effective penetrating power. It was found also that argyrol was precipitated by urine. Spores of the hay bacillus were not destroyed by a 50 per cent. solution of argyrol after an exposure of twenty-four hours.

To explain how the antiseptic destroys bacteria is difficult. It seems most likely that the death of the bacteria is due to the replacement of some important radicle in their protoplasmic molecules by gold. This is suggested by the fact that metallic gold itself is antiseptic. Gold is so easily precipitated from the solution that it is almost as if the organisms were exposed to nascent gold. To explain why the solution will kill bacteria in less than a minute, while it requires hours to react with albumin, and to explain its harmlessness to the tissue cells, is also difficult. The first explanation that suggests itself is that the phenomenon is due to some peculiarity in the protoplasm of the bacteria. Possibly it is dependent, in part, at least, on the small size of bacteria. Thus if one micron is assumed to be the average diameter of a bacterium and twenty microns that of a tissue cell, the relative volumes of the two would be as 1:800. According to this ratio, if the bacterium was killed by an exposure of one minute, the tissue cell would require an exposure of about twelve hours. Moreover, it would seem that such a slow antiseptic action as this might be overcome by the vital activity of the cell.

In connection with this aspect of the subject, Dr. Henderson has made some observations, indicating a physical basis for the bactericidal action of the antiseptic, which he has kindly described in the following note:

PHYSICAL PROPERTIES OF THE ANTISEPTIC.

LAWRENCE J. HENDERSON, M.D.*

The solution described above, sodium aurate acidified with boric acid, in which the chemical equilibrium between the various constituents has not been determined, possesses two important properties which must contribute to the knowledge of its action on micro-organisms.

The one of these, which was investigated with the Overton-Hans Meyer theory of narcosis in mind, is the ability of the solution to give up gold to neutral olive oil when shaken up with that solvent. It was found in four experiments, on shaking together neutral olive oil and a solution of 0.7 per cent. of sodium aurate acidified with boric acid, separating the two phases in a separatory funnel and drying the oil with calcium chlorid, that the oil always contained gold, as was proved by heating the oil, thereby reducing the gold compound to metallic gold, which colored the liquid red. In the aqueous phase the gold was determined by precipitating it as sulphid and weighing the resulting metal. In all cases the amount of gold remaining in aqueous solution was markedly decreased 25 per cent., but variations in acidity of the solutions influenced the equilibrium of partition between the two solvents.

The significance of this solubility of gold in oil depends on the fact that the lipoids of the cell wall, lecithins, cholesterol, etc., manifest much the same solvent action as oil, so that in this case, as in the case of the narcotics, the penetration of the foreign substance into the cell is to be explained by a simple physical mechanism.

3. In connection with the application of antiseptic solutions to the eye I suggest what is believed to be a new method. This consists in building a sort of dam, as it were, around the eye, extending from the nose to the temple and as close to the eye as possible. As material for the dam, Dr. E. J. Hussey suggested the use of ordinary carpenter's putty, and in actual practice this has answered the purpose admirably. When the patient is reclining, and the small clisters formed in this way is filled with fluid (about 10 c.c.) not only the cornea and entire conjunctival sac are exposed to the action of the antiseptic but the lid margins and surrounding skin also.

* From the Laboratory of Biologic Chemistry of the Harvard Medical School.

The second significant fact is that this solution, almost ineffective itself to coagulate egg albumin, rapidly, and under proper conditions, completely coagulates that mixture of proteids, when reduced in its presence by ferrous sulphate or other substances. This was proved by mixing in three cylinders, 1, gold solution + egg albumin; 2, ferrous sulphate + egg albumin; 3, gold solution + egg albumin + ferrous sulphate.

In the first two cylinders a cloud appeared only on standing and did not become heavy for hours. In the third cylinder the gold was immediately and completely reduced, a voluminous precipitate resulted, and in a portion of the filtrate from this precipitate it was impossible to find albumin.

It has been shown by Dr. Verhoeff that bacteria which have been killed by this gold solution are colored with metallic gold. This intracellular reduction may be due to numerous factors, but oleic acid alone is enough to bring it about by a reaction analogous to the well-known osmic acid staining reaction. It is probable, as in the experiment described above, that within the cell during the reduction of the gold the cellular proteids are coagulated and the organism killed.

Special Article

THE PHYSICIAN AND THE PHARMACOPEIA.*

CHAPTER V.

DIURETICS.

Diuretics and diaphoretics may be considered together since they are often used for the same purpose, the one being used to supplement the other, and because the same agent which produces diuresis under certain conditions, may cause diaphoresis when these conditions are slightly changed.

Diuretics may be divided broadly into those which influence the circulation, and those which act on the secretory cells of the kidney. Though the same agent may possess both actions to some extent, we shall consider these remedies with reference to the principal effect according to this classification.

While the exact mechanism of urinary secretion remains a problem, the indications for diuresis and the method of causing it are fairly clear. When the official remedies fail to produce this effect we may usually attribute the failure to the condition of the kidney, feeling sure that the secretory cells are incapable of performing their function and that nothing short of the creation of new cells can be effective. Even this task would not be beyond the powers of some of the much vaunted mineral waters and nostrums if we are to believe the statements made in the circulars and other advertisements of the proprietors.

Diuretics are especially indicated in dropsy of cardiac, or even of renal, origin, provided the cells are capable of free secretion. In renal dropsy agents of the first class (those which influence the circulation), or those which mildly stimulate the kidney cells without producing irritation, are to be preferred. If the renal cells are incapable of increased secretion, diaphoresis should be resorted to in order to give rest to the kidneys.

Diuretics are also important in causing the removal of toxins and substances which form concretions (urates and phosphates).

Digitalis.

Nearly all authorities agree that digitalis is the most important of the official remedies in the treatment of dropsy of cardiac origin, its action being directed mainly toward the increase in the efficiency of the heart, with a consequently improved circulation in the kidney and increased diuresis. For this purpose the tincture is frequently employed, but, perhaps, the most efficient remedy is the combination of digitalis with squill and calomel, commonly called Niemeyer's pill.[†]

The official squill, which is described in Chapter II, is too irritant to permit of its employment in nephritis. This is very important and should be borne in mind if one uses any of the much-heralded diuretic nostrums which contain squill or its active principles.

That squill is extremely active in causing a watery diuresis is true, but in overdoses it is equally potent to lessen or even to suppress the flow by reason of its irritant action. This may result in bloody urine. This irritant action may serve to explain the "malaise" and some other ill effects resulting from the misuse of squill, or nostrums containing it, when it is specifically contraindicated.

The dose of squill, in powder, is 0.05 to 0.1 gm. (one to two grains) every three hours until some nausea occurs.

DIGITALIS.—U. S.—Digitalis, Foxglove. The dried leaves of *Digitalis purpurea* are collected from the second year's growth. First used for scrofula, its diuretic properties were discovered by Withering about 1775, when it leaped into popularity and is now official in all pharmacopeias.

Owing to the variability of the cheaper grades of digitalis, it is well to insist on the English or on a comparatively fresh leaf of the second year's growth.

There is much confusion in regard to the use of the terms digitalin and digitaline (not digitalein), but it is hardly advisable to consider the subject extensively in this place. Commercial digitalin, i. e., that found in the shops, consists of variable amounts of the active principles of digitalis. The term digitaline (not digitalein) is misleading and should be avoided. Digitoxin has recently been brought into prominence, but it is better to confine ourselves to the use of the powdered leaves and the official preparations, the latter being very commonly prescribed alone; indeed, there is still so much obscurity about the chemistry of digitalis that the physician will do well to avoid the use of any of the isolated active principles. It is to be remembered that the action of digitalis is elicited slowly, and that it is sometimes necessary to precede it with a more promptly acting drug, such as caffeine or strophanthus. The several preparations of digitalis are given at intervals of from four to six hours.

Their use in cardiac insufficiency will be discussed later.

Average dose: 0.05 gm. (50 mg. or 1 grain).

Of the preparations of digitalis the most desirable, when diuresis is the main factor, is:

INFUSUM DIGITALIS.—U. S.—This represents 1.5 per cent. of the leaves extracted with boiling water, flavored with cinnamon water and preserved with 10 per cent. of alcohol.

Owing to the development of principles with a picrotoxin action in the infusion which has been kept for a long time, it should be freshly prepared when dispensed.

Average dose: 8 c.c. (2 fluidrachms).

TINCTURA DIGITALIS.—U. S.—This is now of 10 per cent. strength instead of 15 per cent., as formerly.

Average dose: 1 c.c. (15 minims).

FLUIDEXTRACTUM DIGITALIS.—U. S.—This is made with diluted alcohol.

Average dose: 0.05 c.c. (1 minim).

EXTRACTUM DIGITALIS.—U. S.—This is made by evaporating the fluid extract to a pilular consistence.

* A typographical error occurred in the "typical ippecac prescription," in Chapter II of this article in *THE JOURNAL*, Dec. 23, 1905, page 1951. In the first column the amounts of ammonium chloride and syrup of tolu are not correct in the apothecaries' system, the drams and ounce signs having been transposed. Our attention was called to this early, but we considered the error so apparent that no physician would fail to recognize it, so we made no mention of it in *THE JOURNAL*. As correspondents continue to write about it, however, we call attention to the error and acknowledge their kindness in writing.

3. The formula for this pill is as follows:

| | | |
|------------------------|------------------|-----|
| R. Pulvis digitalis | | |
| Pulvis scille. aa. | grs. x | 60 |
| Hydrarg. chlorid. mit. | grs. i 1/4 | 108 |

This amount is to be divided into ten pills, or preferably, capsules. One of these pills every three hours will be found effective. The calomel is often omitted, or it may be replaced by 0.06 gm. (1 grain) of the blue mass (massa hydrargyri) in each dose, if it is to be made into pills, or gray powder (hydrargyrum cum creta), if into capsules.

Average dose: 0.01 gm. (10 mg. or 1/5 grain).

Strophanthus.

Rather closely resembling digitalis in its action on the heart and as a diuretic, if indeed, it may not surpass the older drug in the latter case, is strophanthus, which does not cause the same degree of vasoconstriction which sometimes interferes with or prevents the diuretic action of digitalis. It is mostly used in the form of the tincture.

While strophanthus has some advantages, such as the more prompt action and a slighter tendency to cause cumulative effects, clinicians have not found it so generally useful as digitalis.

The powerful action of strophanthin as a local anesthetic, though denied, has been well established.

STROPHANTHUS.—U. S.—The ripe seed of *Strophanthus komlé*.

TINCTURA STROPHANTHIL.—U. S.—This is now of 10 per cent. strength—just double that formerly official.

Average dose: 0.5 c.c. (8 minims).

STROPHANTHINUM.—U. S.—This consists of one or more glucosides on which depend the medicinal properties of strophanthus.

Average dose: 0.0003 gm. (0.3 mg. or 1/200 grain).

Apocynum.

APOCYNUM.—U. S.—This drug has enjoyed a considerable reputation in domestic practice as a remedy in dropsy, but appears to be inferior to digitalis in the same group to which it belongs.

H. C. Wood, Jr., believes that this drug deserves more attention as a cardiac stimulant than it has hitherto received.

It is not used in substance; instead its liquid preparations are used.

FLUIDEXTRACTUM APOCYN.—U. S.—This is the only official preparation.

Average dose: 1 c.c. (15 minims).

Caffein.

When cardiac stimulants or other agents cause such vasoconstriction as greatly to lessen the amount of blood which passes through the kidney, and consequently the diuresis, a vasodilator is sometimes employed, but it is more rational to avoid the necessity for this when possible.

When the object of diuresis is to get rid of fluid which has accumulated, it is, of course, better to avoid unnecessary amounts of water, and in such cases diuretics are given in solid, or at least concentrated, form.

Caffein is the most prominent of the official drugs which produce diuresis mainly by action on the kidney cells. While digitalis may act slightly on the kidney cells, but mainly on the heart, caffein, on the other hand, acts mainly on the cells of the kidney and much less on the heart. It may, however, cause such considerable vasoconstriction as seriously to lessen the amount of blood passing through the kidney and the diuresis in consequence, in that case the unofficial theobromin might be employed, as this is said to interfere much less with the circulation. Dr. G. N. Stewart states that caffein causes a passing vasoconstriction in the kidney with lessened diuresis, soon followed by vasodilation with increased diuresis.

When cerebral excitement (a tendency to wakefulness) is to be avoided, caffein is contraindicated.

Caffein is a constituent of tea, coffee, kola, and more abundantly (5 per cent.), of guarana, which is official.

Caffein is not very soluble in water or alcohol, but its solubility in water is greatly increased by such salts as potassium bromid, and sodium benzoate or salicylate; this well-known fact has been appropriated as a "discovery" by manufacturers of certain nostrums.⁴

CAFFEINA.—U. S.—This is a feebly basic (alkaloidal) substance obtained from *Thea sinensis*, *Coffea arabica* or other plants. It does not form stable salts.

Average dose: 0.05 gm. (50 mg. or 1 grain).

Two other soluble forms of caffein are:

CAFFEINA CITRATA.—U. S.—This consists of equal parts of caffein and citric acid.

Average dose: 0.1 gm. (2 grains).

CAFFEINA CITRATA EFFERVESCENS.—U. S.—This contains 4 per cent. of citrated caffein.

Average dose: 4 gms. (60 grains).

Diuretin is a mixture of theobromin and sodium salicylate, while agurin consists of theobromin, sodium and sodium acetate. Mixtures of caffein and lithium benzoate or salicylate are also used. Diuretin is decomposed on exposure to the air and becomes much less soluble.

When caffein or other diuretics produce a more than temporary vasoconstriction in the kidney, one drop of the 1 per cent. solution of nitroglycerin may be given at the same time.

The usefulness of hot tea as a diuretic is too well known to require further comment.

The official sugar of milk and the unofficial urea cause diuresis, probably by acting on the renal epithelium.

Scoparius.

SCOPARIUS.—U. S.—This is sometimes incorrectly classed with digitalis because it slows the heart, but it weakens the beat while digitalis strengthens it. The alkaloid, spartein, is responsible for the cardiac and vasoconstrictor effect of scoparius, but the diuretic effect is due to scoparin, a glucosid.

Average dose (of scoparius): 1 gm. (15 grains).

The infusion or decoction is recommended for producing diuresis, except in dropsy.⁵

Spartein.

SPARTEIN SULPHATE.—U. S.—While this is obtained from scoparius it is not a diuretic.

Average dose: 0.01 gm. (1/5 grain), but this dose is sometimes considerably exceeded.

Irritants.

Irritants which are excreted by the kidneys produce diuresis but, of course, they must not be used in greater amounts than are necessary to produce a mild stimulation. They are contraindicated in nephritis.

The use of calomel in connection with squill and digitalis has been mentioned. It is most useful in cardiac dropsy and its use is to be stopped when the diuresis becomes free. It may be given in doses of 0.2 gm. (3 grains) three times daily, or in the form of Niemeyer's pill.⁶

Volatile Oils.

The irritants include a number of volatile oils which are much more frequently used for their antiseptic action on the urinary tract than for any slight increase in renal action which they may cause. They include such volatile oils as oil of turpentine (oleum terebinthinae) and oil of juniper (oleum juniperi), which are more often used as diuretics than copaiba, cubeb and matiao, which are employed mainly as antiseptics.

Hexamethylenamin.

The volatile oils have been largely superseded as urinary antiseptics by the now official synthetic hexamethylenamin.⁷

HEXAMETHYLENAMIN.—U. S.—(Hexamethylen tetramin.) This is a condensation product produced by the union of formaldehyd and ammonia. While free from the irritating effect of formaldehyd it yet retains its antiseptic properties, the formaldehyd being gradually set free by dilute acids, etc. Being an ammonium derivative, a solvent effect on uric acid, etc., has

4. The following mixture, to be varied according to needs, represents the method of using caffein in this soluble form:

| | |
|---|-----|
| Caffein (alkaloid) | 4 |
| Sodium salicylate, $\bar{a}\bar{a}$ | 31 |
| Cinnamon water to make..... | 311 |

Each teaspoonful contains about 0.2 gm. (3 grains) of caffein. Sodium benzoate or lithium salicylate or benzoate may be substituted for the sodium salicylate. This formula requires no unusual pharmaceutical skill to compound and the cost is very much less than that of the proprietaries used for the same purpose.

| | |
|--|-----|
| 5. Scoparius | |
| Potassium bitartrate, $\bar{a}\bar{a}$ | 388 |
| | 15 |

This quantity of material is to be added to 1 liter (1 quart) of water, in a suitable vessel, boil for ten minutes. Allow to cool and strain. A wineglassful of the resulting decoction may be given every hour.

6. The official name is very cumbersome, but no satisfactory substitute has thus far been suggested. Hexamethylenamin was first brought before the profession by Schering under the trade name of urotropin (Schering and Glatz), and it is still sold by them under this name. It is also on the market under various other trade names, such as aminoform, formin, cystogen, and others.

been claimed for it, just as for lithium salts. It is readily soluble in water and is best given in solution.

Average dose: 0.25 gm. (4 grains).

This substance has been introduced with some slight modification under various names; usually the modification is only sufficient to enable the manufacturers to say that their product is not identical with the official. For instance, helmitol is anhydromethylen citric acid with hexamethylenamin. Uriform embraces two other drugs of minor importance. The official preparation may be considered at least equal to them, since it is not modified by any useless or inferior products, and is readily controlled by chemical tests for purity.

Uva Ursi.

Another drug of this class which has been the subject of much dispute is *uva ursi*. Its principal usefulness is probably in catarrhal conditions of the urinary tract. It contains a glucosid, arbutin, which is decomposed, partly perhaps in the kidney, but more abundantly in contact with catarrhal mucous membrane, hydrochinon, an antiseptic, being formed.

UVA URSI.—U. S.—The dried leaves of *Aretostaphylos uva ursi*, of which the only official preparation is:

FLUIDEXTRACTUM *UVA URSI*.—U. S.

Average dose: 2 c.c. (30 minims).

Infusion of *uva ursi* is made according to the general formula for infusions by pouring 1 liter (1 quart) of boiling water on 50 gms. (1 oz. 5 drs.) of bruised *uva ursi*.

The fluid extract or the infusion may be given alone three or four times daily.

Chimaphila.

CHIMAPHILA.—U. S.—The dried leaves of *Chimaphila umbellata*, commonly called *pissesewa*. It was introduced in America by Dr. John S. Mitchell in 1803, and later into England.

Its medicinal action closely resembles that of *uva ursi*, to which, however, *chimaphila* is inferior.

FLUIDEXTRACTUM *CHIMAPHILÆ*.—U. S.

Average dose: 2 c.c. (30 minims).

Acetates and Citrates.

There remains to be considered an important class of substances, which are used as diuretics, but they are so well known that only a very brief notice is needed here.

The acetates or citrates of sodium and potassium increase the alkalinity of the blood and lessen the acidity of the urine or render it alkaline; they also increase diuresis. Potassium bitartrate and nitrate are also widely used as diuretics, mainly as additions to mixtures. For this purpose they are largely diluted with water, the latter alone being the most commonly used of all diuretics.

Cantharides is very rarely used for its effect on the kidneys, as it is extremely irritant.

The methods used for producing diaphoresis are analogous to those employed for diuresis, consisting in those which influence the circulation and those acting on the sweat glands; but in addition, certain agents, notably, solution of ammonium acetate, act on the sweating center.

The circulation in the skin is readily influenced by the application of heat in numerous ways and by what amounts to the same thing, the prevention of its loss by an impervious cover, such as oiled silk or by agents which cause dilation of the vessels of the skin, such as hot alcoholic drinks and spirit of nitrous ether. Everyone is familiar with the sweating of nausea, and while any nauseant will cause diaphoresis, the only one which is generally employed for the purpose is the powder of ipecac and opium, the well-known Dover's powder. The only official substance used for the purpose which directly stimulates the secretion of sweat is *pilocarpus* and its alkaloid, *pilocarpin*. They do not act on the secretory cells as caffeine does or on the kidney, but by stimulation of the secretory nerves.

Diaphoretics are employed to arrest "colds" in the early stages, to aid in getting rid of fluid accumulations, as in dropsy, and to a lesser extent for getting rid of excretions. Diaphoresis often serves to relieve the kidneys or to supplement their action. Vegetable infusions which cause diuresis

will usually cause diaphoresis at the same time if the patient is kept warm and measures are taken to increase the blood supply of the surface (rubbing, mustard, etc.).

For the arrest of "colds" nearly anything causing sweating seems to be effective, but the powder of ipecac and opium mentioned in Chapter II enjoys a particular reputation.

PULVIS MORPHINÆ COMPOSITUS.—U. S.—Compound powder of morphin, also known as Tully's powder, containing 1.5 per cent. of morphin and 32 per cent. of camphor, has also been recommended, and is sometimes used, as a diaphoretic, in place of the older and more popular Dover's powder.

Average dose: 0.5 gm. (7 grains).

Potassium citrate, referred to as a diuretic, is much used for its diaphoretic effect, particularly in the form of:

LIQUOR POTASSII CITRATIS.—U. S.—This is a water solution of potassium citrate, containing about 8 per cent. of anhydrous potassium citrate.

Average dose: 15 c.c. (4 fluidrachms).

SPIRITUS ÆTHERIS NITROSI.—U. S.—Sweet spirits of niter. This is a very generally popular diaphoretic which is also used as a diuretic in fevers.

Average dose: 2 c.c. (30 minims).

LIQUOR AMMONII ACETATIS.—U. S.—The old-time spirit of Mindererus.

Average dose: 15 c.c. (4 fluidrachms).

Pilocarpus.

The only official drugs which have diaphoresis as their predominant therapeutic action are *pilocarpus* and its alkaloid, *pilocarpin*. They are both too well known to require very extended notice in this place.

PILOCARPUS.—U. S.—*Pilocarpus* or *jaborandi* leaves contain, by assay, not less than 0.5 per cent. of alkaloids.

Average dose: 2 gm. (30 grains), given occasionally in the form of a 5 per cent. infusion, made according to the official general formula for that class of preparations.

FLUIDEXTRACTUM *PILOCARPI*.—U. S.—This is made with diluted alcohol and contains 0.4 per cent. of the alkaloids from *pilocarpus*.

Average dose: 2 c.c. (30 minims).

PILOCARPINÆ HYDROCHLORIDUM.—U. S., and *PILOCARPINÆ NITRAS*.—U. S., are therapeutically identical. They are both very soluble in water.

Average dose of either: 0.01 gm. (1/60 grain).

Clinical Report

A CASE OF CARCINOMA OF THE PANCREAS.

WITH NEGATIVE SO-CALLED PANCREATIC REACTION;

CHOLECYSTENTEROSTOMY.

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In a series of 53,000 cases of carcinoma collected from European institutions, in which careful postmortem records are kept, there were 226 cases of carcinoma of the pancreas, or 4.2 cases in every 1,000 cases of carcinoma of all organs. In the following case, in spite of repeated trials and a positive diagnosis, the so-called pancreatic reaction of Cammidge was negative. In the course of an exploratory laparotomy cholecystenterostomy was performed to relieve distress from absorption of bile and pain due to pressure of distention of the bile tract and accomplished the purpose.

Patient.—D. A., farmer, 58 years old, married, born in England, residence Bloomington, Wis., was referred to me June 26, 1905, by Dr. J. M. Lewis of the same place.

Family History.—Negative, except that his father died of "stomach trouble."

Previous History.—In this the only conspicuous features are sciatic rheumatism, so-called, from time to time for several years and previous to ten years ago, excessive use of alcohol. Patient denies venereal disease.

Present Illness.—This seems to date back two and one-half years to an accident whereby he was thrown from a wagon and struck on back of neck and small of back. Following the accident and lasting for two months there was paralysis of both upper extremities. This cleared up spontaneously. The bowels, previously naturally regular, have not moved since without the aid of drugs, and this condition has been getting progressively worse. His best weight five and one-half years ago was 200 pounds and at the time of accident was 175. Whereas patient dates the beginning of his illness with the occurrence of the accident, his present condition probably really began to manifest itself in December, 1904. At this time patient weighed 170 pounds, and since then his weight has progressively fallen to 130. With this rapid decline in weight his strength, too, began to fail and has kept pace with the loss of weight. Accompanying the constipation which followed the accident indigestion began, but it was not until December, 1904, that this became more than ordinarily marked. In March, 1905, dyspeptic symptoms became pronounced. These consisted of loss of appetite, especially for meats; distress after eating, with belching, water brash and nausea. In April, 1905, pain began in the right upper quadrant of the abdomen, extending downward on the right side of the abdomen, around the lower ribs on the right side to the back and across the upper half of the abdomen. The character of the pain varied from a dull ache, which was almost constant, to severe paroxysms of acute pain. The pain was remarked to be worse at night. Further, the pain was aggravated by constipation and relieved by catharsis. At this time patient detected a lump in the upper right quadrant of the abdomen. Early in May bronzing of the skin set in. Toward the end of May, without regard to pain, vomiting began. This occurred especially after meals and also before breakfast. For the last two weeks patient has vomited in the evening what was eaten during the day. One week ago jaundice set in insidiously and has become rapidly and progressively deeper. Considering the amount of food eaten, the stools were noticeably bulky and contained undigested food particles. Fat in the stools was not remarked, and there has been no diarrhea. Since the jaundice set in the stools are lighter in color and the patient has felt weaker. The bronzing of the skin has also been obscured by the jaundice. The patient was alarmed about his condition by the pain and the onset of jaundice.

Examination.—The patient was a man of six feet or more, well developed but poorly nourished. The skin and conjunctive were deeply pigmented with bile, but no subcutaneous hemorrhages were made out. The history of the accident was borne out by a well-marked kyphosis in the mid-cervical region. Here, instead of a convexity forward, there was a convexity backward of the fourth, fifth and sixth cervical vertebrae. The thorax was negative. Bilateral inguinal, and saphenous, and right supra-clavicular lymphatic glands were moderately enlarged, firm, smooth, movable, discrete and not tender. Knee jerks were present, but feeble. There was no edema of the ankles. Per rectum prostate and adnexa were negative, as also were the external genitals. Pulse was 72, temperature 99 and respiration 20. The abdomen on inspection revealed the light and shadow of a mass in the upper half of the abdomen. Pulsation over the mass was visible. On palpation a large, smooth, firm mass, nodular on a large scale, was made out extending across the abdomen almost from rib to rib, the lower border being on a level with the umbilicus. The mass was but slightly movable and tender on deep pressure only. Immediately around and behind the umbilicus deep resistance was made out merging above with that of the mass mentioned. The mass measured roughly seven inches across by three inches vertically. It was greater in the antero-posterior and vertical planes on the right side of the median line. Pulsation of the mass was marked. Above the mass there was an area of resonance filling the epigastrium and extending particularly to the left behind the ribs. On the right the outline of the mass was less distinctly followed along the costal margin down-

ward. The liver dullness extended from the fifth rib to one finger's breadth below the costal margin in the mammillary line. Opposite the ninth rib, beneath the liver, could be indistinctly felt a large, smooth, rounded mass about the size of a small orange, fading away above and to the left into the larger mass. This evidently represented the gall bladder. On bimanual palpation the right kidney was found negative, likewise the spleen. No ascites was made out. On dilatation of the stomach with air resonance was found over the epigastrium extending upward behind the xyphoid cartilage and well to the left behind the ribs. Below this area of resonance the mass remained immovable and unaffected by respiration and manipulation. At the same time the tumor mass seemed to be near the anterior abdominal wall, dividing the cavity into upper and lower sections, the upper having the stomach resonance and the lower that of the colon and small intestines. The floor of the upper section on deep palpation seemed to have a shelving surface, with the dilated stomach more superficial than the mass.

Fluid dilatation showed the stomach capacity to be forty-six ounces. After a test meal of toast and tea the stomach contents gave a negative reaction to litmus, no free HCl., and a positive reaction to lactic acid. With air dilatation the stomach orifices leaked perceptibly. Urinalysis gave sp. gr. 1.007, faintly acid reaction, slightest possible trace albumin. no sugar, bile present, indeterminate sediment, and negative so-called pancreatic reaction.

The patient was told frankly that in all probability he had a malignant growth, that it was either in the stomach or in the pancreas, that an operation would probably be of no permanent and perhaps of no temporary benefit, but that an exploratory opening of the abdominal cavity would settle the diagnosis and might suggest an operation for relief of some of the symptoms. With this understanding the patient requested the operation, and asked to have done whatever was indicated in the premises.

Operation.—Accordingly the abdomen was opened June 28 by an incision through the right rectus near the median line above the umbilicus. The stomach was found normal, but pushed upward by the mass. The pylorus was normal. The colon and omentum were found normal. These were brought out of the wound, revealing the enlarged pancreas stretching across the posterior wall and extending well to the left of the spinal column. The gland was greatly enlarged, especially on the right, hard and nodular. On the surface of the mesocolon and adjacent coils of intestines were numerous small, pearly, opaque, hard, nodules, irregular in size and shape. These with the enlarged retroperitoneal lymphatics accounted for the deep resistance on palpation about the umbilicus. Specimens of these nodules were removed and proved on histologic examination to be medullary carcinoma. To the right the gall-bladder was found distended to the size of the bulb of a three-ounce ear syringe. It was soft, but not easily compressible. The cystic, hepatic and common ducts were distended to the size of the little finger. No stones were made out. The head of the pancreas was greatly enlarged, and a process of the gland surrounded the junction of the common duct and duodenum. This process passing around to the right from behind the duodenum almost reached the main body of the head on the left and constricted the lumen of the duodenum.

Realizing that the situation was hopeless for cure and that the common bile duct was completely occluded, while the lumen of the duodenum was only constricted and would probably remain patent till death from intoxication and starvation occurred, I concluded to do cholecystenterostomy. This was done with a Murphy button at the hepatic flexure of the colon. Patient rallied from operation well. His pain, he said, was much less, and by the third or fourth day jaundice had practically disappeared. His appetite began then to improve and his mind became more active.

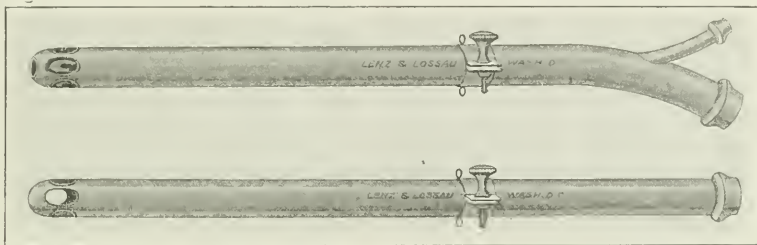
Subsequent History.—He returned home the twelfth day after operation, relieved of the jaundice and much of his pain. He is reported to have died August 13 and to have suffered severe pain the last few days. During the time after operation pancreatin was administered after eating with benefit to digestion.

In view of the reliance placed on the so-called pancreatic reaction of Cammidge¹ by Robson² undue weight was given to the negative result before operation in the diagnosis. This feature and the greater frequency of carcinoma ventriculi seemed to favor, on the doctrine of chances, cancer of the stomach with adhesions and extensions involving the common bile duct and immobilizing the mass. After the diagnosis became established further tests were performed before and after jaundice disappeared. All the tests were uniformly negative, in spite of care in following the author's directions and the use of reliable reagents. Instead of the characteristic crystals a brownish amorphous deposit was obtained. It is not my intention to impeach the value of the reaction, but rather to enter a plea for more light on the subject to the end that the reaction which Robson has found of signal value in this difficult class of cases may be made susceptible of general application.

Cholecystenterostomy has been held by many to be a questionable procedure in this class of cases, offering but slight benefit at the expense of some hazard and the usual discomfort following the operation. In the case in question the toxic symptoms of bile absorption and much of the pain—a large share of which seemed to be due to pressure from the distended bile tract—were

come plugged, thereby necessitating the removal of the tubes with the sutures and packing from the perineal wound, led me to experiment with metallic tubes, resulting in the instrument described below, which in my hands has proved very satisfactory. The tube for continuous irrigation is 12.5 cm. long, the size of a No. 32 French catheter. It is composed of a larger tube into which a smaller one is incorporated. At the vesical end are two openings, the larger being the outflow, the smaller the inflow. At the distal end the tube diverges, the larger one being attached to a drainage tube that is carried to a bucket under the bed; the smaller for the attachment of the tube from a fountain syringe, which is suspended two or three feet above the patient. After the tube is inserted it is held in place by a movable steel collar, controlled by a thumbscrew. Attached to the sides of the collar are two small rings, through which are passed the retention sutures from the perineal wound. By loosening the thumbscrew the tube can either be pushed farther in or drawn out without disturbing the dressings. If the tube becomes occluded it is very easy to remove it through the collar and replace it again in the bladder without disturbing the packing in the perineal wound. Until this instrument was devised I used two catheters stitched together, as advised by Dr. Young of Baltimore.

If the bladder is badly infected the irrigations are kept up for four or five days, or even longer; if not infected the continuous irrigation is stopped as soon as the fluid from the bladder comes away free of blood.



relieved. In view of the comparatively slight post-operative reaction the patient stated, on having the question put squarely to him, that he considered it worth the discomfort to obtain a definite diagnosis and be relieved of the worst of his suffering as long as might be.

New Instrument

METALLIC TUBES FOR CONTINUOUS IRRIGATION AFTER PROSTATECTOMY AND FOR DRAINAGE AFTER PERINEAL SECTION.*

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The difficulty often encountered in introducing the rubber tube after perineal prostatectomy, especially if the prostatic urethra is injured, as well as the tendency of the tube to be-

come plugged, thereby necessitating the removal of the tubes with the sutures and packing from the perineal wound, led me to experiment with metallic tubes, resulting in the instrument described below, which in my hands has proved very satisfactory. The tube for continuous irrigation is 12.5 cm. long, the size of a No. 32 French catheter. It is composed of a larger tube into which a smaller one is incorporated. At the vesical end are two openings, the larger being the outflow, the smaller the inflow. At the distal end the tube diverges, the larger one being attached to a drainage tube that is carried to a bucket under the bed; the smaller for the attachment of the tube from a fountain syringe, which is suspended two or three feet above the patient. After the tube is inserted it is held in place by a movable steel collar, controlled by a thumbscrew. Attached to the sides of the collar are two small rings, through which are passed the retention sutures from the perineal wound. By loosening the thumbscrew the tube can either be pushed farther in or drawn out without disturbing the dressings. If the tube becomes occluded it is very easy to remove it through the collar and replace it again in the bladder without disturbing the packing in the perineal wound. Until this instrument was devised I used two catheters stitched together, as advised by Dr. Young of Baltimore.

The advantages of continuous irrigation in these cases are: 1. The coagulation of the blood from any hemorrhage that may take place in the bladder and occlude the tube, as occurs in a tube without continuous irrigation, rarely occurs. 2. The liability to sepsis is lessened. 3. The patient is comfortable and does not have to be disturbed by irrigations.

The instrument for perineal drainage, where continuous irrigation is not indicated, consists of a tube 12.5 cm. long, the size of a 30 French catheter, with four openings in the vesical end (Fig. 1). The distal end has a shoulder to hold the rubber tube, which passes into the drainage vessel. The tube is held in the perineal wound by the collar as described in the instrument for continuous irrigation. The drainage through this tube is excellent, as the caliber is large and easily cleaned by irrigation.

My experience with both these tubes covers a number of cases in all of which the results were more satisfactory than with any other form of drainage tubes which I have used.

1725 N Street N. W.

1. Abstract of the Arris and Gale lecture on the "Chemistry of the Urine in Diseases of the Pancreas," by P. J. Cammidge, *British Med. Jour.*, April 2, 1904. Also "Surgical Aspect of Digestive Disorders," p. 287, by J. G. Mumford and A. K. Stone.
2. "The Hunterian Lectures on the Pathology and Surgery of Certain Diseases of the Pancreas," by A. W. Mayo Robson, *Lancet*, March 19 and 26, April 2, 1904. Also "Diseases of the Pancreas," by A. W. Mayo Robson and B. G. A. Moynihan. "Diseases of the Pancreas," by L. Osler, edited by R. H. Fitz in *Nothnagel's Encyclopaedia*.

*Presented before the Medical Society of the District of Columbia, 1905.

Opium in Australia.—The various Australian states having agreed to prohibit the sale and growth of opium, the government of the commonwealth has prohibited the importation of opium except for medicinal purposes. All the states will lose revenue by the prohibition, the loss to Queensland alone, it is said, being estimated at \$80,000 yearly.

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THE ETIOLOGY OF GALLSTONES.

The activity in bacteriologic investigation which characterized the eighties of the last century led to numerous discoveries and numerous mistakes. Diseases which by analogy ought to have been bacterial were stated to be due to organisms which were afterward shown to be contaminations, and, on the other hand, diseases which at first sight seemed far removed from bacterial action were shown to be intimately associated with micro-organisms. Among the conditions which were investigated at this time were those associated with the formation of salivary calculi, and Galippe, who cultivated bacteria from these concretions, not only assumed a causal relation between the germs and the calculi, but predicted that other forms of calculi would be shown to be of bacterial origin.

So far as the bacterial origin of gallstones is concerned, it was Naunyn who first gave his unreserved support to this view of their origin. The view was not, however, generally accepted, for some observers took the ground that the presence of gallstones favored biliary infection and denied that the infection was the primary process and responsible for the formation of gallstones. The mere presence of bacteria, even in the interior of gallstones, was clearly not proof that the bacteria caused the stones, and it became more and more obvious that the matter could only be cleared up by the experimental method. The early experiments were many of them unsuccessful, though Gilbert and Fournier obtained an experimental stone in a dog as early as 1897. Since then a large number of studies have been made, mainly by the French school, and in a considerable number of instances experimental gallstones have been produced.

The rôle played by various factors in the stone formation has been recently reviewed by Lartigau¹ in a valuable paper, in which he also records the result of a large series of personal experiments. The main opponents of the bacterial theory of gallstones have maintained that the process of their formation was mechanical and due to the presence in the gall bladder of foreign material. Various studies, including those of Lartigau, have shown that the mere presence of an aseptic foreign body does not suffice to produce gallstones. The introduction of pieces of cotton, fragments of human calculi, grains of wheat and other irritating substances

does not lead to calculus formation even when the outflow of bile is partially obstructed. On the other hand, the introduction of bacteria associated with mechanical irritation of the mucosa is followed in a considerable percentage of cases by the formation of stones. If at the time that bacteria are introduced the outflow of the bile is interfered with, or aseptic foreign bodies are also put into the gall bladder, the chances of stone formation become much greater. Thus of nine rabbits inoculated by Lartigau in which the outflow of bile was partly obstructed when the bacteria were introduced eight developed stones, and almost as high a percentage of successes resulted from the introduction of foreign bodies with the bacteria.

The mode of action of bacteria in producing gallstones is still obscure. The chronic cholecystitis which they produce is associated with desquamation of epithelium, and this in turn favors the formation of cholesterolin and bilirubin-calcium. In many instances, however, this cholecystitis is not followed by the formation of stones, and some other factor must be present. It is probable that in some cases, as Cushing suggested, clumping of the bacteria may be an important preliminary step, the clumped bacteria acting as nuclei for the stones.

The point of entrance of the bacteria into the gall bladder has, until recent date, been usually regarded as the common duct. It seems natural to assume that with a relatively large channel directly connecting the gall bladder and the intestines this should serve as a carrier of bacteria. It is probable that in many instances the infection takes this route, though the importance of ascending infection at most has certainly been overestimated. The fact that in many instances gall bladder infections are due to bacteria not usually found in the duodenum is against ascending infection, and there is positive experimental evidence that bacteria introduced into the general or portal circulation may be recovered from the gall bladder; indeed, some organisms persist there when they have long disappeared from other parts of the body. Of course, there are many instances in which individuals with gallstones give no history indicating that they have ever had a general or even a severe intestinal infection, but these cases may be explained by Adami's theory of latent infection, according to which even healthy intestines allow the passage of bacteria into the portal circulation and thence into the gall bladder.

SOME FALLACIES OF VITAL STATISTICS.

The bewilderments that lie in the path of the wanderer in the field of statistics have long served to edge the point of the jest that statistics can be made to prove anything. One witty essayist, in an article on "How to Know the Fallacies," thus delivers himself regarding the care necessary for raising these thrifty plants: "Statistics are recommended for a mulch. By covering a bed of fallacies with a heavy mulch of miscellaneous sta-

¹ Cal. State Jour. of Med., January, 1906.

tistical matter it is protected from the early frosts and the later drought. The ground of the argument is kept thus in a good condition. No particular care is here needed in the application of statistics; any man who can handle a pitchfork can do all that is required. I have seen astonishing results obtained in this way. No one need be deterred by the consideration of expense. In these days statistics are so cheap that they are within the reach of all. If you do not care to use the material freely distributed by the government you can easily collect a sufficient amount for yourself." Nowhere, perhaps, do fallacies spring up more abundantly and mistaken inferences flourish more rankly than when mulched with vital statistics. Inaccuracies in the collection of facts and misjudgments in the interpretation of those facts are not always easily detected, but may serve to vitiate many far-reaching conclusions and to cast doubt on not a few cherished doctrines.

Consider, for example, the use often made of the "death rate" of a community in basing comparisons of relative healthfulness and in furnishing a text for pæans on sanitary progress. How much do we really know about it all? An elaborate analysis of the available data is not necessary to reveal the presence of difficulties. In the first place it has been often pointed out that the mere ratio of deaths to the total population can have little significance, since the ratio is obviously and profoundly affected by the number of persons of different ages in the population and by the proportion of the sexes. If this be so, of how much less value must be any conclusion as to the healthfulness of a population drawn from the mean age at death? Such information as most American communities possess concerning the age distribution of their population is derived solely from the returns of the decennial census and is doubtless of varying value, not only at different times, but in different places. Even in this apparently simple matter it does not seem to be easy to obtain accurate figures, and the precise age distribution of most American city populations is far too largely a subject of conjecture. Assuming, however, that it is possible to substitute for the "crude death rate" one corrected for age and sex distribution, obstacles immediately arise to prevent us from accepting the corrected rate as a measure of sanitary well-being. The varying preponderance of certain nationalities, as Irish, Italian, Scandinavian and Slav, in urban populations is one of the factors that undoubtedly affects death rates entirely apart from any wholesomeness of environment or efficiency of sanitary organization. At present the influence of race on death rate can not be evaluated in any precise fashion.

Another factor that will occur to many physicians is the influence that birth rate must have on death rate. A steadily declining birth rate is in itself sufficient to produce a declining death rate, and unless the facts in regard to the birth rate are known it is impossible to interpret correctly a decline in the death rate, or even in some cases to compare the corrected death rates to dif-

ferent localities. Now, it is a notorious fact that except in certain limited districts in this country, births are reported very irregularly and incompletely and data as to birth rate for any considerable number of years are lacking. There is, of course, reason to believe that even in those parts of the United States where no full record exists the birth rate has declined in the last few decades in common with the decline that has occurred in other parts of the civilized world. How, then, disentangle a reduction in a city death rate due to diminishing births, to change in character and amount of immigration and like factors, from a reduction due to the enforcement of sanitary regulations or to improvement in conditions in life? The problem is extraordinarily complex. We need first of all much fuller and more accurate data. Until these are secured a certain hesitancy, or, indeed, an ultra-conservatism, in drawing conclusions will perhaps best commend our discretion to posterity.

MEDICAL SUBJECTS ON THE STAGE.

Medical subjects on the stage was the theme of an inaugural thesis by J. Descout of Paris. In commenting on it, the *Semaine Médicale*, December 6, quotes the long final summary entire and states that the stage offers a powerful means of producing a profound impression on the public. Rich and poor attend the theaters and absorb ideas there which would never reach them if presented in any other form. Physicians have tried to educate the public in certain medical matters by published articles, by lectures, etc., but books are expensive, and lectures reach but a limited audience. The masses are not reached, and the zeal and activity of the medical apostles are wasted in great measure. This is why the results obtained by dramatists who have taken up this new line of presenting medical subjects have been so striking.

Descout reviews the various plays which have been staged in late years bearing on medical topics, and studies the influence exerted by them. He remarks that such plays as *Camille*, *l'Aiglon*, etc., only refer incidentally to disease to render their characters more interesting, but Ibsen's works, illustrating the influence of heredity, are written with incomparable art, both from the scientific and from the dramatic point of view. "Henriot" is the pseudonym of one of the members of the Paris faculty of medicine, and his play of "Enquête" portrays an epileptic of the masked and criminal variety. The dramatic art of this fine piece is equal to its scientific precision. In the play of "*La Nouvelle Idole*," de Curel debates whether or not a physician has the right to experiment on a living human subject and whether a scientist should or should not be at liberty to use hypnotism. "*Baillon*," by Le Senne and Mayer, turns on the false and painful situations in which physicians are frequently placed by strict observation of professional secrecy. These medico-psychologic plays differ from the medico-social dramas of Brieux and

Bruyere. These writers took up purely medical subjects, not merely medico-literary or medico-ethical questions. Social hygiene, professional and private, was presented on the stage in a form calculated to impress the crowds, calling attention to deplorable conditions and starting an impulse for their reform. Brieux portrayed in his "Avariés"—the "Damaged"—the havoc wrought by syphilis in families, and in his "Remplaçantes" the danger for the nurse of a syphilitic infant. He took great pains to have the scientific part of his plays correct, and cites his medical authorities in his published work.

The question whether or not such subjects do more harm than good on the stage is answered by Descoust decidedly in favor of the benefits to be derived from such a propaganda. Following Brieux's plays police regulations were enacted for the better protection of wet-nurses, and several special crèches for syphilitic children were founded by private charity. Following his play of "Maternité," associations were organized to enable women to be delivered in their homes. The organization of the Society for Sanitary and Moral Prophylaxis is also ascribed in large part to the influence of Brieux's "Avariés." The société has recently arranged a special dispensary service for syphilitics evenings and Sunday mornings, so that these unfortunates can have regular treatment which will not encroach on their working hours. Bruyere's play "En Paix" was suggested by the incarceration in an asylum of a pseudo-insane friend. The play resulted in his liberation and a reform in the law on the subject is now under consideration.

The argument has been raised that medical subjects on the stage are an offense against public morality. Descoust asserts, however, that it can do no harm to recite what it is regarded as useful to write. In conclusion, he reiterates that the stage is a powerful means for the diffusion of ideas and a useful aid in a propaganda of enlightenment. In a fine play the spectator takes in the lesson without noticing that it is a lesson, and without weariness; and the impressions which he receives are engraved on his mind, not only by what he hears, but what he sees.

BRAIN WEIGHT IN REGARD TO MENTAL CAPACITY.

Brain weight may be said to be a subject of merely academic interest, possessing little or no practical significance. The numerous investigators who have delved into the matter, although not agreed on all points, are more or less agreed that weight of brain does not endow its possessor with superior mental faculties. Dr. Bernard Hollander, in a paper read at a conversazione of the British Ethnological Society, stated that while the average female brain is not only one inch less in circumference than the male brain and about five ounces lighter in weight, these facts do not denote even comparative "light-headedness," because the size of the entire brain

is not a measure of intellectual capacity, but is a measure of capacity of all the energies taken together. The portions in which the difference between the male and female brains is more marked are those that have to do with force, energy and animal passion, all of which women possess in a less degree than men. On the other hand, those portions which are concerned with the manifestations of the feelings and emotions are more strongly developed. In short, the lesser average weight of a woman's brain does not imply that she is inferior in intellect to man. Woman, however, possesses a dissimilar mental capacity to that of man, but whether this be due to the brain or to other causes can not be stated definitely.

That brain weight has little influence on mental capacity, however, has been proved times without number. The old belief that men of real brain power had brains of great weight has been somewhat rudely overthrown of late years.

In the *Journal of the Scientific Society of Saxony*¹ Dr. F. Marchand had an article on brain weights. He weighed 1,334 brains, as a rule, immediately after their removal from the body and while still enclosed in the dura mater. His results were briefly as follows: The mean weight of brain in the male between the ages of 15 and 80 years was 1,400 grams and in the female 1,275 grams. In 84 per cent. of all adult males between the ages of 15 and 80 years the brain weighed between 1,250 and 1,350 grams. About 50 per cent. of the brains examined weighed from 1,300 to 1,450 grams; 30 per cent. weighed over 1,450 grams, and only 20 per cent. weighed under 1,300 grams. As to women's brains, 91 per cent. of all the adults had a brain weight of between 1,100 and 1,450 grams, 35 per cent. weighed 1,200 to 1,350 grams, 20 per cent. over 1,350 grams, and 25 per cent. below 1200 grams. It was ascertained by the investigator that the brain weight at birth doubled in the course of the first nine months of life and trebled before the expiration of the third year. From this date the increase was much slower in females than in males. The brain of the male reached its definite or ultimate weight at about the nineteenth or twentieth year and in females from the sixteenth to the eighteenth year. The decrease in the mean weight of the brain due to the supervention of senile atrophy occurs in males in the course of the eighth decade, in females in the seventh, though, of course, great individual differences are observable. In adults there is no constant relation between body weight and brain weight, still the mean weight of the brain in males of short stature is somewhat less than in those of average height, and the same holds good for women under the average height. The smaller size of the brain in women, however, is not dependent on the lower stature, for the mean weight of the brain in women is without exception smaller than that of males of equal height.

The above are the conclusions arrived at by an earnest

1. Vol. xxvii, p. 329.

and scientific student, and in the main, perhaps, are in unison with the views of those who have made a special study of this particular form of research. Objection may be made to the statement that the brains of women are more subject to deterioration from the inroads of age than the brains of men under similar conditions. Dr. Sims,² in an article dealing with brain weight and mental capacity, cited numerous instances in which the brains of celebrated men had been found to be of lesser weight than those of idiots and of ordinary individuals. The brain of Turgenieff, the Russian novelist, was exceptionally heavy, but was considerably exceeded in weight by that of an ignorant and unknown workman. Gambetta possessed an especially light brain, less in weight than that of the average child. Daniel Webster, Napoleon, Byron and Agassiz had brains whose weight did not surpass those of the ordinary man in the street. On the other hand, idiots and imbeciles have frequently extremely heavy brains.

Dr. Sims was of the opinion that, as a rule, larger brains appertain to natives of colder climates.

It would seem, then, that it has been proved, if not with absolute exactitude, at least with sufficient data to support the contention in a satisfactory manner, that heavy brains are no criterion of an individual's intellectual powers, and, further, that the lesser weight of women's brains does not imply mental inferiority in the female sex. It is not the weight of the brain that counts, but the quality, and whence is derived the quality is a moot point.

THE RAY OF LIFE FRAUD.

The downfall of a rank nostrum in New York City has created considerable sensation there because of the large number of persons who were easily duped by the ridiculous claims of the wily exploiters. The Force of Life Chemical Company maintained elaborate offices on Broadway for a number of years, and by alluring advertisements secured the patronage of thousands of people. They loaned "Life Ray Capsules" to patients who signed agreements to take good care of the capsules and to return them to the company. When the post-office authorities, at the instigation of the New York County Medical Society, began to investigate the fraud they doubted the ability of the company to send out so many capsules containing radium because of the cost of this substance, and an investigation showed that the capsules contained only a cheap phosphorescent powder. The business was therefore stopped. The patients had been told by the company: "Hold a capsule near a glass of water for two minutes, drink the water and you have one of the most efficient remedies for nervousness, hysteria, melancholy, dyspepsia and general run-down conditions." Other medical advice given patients was to insulate their beds with glass castors, to use onion poultices, to tie ham rind thickly peppered and wrapped in cheese-cloth over their kidneys, etc. The concern received thousands of samples of blood

from patients, and the postoffice inspector reports that these were destroyed by the colored janitor without examination or analysis, the diagnoses being made by two young women who were drawing \$8.00 a week. The *New York Times*, in commenting on this swindle, says: "Indignation is wasted on the inventors and active workers of the grotesquely obvious swindle. What they did ranks, so far as intelligence and courage go, with stealing doormats or running a policy game." "The real horror of the case lies in the fact that, in this day and land, thousands of men and women can be caught and robbed with no better bait. If one did not know of the fortunes made in similar ways by the exploiters of pseudo-mysticism ranging from voodoo charms down to Eddyite theology, and by the innumerable quacks who live by selling for more dollars than they cost cents the familiar simples that form the quack's only and sufficient stock in trade, it would be possible to be astonished by the long and large success of this silly fraud. But one does know these things, and one can not be astonished at a thing that has been happening every day much longer than anybody can remember. The only possibility is to feel a deep humiliation and fierce disgust that our common schools have done so little for us that a shamefully large minority of the American people are so easily gulled as ever were naked savages, and that no assertion of ability to 'heal' can be so absurd that they will not believe it or pay for its pretended exercise." "The County Medical Society, many as have been its services by hunting down quacks, never did anything better in this line than when it dragged the names of these 'respectable' men into the light of public scorn." The public needs language of this kind straight from the shoulder, but how seldom do they get it! This fraud is gone, but hundreds of others are still in active operation and the public is still ready and anxious to take the bait.

ANESTHESIA VERSUS HOMICIDE BY NEGLECT.

There seems to be a confusion in the minds of some as to the real position of the medical profession regarding the relief of pain in incurable disease. A Catholic bishop recently wrote a letter to an eastern paper deprecating not only the proposition advocated by Professor Norton and others, but, furthermore, denouncing the production of insensibility by anesthetics in severe painful disease and, by inference at least, charging the medical profession with practically anticipating, and perhaps hastening, death by benumbing consciousness and feeling. He is not aware of the fact apparently that excessive pain is itself an exhaustive factor, and a certain degree of analgesia, artificially produced, is often a life-saving measure. Even if it does not save life it prolongs it. Moreover, in incurable disease attended with severe nervous symptoms, painful convulsions, etc., such as tetanus and hydrophobia, it is often the very best treatment, and the physician who hesitates to employ it takes the responsibility of possibly hastening death. There is no spiritual value to unendurable sufferings which themselves engross the attention to the exclusion of all other things for the time being, and such may easily be the case in many disorders. Suffering is not in itself a blessing and does not always serve any

2. Popular Science Monthly, December, 1898.

moral utility. The argument was well answered many years ago at the time of the introduction of anesthesia and it is a little surprising to see it revived now. We do not believe that the bishop himself would justify the withholding by the physician of the remedies that will inhibit the often fatal convulsions of lockjaw or rabies, even if they do benumb or abolish consciousness. Certainly not if he appreciated conditions, nor could he well justify the shortening of human life by their neglect.

A WELCOME CORRECTION.

Mrs. Maud Ballington Booth, who has been quoted with the reprehensible Hall-Norton-Crosier coterie as advocating the painless homicide of assumedly hopeless sufferers, has written to a New York paper denying that she ever expressed the opinion that the incurably sick or injured should be put out of existence. Perhaps the statement was started by some of the advocates of legalizing of homicide, who in their zeal for their cause were not too scrupulous as to the arguments or facts they adduced. The denial is eminently satisfactory, for many were pained by the allegation that anyone so prominent in good work should be so morally and mentally out of gear as to support the proposition. These morbid dreads of pain will have to go farther and fare worse in their search for sympathizers.

Medical News

CALIFORNIA.

Long Beach Medical Society.—At its annual meeting Dr. Homer O. Bates was elected president of this society; Dr. Joseph M. Holden, secretary, and Dr. W. W. Harriman Jones, councilor.

Sanatorium Sold.—The Loma Linda Sanatorium, which was purchased several years ago by a number of physicians of Los Angeles, has not proved profitable and the hospital has been sold to the Adventists, who will continue the work.

Fire Damage.—By a fire in the Douglass Building, Los Angeles, January 11, Dr. Ralph Williams sustained a loss of \$1,500, and the offices of Drs. David B. Thornton, Charles D. Lockwood and Frank S. Dillingham were seriously damaged by fire, smoke and water.

Measles Epidemic.—The large number of cases of measles and whooping cough in Alameda in December has caused the board of health to take unusual precautions to stamp out these diseases. The classrooms in the schools where measles and whooping cough are most prevalent have been thoroughly fumigated by order of the board of health.

New Health Officers.—Dr. William E. Gibbons has been elected president, and Dr. W. M. S. Bebee, vice-president, of the Stockton Board of Health, and Dr. S. Walter R. Langdon, city health officer.—Dr. Maurice W. Brown has been appointed a member of the Alameda Board of Health, vice Dr. William A. Brooke, retired.—Dr. Louis G. Thompson has been appointed a member of the Gridley Board of Health.—Dr. J. S. A. Cabral, Centerville, has been appointed health officer of Alameda County, vice Dr. George F. Chalmers, Niles, deceased.—Dr. C. E. Stone, Marysville, has been re-elected physician of Yuba County.—Drs. Matthew D. Pratt, Fall River Mills; Adelbert B. Gilliland, Cottonwood, and John H. Soot-hill, Anderson, have been appointed special health officers of Shasta County.

Personal.—Baron K. Takaki, surgeon general of the Imperial Japanese Navy (retired), arrived in San Francisco from Japan, January 12.—Dr. Garrett Newkirk, Pasadena, has been appointed a member of the State Board of Dental Examiners.—Dr. F. A. Combs, Visalia, health officer of Visalia and Tulare County, was knocked down by a bicycle December 23, break-

ing his nose and sustaining other injuries.—Dr. William B. Stephens, San Francisco, for five years a surgeon in the Emergency Hospital, has announced that he will resign.—Dr. Frederick C. Gerlach, San José, who has been seriously ill with typhoid fever, is now convalescent.—Dr. and Mrs. Albert Abrams, San Francisco, have started for Europe.—Dr. George A. Hare, Fresno, will be a delegate for California to the International Medical Congress, Lisbon.

Lane Lectures.—The twenty-fourth annual course of Lane lectures was begun January 12 at Cooper Medical College, San Francisco. The following lectures will be delivered:

January 26: Dr. William Ophüls, "The Prevention of Epidemics."
February 9: Dr. Adolph Barkan: "The Life and Work of Hermann von Helmholtz."

February 23: Prof. F. M. MacFarland, professor of history, Leland Stanford University, "The Organs of Vision in Lower Animals."

March 9: Dr. William Fitch Cheney, "Some Mysteries of Our Mechanism."

March 23: Dr. W. E. Garrey, "A Pair of Eyes."

April 6: Dr. Thomas W. Huntington, "The Academic Hospital: Its Purpose and Ideals."

April 20: Dr. George B. Somers, "Physiognomy."

May 4: Dr. G. M. W. Lehmann, "Use and Abuse of X-Rays."

May 18: Dr. Albion W. Hewlett, "The History of Some Famous Nostrums."

ILLINOIS.

Hospital Sold.—To satisfy claims of creditors St. Joseph's Hospital, Paris, has been ordered to be sold. The claims against the institution amount to about \$10,000.

Epidemic Disease.—At McLean, the prevalence of diphtheria has resulted in the prohibition of public gatherings and the enforcement of quarantine.—Scarlet fever is reported to be epidemic on the Galena road, north of Peoria.—Spring Valley schools have reopened after several weeks' closure on account of smallpox.

Personal.—Dr. J. Sheldon Clark, Freeport, has been appointed interne in the Illinois Asylum for the Incurable Insane, Bartonville, Chicago.—Dr. Thomas H. Wagner, Joliet, has been appointed a member of the surgical staff of the Rock Island System.—Dr. Jefferson R. Hobart, Ashmore, had a second cerebral hemorrhage, January 1, and is critically ill.—Dr. Lewis D. Dunn, Moline, after a protracted illness, has recovered sufficiently to resume practice.

Objects to Dunning Incurables.—Dr. George A. Zeller, superintendent of the Illinois Asylum for the Incurable Insane, Bartonville, has registered a vigorous protest with the State Board of Charities, claiming that filthy and dangerous patients are being sent there from Cook County in large numbers. Dr. Vaclav A. Podstata, superintendent of the Cook County Institutions, acknowledges that he has sent such patients to Bartonville, but in doing so has followed the provisions of the law. He says that there is no justification for the complaint.

Examination for State Hospital Positions.—The State Civil Service Commission announces that some time in February an examination will be held for assistant physicians in the state hospitals for the insane. This examination will be open to physicians between the ages of 25 and 35, and will include surgery, medicine and nervous and mental diseases. The weights given to subjects will be: Experience, 30, and technical knowledge, 70. For further information address Joseph C. Mason, secretary and chief examiner, room 808, 218 La Salle Street, Chicago.

Chicago.

Increases in Deaths.—For the week ended January 20, 29 more deaths were reported than for the preceding week. Of these cancer showed an increase of 12, convulsions an increase of 4, and nervous diseases an increase of 13.

Mortality of the Week.—During the week ended January 20, 611 deaths were reported, equivalent to an annual death rate of 15.55 per 1,000. Chief among causes of death were: Pneumonia, 111 deaths; consumption, 69; Bright's disease, 43; heart disease, 39; violence, 37, and cancer, 36.

To Protect Children from Tuberculosis.—The Board of Education has adopted a report made by Superintendent Cooley and Dr. E. C. Dudley, providing for a medical examination of pupils supposed to be suffering with tuberculosis and giving the superintendent authority to exclude pupils found to have the disease from the schools.

Contagious Diseases.—Serious increases were noted last week in the contagious diseases. Scarlet fever had 100 cases, 8 more than in the previous week, and 79 more than in the corresponding week of 1905. Of diphtheria 117 cases were reported, 41 more than in the previous week and 68 more than for the corresponding week of last year.

Uphold Health Commissioner's Methods.—The committee appointed by the Chicago Medical Society to make a study of the methods and work of the Department of Health in the nomenclature and classification of death causes and the registration of vital statistics, to report defects discovered and to suggest practical remedies therefor, has reported, indorsing the methods and commending the work of the department.

New Hospitals.—The Chicago Lying-in Hospital and Dispensary intends to build a new hospital to cost \$200,000.—Plans are being made for a nurses' dormitory for the Mary Thompson Hospital for Women and Children, to accommodate 31 nurses, and to cost about \$20,000.—Plans have been prepared for the Cribside Pavilion to be built in connection with the Chicago Memorial Hospital, to cost about \$40,000.

MARYLAND.

Fees in Last Illnesses.—A bill has been introduced in the legislature giving physicians the same protection in the collection of fees for professional services in the last illnesses as are now afforded undertakers.

Illegal Practice.—Dr. J. G. Sexton was arrested at Cumberland on the charge of practicing without being registered, and was fined \$10 and costs. He appealed and gave bond.—The grand jury has returned an indictment against Dr. John A. Watson, Frostburg, on the charge of practicing medicine without registration.

Baltimore.

House Fumigation After Tuberculosis.—Dr. Bosley, health commissioner, announces that he will rigidly enforce the state law requiring the fumigation of houses which have been occupied by consumptives before new tenants move in.

Hospital Report.—The Hebrew Hospital reports 301 patients admitted and 7,269 treated in the dispensary. The total expenses were \$32,246, leaving a small balance on hand. Legacies and memorials amounting to \$4,700 were reported.

Tuberculosis Lecture.—Dr. Charles P. Emerson of the Johns Hopkins Hospital lectured to the Bohemians of the city on tuberculosis, January 19, under the auspices of the Maryland Tuberculosis Association. His remarks were translated by interpreters.

MASSACHUSETTS.

Fines of the Year.—Dr. Charles Harrington, secretary of the State Board of Health, reports that the fines paid amounted to \$8,486 last year, distributed as follows: Milk and milk products, \$1,308; other foods, \$6,390; drugs, \$780. He complains that some district judges are unwilling to impose a fine after the conviction.

Boston's Water Supply.—The report of the metropolitan water board of Boston and vicinity shows that the present reservoirs will contain 82,598,830,000 gallons, and a daily supply from all sources of 173,000,000 gallons. This includes the new Wachusett reservoir, completed December 12, with a capacity of more than 63,000,000,000 gallons. Into this the Nashua brings on the average 111,000,000 gallons daily. Plans are already outlined to go further west and get 71,000,000 gallons a day from the Ware River, and possibly a new reservoir to hold the waters of the Swift River, near Enfield. At present the average daily consumption of water in the district is about 115,000,000 gallons.

Study of Smallpox.—At the meeting of the Boston Society of Medical Science, January 16, Dr. Walter R. Brinkerhoff reported the results obtained by the work which he and Dr. E. E. Tyzzer did last year in Manila in the study of smallpox in monkeys. Confirmation of the organism discovered by Dr. Councilman was obtained, the two cycles being distinctly traced. True smallpox could not be obtained in monkeys, however, save by inoculation, when a mild form like varioloid was produced. Successive inoculations from the pustules to a fresh monkey and so on showed the two cycles still preserved, but the power of the virus gradually faded out. Vaccinia, on the other hand, with its single cycle, was as readily produced in monkeys as in man.

MICHIGAN.

New Secretary and Editor.—At the meeting of the council of the Michigan State Medical Society, held in Detroit, January 12, Dr. Andrew P. Biddle refused a re-election and Dr. Benjamin R. Schenck was chosen secretary of the society and editor of the state journal.

Immunity.—Dr. Ludvig Hektoen of Chicago, on invitation of the Wayne County Medical Society, delivered an address on "Immunity in Theory, Practice and Experiment," in Detroit, January 15. The lecture was supplemented by a stere-

opticon demonstration illustrating some of the author's original researches in immunity.

December Mortality.—The total number of deaths for December was 2,683, representing an annual death rate of 12.4 per 1,000 population, as compared with a rate of 12.6 for the preceding month. There were 435 deaths of infants under 1 year of age, 16 deaths of children aged 1 to 4 years inclusive, and 896 deaths of persons aged 65 years and over. Important causes of death were as follows: Tuberculosis, 210; typhoid fever, 54, a marked decrease from the preceding month, which had 93 deaths; diphtheria, 66; scarlet fever, 18; measles, 10; whooping cough, 16; pneumonia, 228, as compared with 187 for the preceding month; diarrheal diseases of infants under 2 years, 36; influenza, 23; cancer, 123, and violence, including accidents, 167. No deaths from smallpox were reported during the month.

State Board Doings.—At the meeting January 12, on suggestion of the secretary, it was decided by the board that hereafter the title of the official organ of the department should be "Public Health, Michigan." All pamphlets and bulletins issued by the department, including the teachers' sanitary bulletins, will be issued under this head, and will be bound in attractive covers and in suitable form to insure preservation. This method has been adopted by reason of the substantial saving in postage that will result, it being estimated that the postage of the department will be reduced fully one-half thereby. The board decided to co-operate with Prof. Delos Fall of Albion College, a former member of the board, in an endeavor to ascertain from the analysis of the uncontaminated spring waters of the state a definite chlorin standard for a pure water, a sum of money being set aside out of the appropriation to defray expense of carrying on this investigation. A committee of the board on public water supplies was appointed, comprising Drs. Vaughan, Sinclair and Shumway, to co-operate with a similar committee from the State Engineering Society and State Medical Society, in an endeavor to secure legislation to invest a commission with power to investigate and advise regarding public water supplies.

NEW YORK.

Erie County Society Election.—At the eighty-fifth annual meeting of the Medical Society of the County of Erie, held in Buffalo, January 9, the following officers were elected: Dr. Albert H. Briggs, president; Dr. Edward Clark, vice-president; Dr. Franklin C. Gram, secretary; Dr. DeWitt C. Greene, treasurer; censors, Drs. Henry R. Hopkins, DeLancey Rochester, Irving W. Potter, John H. Grant, and Francis E. Fronczak; committee on legislation, Drs. Arthur G. Bennett, William C. Krauss and Ernest Wende, and committee on membership, Drs. William Warren Potter, Charles A. Walls and Albert T. Lytle, all of Buffalo.

Centennials of Societies.—The centennial meeting of the Medical Society of the State of New York, to be held in Albany, January 30 and 31, and February 1, will be of unusual interest, as it is the first meeting of the united profession of the state secured in the judicial order of the Supreme Court, December 9, consolidating the two state medical bodies which have existed separately for many years. A history of the first hundred years of the society is being presented. Public addresses will be delivered by Hon. Grover Cleveland, Hon. St. Clair McKelway, the governor of the state, the mayor of Albany, and the president of the society, Dr. Joseph D. Bryant, New York City.—Montgomery County Medical Society celebrated its centennial at its meeting, January 10, at Fonda, where it was entertained by Dr. Frederic I. Jansen.—The centennial of Dutchess County Medical Society was celebrated at Poughkeepsie, January 10. The following officers were elected: Dr. John H. Cotter, Poughkeepsie, president; Dr. D. H. McKenzie, Millbrook, vice-president; Dr. Robert W. Andrews, Poughkeepsie, secretary, and Dr. David B. Ward, Poughkeepsie, treasurer. Dr. Guy C. Bayley, superintendent of Vassar Brothers' Hospital, Poughkeepsie, gave a historical address, in the course of which he read the minutes of the first meeting, held Sept. 20, 1806, and gave brief biographic sketches of past presidents. Dr. Joseph D. Bryant, president of the Medical Society of the State of New York, spoke of the causes which led to separation 24 years ago, and to the amalgamation just consummated. The anniversary banquet was attended by more than 100 guests. Dr. Henry L. Cockingham, Red Hook, presided as toastmaster.

New York City.

Ship's Hospital on Deck.—The new twin-screw steamship *Brazil*, of the Veloce Line, has a pharmacy, operating room and hospital on the upper deck.

Increase in City's Death Rate.—The death rate for the week ended January 13 was equivalent to 19.16 per 1,000, as against 18.77 a year ago. The increase is due to an unusual number of cases of pneumonia, diphtheria and measles.

Sixth Harvey Lecture.—The sixth lecture in the Harvey Society course will be given by Prof. Lewellys F. Barker of Johns Hopkins University, at the New York Academy of Medicine, Jan. 27, 1906, at 8:30 p. m. Subject, "The Neurones."

Croton Dam Completed.—After thirteen years of work and an expenditure of \$8,000,000, the Croton dam has been finished, thereby supplying a new reservoir which is nineteen miles long by two and a half wide, with a capacity of 300,000,000 gallons.

Another Ambulance Collision.—An ambulance belonging to the Lincoln Hospital, while conveying a patient to Harlem Hospital, collided with an express wagon on the Willis Avenue bridge, January 17. The ambulance surgeon and a policeman were thrown out and badly bruised.

Tuberculosis Exhibit Opened.—Health Commissioner Darling-ton opened the tuberculosis exhibit, at Second Avenue and Thirty-fourth Street, January 16. Physicians on the East Side are aiding in this method of educating the people with regard to tuberculosis. The exhibit will continue until January 27.

Communicable Diseases.—There were reported to the Sanitary Bureau for the week ended January 13, 1,214 cases of measles, with 15 deaths; 397 cases of tuberculosis, with 173 deaths; 222 cases of scarlet fever, with 7 deaths; 32 cases of typhoid fever, with 6 deaths; 23 cases of cerebrospinal meningitis, with 26 deaths; 2 cases of smallpox, and 205 cases of varicella.

Health Department Boat Launched.—Mayor McClellan and the Health Department officials were present at the launching of the *Riverside*. This boat was built for the use of the Health Department at a cost of \$67,000; it has four decks and eight separate wards, so isolated that patients suffering from contagious diseases may be carried to the island hospitals without danger to other patients.

Hospital News.—Plans have been filed for the making over of two four-story tenement houses, recently acquired by the French Benevolent Society, into an annex for the new hospital, at a cost of \$17,000.—The number of patients treated from Oct. 1, 1904, to Oct. 1, 1905, in the New York Infirmary for Women and Children was 1,005; in the dispensary, 8,968, and in the outpatient department, 1,194.—At the annual meeting of the directors of Mount Sinai Hospital it was reported that 5,330 patients had been admitted to the hospital during 1905, as against 3,876 in the preceding year. In the dispensary 53,771 patients were treated, 154 in the outdoor department and 1,086 in the accident ward.

The City Milk Supply.—In a report issued by the Department of Agriculture on the milk supply of Philadelphia, Boston and New York, it is pointed out that the task of safeguarding the supply of this city is a particularly difficult task, as the milk comes from over 200,000 cows, distributed among 9,000 dairy farms, some of them 200 miles from the city. In addition the conditions relating to transportation must be regulated. Out of a total of 2,458 stores visited only 454 were found where the milk was properly cooled and where there was no communication with living rooms. In the Court of Special Sessions, after a long calendar of cases had been brought in by the Health Department, eight doctors were convicted and fines amounting to \$205 in the aggregate were imposed. The judge stated that hereafter anyone who was convicted a second time for selling adulterated milk would be imprisoned, and that the sentence would be heavy. Commissioner Ilebberd of the Department of Charities warmly indorses the newspaper crusade for pasteurized milk. He thinks that the milk used in the hospitals and city institutions should be pasteurized, and would have asked for an appropriation for this purpose had not the funds been apportioned before he came into office.

NEW JERSEY.

Society Officers Elected.—At the annual meeting of the Burlington County Medical Society, held in Burlington, January 10, the following officers were elected: President, Dr. Joseph Stokes, Moorestown; vice-president, Dr. J. Edward Blair, Burlington; secretary, Dr. George T. Tracy, Beverly; treasurer, Dr. Enoch Hollingshead, Penberton.—The annual meeting of the Atlantic County Medical Society was held January 12. The following officers were elected for the ensuing year: President, Dr. Elisha C. Chew; vice-president, Dr. Edwin H. Har-

vey; secretary-treasurer, Dr. Edward Guion, and reporter, Dr. Burton Shimer; nominee for permanent delegate to the Medical Society of the State of New Jersey, Dr. Emory Marvel, and annual delegates to the Medical Society of the State of New Jersey, Drs. David Berner and George Scott, all of Atlantic City.

Condemn Non-Medical Health Officers.—At meetings of the Atlantic City Academy of Medicine and the Atlantic County Medical Society, January 12, the following resolutions were adopted:

Resolved, That the Board of Health of Atlantic City, at its regular meeting, Jan. 11, 1906, under political pressure abolished the position of health officer, and decided to return to the old system of inspection by non-medical men, be it

Resolved, That in the abolition of this office the board of health is taking a step backward and will reduce its efficiency in protecting the health of citizens and visitors.

Resolved, That the board of health be requested to reconsider its present action and appoint some fully qualified medical health officer who will do his duty, irrespective of political or other influence.

Resolved, That the Atlantic City Academy of Medicine condemn the action of the board of health in making the board of health a political body.

Resolved, That a copy of these resolutions be mailed to the secretary of the Board of Health of Atlantic City, N. J., and to the secretary of the New Jersey State Board of Health; also to *THE JOURNAL of the American Medical Association* and the *Journal of the Medical Society of New Jersey*.

NORTH CAROLINA.

Personal.—Dr. James D. Heathman, Woodleaf, broke his arm December 28 while wrestling.—Dr. S. N. Glenn, Gastonia, has been elected physician of Gaston County, vice Dr. Henry F. Glenn, resigned.

Smallpox.—Hope Mills has an epidemic of smallpox. It is reported that there are 200 cases, but that none is serious. The health authorities of Raeford and Lafayette are taking rigid action to prevent a spread of the disease.

Mecklenburg County Medical Society.—At the annual meeting of this society December 5 the following officers were elected: Dr. W. W. Pharr, Newell, president; Dr. Walton O. Nisbet, Charlotte, vice-president; Dr. Parks McC. King, Charlotte, secretary and treasurer; Drs. John R. Irwin and Thomas F. Costner, Lincolnton, censors; Drs. Isaac W. Faison and Robert E. Mason, Charlotte, delegates to the state medical society, and Drs. Charles A. Meisenheimer, Charlotte, and Simmie M. Henderson, Croft, alternates.

OHIO.

Hospital in Trouble.—Suit has been begun in Marion to have a receiver appointed for the Marion City and County Hospital Company, which has liabilities estimated at \$15,000.

Fire at State Hospital.—Fire which started in the carpenter shop at the State Hospital for the Insane, Columbus, January 8, caused \$2,500 damage to the building and \$3,000 or more to the contents. None of the patients was injured.

Fraud Order Issued.—The postoffice department has issued a fraud order against the Western Remedy Company, Cincinnati, as the result of an investigation by Inspector Swanson as to its methods in selling a preparation claiming to cure all ills.

Personal.—Dr. Zachariah T. Housman, Fostoria, has been ill for ten days with lithemia and autotoxemia.—Dr. W. A. Gowing, Toledo, is convalescent after a serious attack of tonsillitis.—Dr. Elmer W. Heltman, Toledo, is seriously ill with tuberculosis.

Academy Election.—The Academy of Medicine of Dayton elected the following officers at its annual meeting, January 12: President, Dr. Edwin M. Huston; vice-president, Dr. A. L. Light; treasurer, Dr. Harry F. Patten; secretary, Dr. A. W. Bartel; censors, Drs. Clifton L. Patterson, W. A. Ewing and William C. Marshall, and program committee, Drs. A. H. Dunham, Richard S. Gaugler and H. B. Harris.

Personal.—Dr. Benjamin L. Milliken, Cleveland, has gone to Jamaica for a month.—Dr. Charles S. Means, Columbus, has been elected president of the board of education of that city.

—Dr. Louis R. Culbertson, Zanesville, sailed from New York for Europe January 7.—Dr. Duncan D. McCallum, Crestline, fell and strained his back December 31.—Dr. William D. Hamilton, Columbus, who was operated on in Chicago for appendicitis two months ago, has returned home.—Dr. George W. Burnett, Greenville, has been appointed health officer.

Councilor District Meeting.—The meeting of the Eighth Councilor District Medical Society of Ohio at Marietta, January 11, was attended by 65 physicians and the work done was of great interest. Dr. E. C. Brush delivered an eloquent ad-

dress entitled, "Are We Garnering Sheaves by Organization?" in which he gave the history of the state and national organizations and stated his belief that the future power of the American Medical Association would force the proper recognition of the medical profession by the passage of laws protecting the profession, and the acknowledgment of the rightful demand that a public health officer should be a cabinet officer. The society was entertained by the Washington County Medical Association. At the close of the program Dr. Stephen A. Cunningham, Marietta, was elected president, and Dr. Charles H. Higgins, Zanesville, secretary and treasurer.

PENNSYLVANIA.

County Society Officers.—At the regular meeting of the Philadelphia County Medical Society, January 17, the following officers were elected: President, Dr. Charles K. Mills; vice-presidents, Drs. James B. Walker, Aloysius O. J. Kelly, Levi J. Hammond, A. Bern Hirsch, Charles A. E. Codman, and James C. Chestnut; secretary, Dr. William S. Wray; assistant secretary, Dr. Ross H. Skillern; treasurer, Dr. Collier L. Bower, and censor, Dr. Frederick P. Henry. Dr. Albert M. Eaton was recommended to the Medical Society of the State of Pennsylvania for district censor.

New Rules for Burials.—Owing to the fact that cemetery sites have been selected without regard to the geologic formation, and that many are not suited for the purpose of properly protecting the health of the persons in their respective localities, the State Department of Health has decided to adopt the following rules and regulations: "Except by special permission from the Department of Health no interment of any human body shall be made in any public or private burial ground unless the distance from the top of the box containing the coffin or casket be at least five feet from the natural surface of the ground, except where solid rock or water may be encountered. Then the distance from the top of the box containing the coffin or casket shall be not less than four feet from the natural surface of the ground, and with the further exception that stillborn children and children less than 4 years of age dead of any diseases other than anthrax, cholera, diphtheria, leprosy, smallpox, scarlet fever, tetanus, typhoid fever, typhus fever or yellow fever, shall be buried at such a depth that the top of the box containing the coffin or casket be not less than three and one-half feet from the natural surface of the ground."

Philadelphia.

Personal.—Dr. Robert S. Engler is seriously ill with typhoid fever. Dr. Raymond A. Dinan, who mysteriously disappeared from his home in this city, was found in Atlantic City, ill with typhoid fever.

Report of Hospital.—The report of the Polyclinic Hospital for 1905 shows that 1,320 patients were treated in the wards, and that 100,923 visits were paid to the various dispensaries. The treasurer's report shows a deficit for the year of \$10,727.22.

W. B. Saunders Company.—The business of the late W. B. Saunders has been incorporated under the name of W. B. Saunders Company, with a capital of \$400,000. The officers are: F. B. Saunders, president; W. B. Watson and R. W. Greene, vice-presidents, and E. V. Hall, secretary and treasurer. This means that the business will be conducted as before Mr. Saunders' death.

Dr. Takaki Here.—Baron Kanehiro Takaki, ex-surgeon general of the imperial Japanese navy, was a guest at the University of Pennsylvania, January 19. He was entertained by Dr. Charles Prazier, dean of the medical school. Dr. Takaki is by special permission of the emperor delivering a course of lectures at Columbia University, and in about two weeks he will begin a series of lectures at Jefferson Medical College. While in the city he was the special guest of Provost C. C. Harrison of the university, and Mr. William Parker.

Medical Club Banquet.—The annual meeting and banquet of the Philadelphia Medical Club was held in the Majestic, January 19. The following officers were elected: President, Dr. Roland G. Curtin; vice-presidents, Drs. Wharton Sinkler and Henry Beates; governor, Dr. G. G. Davis; treasurer, Dr. Lewis H. Adler, Jr.; secretary, Dr. J. Gurney Taylor, and executive committee, Drs. H. H. Whitcomb, Norristown, Pa.; Emory Marvel, Atlantic City, and Wilmer Krusen, Edward E. Montgomery and Ernest Laplace, of Philadelphia.

Bequests.—By the will of the late Moses Geisenberger of Lancaster, the Jewish Asylum, Jewish Hospital, and the Jewish Foster Home each receive \$500. The will of the late Dr. Thomas C. Potter bequeaths to the University of Pennsylvania his medical library, and also the sum of \$10,000 to the

university "to build or establish or endow a dormitory to be known as the John C. Potter dormitory."—By the will of the late Francis W. Lang, St. Timothy's Hospital and House of Mercy will receive \$5,000 for the endowment of a bed to be known as the John Lang Memorial.

Medical Inspection of Schools.—The report of the chief of the Bureau of Health on medical inspection for the year 1905 shows that 43 children found to have diphtheria, and 59 additional children who had been in contact with diphtheria cases; 118 cases of measles and 58 children who had been in contact with cases of measles; 173 children who were suffering from chicken-pox; 87 from whooping cough; 37 from scarlet fever, and 19 children who had been in contact with scarlet fever cases were excluded from schools. The figures for diphtheria show 300 less cases last year than in 1904.

Health Report.—The total number of deaths reported for the week ended January 20 reached 633, as compared with 582 reported last week, and 519 the corresponding week of last year. The principal causes of death were: Typhoid fever, 16; measles, 28; whooping cough, 6; diphtheria, 21; consumption, 75; cancer, 31; diabetes, 6; apoplexy, 16; heart disease, 55; acute respiratory disease, 104; enteritis, 23; Bright's disease, 36; premature birth, 14; suicide, 4; accidents, 19, and marasmus, 12. There were 373 cases of contagious disease reported, with 37 deaths, as compared with 421 cases and 40 deaths for the preceding week. There were 240 new cases of typhoid fever reported, with 16 deaths, while in the preceding week there were 267 cases reported, with 23 deaths.

Statue for Dr. Leidy.—A circular has been issued by a number of citizens asking for contributions toward a fund to erect a statue of Dr. Joseph Leidy on the plaza of the City Hall in recognition of his memorable work in the field of natural science. The circular says that as the president of the Academy of Natural Sciences, professor of human and comparative anatomy and zoology in the University of Pennsylvania, and president of the Wagner Free Institute of Science, Dr. Leidy added immeasurably to the position these institutions already held in the world of science. His reputation was international. It dignifies the city to which his name belongs. Philadelphia, the place of his birth and death (1823-1891), and the scene of his labors for a half-century, has thus far failed to show any practical appreciation of his varied labors in the field of original research. It is proposed to erect a statue for \$10,000. The physicians of this city who have signed the circular are: Drs. H. C. Chapman, S. G. Dixon, F. X. Dercum, Horace Jayne, R. H. Harte, George E. de Schweinitz, Thomas Biddle, Joseph Leidy, Jr., Joseph P. Tunis, William Osler, John H. Mueser, Arthur V. Meigs, R. G. LeConte, W. C. Posey and J. H. Adams.

WEST VIRGINIA.

Cabell County Society.—The medical society of this county held its annual meeting December 14, at which the following officers were elected: President, Dr. Archibald Crary, Huntington; vice-president, Dr. Wesley D. Hicks, Central City; treasurer, Dr. Isaac R. LeSage, Huntington, and secretary, Dr. Thomas W. Moore, Huntington.

Mandamus Denied.—In the case of the Monongalia County Court, which brought suit against the West Virginia Board of Health citing it to show cause why it refused to confirm the appointment of Dr. James W. Hartigan, Morgantown, as county health officer, the Circuit Court denied a writ of mandamus, and on January 11 the Supreme Court affirmed the decision of the lower court.

Personal.—Dr. Wesley H. Sharp, Parkersburg, is convalescing after a surgical operation. Dr. and Mrs. Gustavus A. Aschman, Wheeling, leave for the Mediterranean next month. Dr. S. Marion Steele, Moundsville, has succeeded Dr. Albert H. Kunst as superintendent of the West Virginia Hospital for the Insane, Weston. Dr. John W. Hyer, Richwood, has been appointed assistant superintendent of the institution. Dr. J. R. Bloss, Huntington, has been appointed assistant physician at the West Virginia Asylum, Huntington.

GENERAL.

Quarantine on Honolulu Raised.—Honolulu has not had a case of plague for sixty days and Dr. Cofer of the Public Health and Marine-Hospital Service has declared the outgoing quarantine removed.

Joint Medical Board.—It is reported from Washington that the President has appointed a joint board of officers of the medical departments of the Army and the Navy to consider improvements in the matter of first-aid dressings and the advisability of the adoption of a uniform equipment in the medical departments of the two branches.

Health Officer for Honduras.—Dr. Wyman, surgeon general of the Public Health and Marine-Hospital Service, has assigned Dr. Thomas F. Richardson to Honduras, to be health officer on pay by that country.

Medical Society of the Missouri Valley.—The eighteenth semi-annual meeting of this society will be held at St. Joseph March 22 and 23. The oration on medicine will be given by Dr. N. S. Davis, Chicago, and the oration on surgery by Dr. L. L. McArthur, Chicago. The local arrangements are in the hands of Drs. Jacob Geiger, C. R. Woodson and O. B. Campbell. The secretary of the society is Dr. Charles Wood Fassett, St. Joseph, Mo.

Sanitation in Havana.—According to cable reports the president of the Cuban republic has ordered the enforcement of sanitary ordinances. The decree defines offenses against the sanitary laws and under it the department can inflict penalties for refusal or failure to improve insanitary conditions once notification has been given. Hitherto the department has been hampered owing to lack of authority to enforce the directions of the sanitary officers.

Warning.—We are in receipt of a communication from a physician in California, stating that one giving his name as H. Fred Mace is calling on physicians soliciting subscriptions for THE JOURNAL in connection with a lay magazine, at a great reduction of rates, and is collecting subscriptions in advance. This offer is fraudulent and the money received is presumably retained by the alleged agent. We would again warn physicians to pay no money to agents on account of THE JOURNAL of the American Medical Association, unless the representative has a letter authorizing him to make collections at that time.

Third Congress of French-Speaking Physicians of America.—The two preceding annual congresses were held at Montreal and at Quebec. The third is to convene at Trois-Rivières during the last week of June, 1906. An urgent appeal is being made to all French-speaking medical men and women to co-operate in making this approaching congress a success. The subjects to be discussed will be eminently practical ones. Dr. L. P. Normand and Dr. C. DeBlois of Trois-Rivières are the president and secretary of the congress, supported by an able committee of organization. The congress in the following year will be held on this side of the border.

Gibbs Memorial Prize.—For the best essay on the "Etiology, Pathology and Treatment of the Diseases of the Kidneys" the trustees of the New York Academy of Medicine announce a prize of \$2,000. Essays may be sent Oct. 1, 1907, or before, to Dr. A. Jacobi, chairman of the board of trustees, 17 West Forty-third street. The prize committee does not expect the "etiology, pathology and treatment" of the diseases of the kidneys to be discussed with equal completeness, but will be satisfied with the thorough scientific consideration of part of the problem, provided an essay offered in competition contains new facts or discoveries or points of view of sufficient merit.

Inspection Tour.—It is reported that the United States Fruit Company has placed one of its vessels at the disposal of the health authorities of New Orleans and Mobile in order that they may inspect the Central American fruit ports. The company is desirous of demonstrating its facilities for taking care of infectious diseases, the manner in which the vessels of its line loaded cargo and the position of the anchorage and wharves at the various loading ports. Another object of the purposed trip is to have a conference with the local health authorities at the Central American ports and to secure their co-operation, with a view to establishing safer and better quarantine regulations with New Orleans and Mobile.

Health Report of the Isthmus for November.—The report states that during November Colon underwent the same systematic cleaning to which it has been subjected for several months past. In Cristobal considerable pipe drainage and road building was added to the general work of sanitation. On November 11 Mount Hope cemetery was formally turned over to the health officer and now all burials are under the supervision of that official. The funeral trains are under the charge of a foreman in the employ of the health office, and he is empowered to arrest persons obtruding themselves on the occasion of a funeral. The arrest of two individuals has warned the public that the practice of using funeral trains for excursion purposes is to be stopped. The report also states that much less trouble than formerly is being encountered in the daily administration of quinin to laborers. The majority of cases of malaria have occurred among the more recently arrived laborers from Martinique.

CANADA.

Contract Practice.—The medical men of Regina, Sask., as a body have declared against entering into any contracts with friendly and benefit societies in the future.

Communicable Diseases in Vancouver.—According to Dr. Underhill, the health officer of Vancouver, B.C., there were in that city in 1905, 188 cases of mumps, 26 of diphtheria, 26 of measles, 99 of whooping cough, 7 of tuberculosis, 52 of typhoid fever, 52 of scarlet fever, and 76 of chicken-pox. The death rate for the year, taking the population at 42,000, was 10,571 the total number for the year being 444.

Montreal's Annual Health Report.—Cases of contagious diseases in Montreal during 1905 numbered 2,615, divided as follows: Diphtheria, 529; scarlet fever, 223; typhoid, 392; measles, 929; roseola, 5; varicella, 33; whooping cough, 94; tuberculosis, 405; trachoma, 4; cerebrospinal meningitis, 3; erysipelas, 2.

Personal.—Dr. E. C. Burson, of the house staff of the Toronto General Hospital, has been appointed chief of the interne staff.—Dr. Frank Irvin, Souris, Man., has been appointed assistant medical superintendent of the Brandon Provincial Hospital for the Insane.—Dr. Norquay of that institution has been transferred to the Selkirk (Man.) institution.

School Hygiene for London.—London, Ont., sent a large deputation to Toronto on January 18 to interview the government with regard to establishing a school for hygiene in that city. Premier Whitney in reply stated that his government would always be prepared to consider any reasonable proposition with regard to medical education in the province of Ontario. A detailed statement of the proposed institution will be placed before the government.

Analysis of "Patent Medicines."—As the Canadian law does not at the present time provide for the department of inland revenue, under which all chemical analyses are made, making any chemical analysis of any of the patent medicines on the Canadian market, pressure is being brought to bear on the dominion government to remedy the existing conditions. At an early date, however, it is understood that the dominion analyst will publish the results of an analysis of several of the best known patent medicines.

Hospital News.—A citizens' committee has been organized in Toronto to collect subscriptions for the Toronto General Hospital. Several influential business firms have subscribed from \$500 to \$1,000 each to this purpose.—The total subscriptions to the Toronto General Hospital amounted to \$1,074,541, to January 20.—The Western Hospital, Montreal, treated 524 patients during 1905. In the outdoor departments the consultations numbered 6,698. A new wing will be erected to provide for an additional 100 patients. Dr. Grace Ritchie England has resigned from the position of assistant gynecologist to this hospital, a position she held for thirteen years. The resignation of Dr. A. Macphail as pathologist was also received and accepted.—During December, 1905, 57 male and 11 female patients were admitted to the Vancouver General Hospital. Six patients died in the institution during that month.—During the week ending January 13, 220 men, 111 women and 50 children were treated in the Winnipeg General Hospital.—The sixteenth annual meeting of the life governors of the Brandon (Man.) General Hospital was held January 15. This hospital now has accommodation for 120 patients.—One citizen of Victoria, B. C., has offered to head a subscription with \$5,000 if the citizens will raise \$25,000 for converting the present Royal Columbia Hospital of that city into an up-to-date and modern hospital.—The Ontario Government Institution for Epileptics has been completed at Woodstock. It has accommodation for 70 patients and will have for superintendent Dr. J. J. Williams of Lisle, Ont.—On January 12 325 patients, 195 males and 130 females, were in the Toronto General Hospital, the largest number ever in the hospital on a given day.—The Ontario government will shortly consider the question of removing the Toronto Provincial Hospital for the Insane to a point outside the city limits.—At the Montreal General Hospital during 1905, 3,210 patients were admitted to the wards and 44,377 consultations were held in the outdoor departments. The average daily sick in residence was 204.—The Royal Victoria Hospital, Montreal, treated 3,093 patients during 1905. Of the 182 deaths in the institution 57 took place within 48 hours of admission.—Dr. J. W. Stirling was appointed ophthalmologist to the hospital to succeed the late Dr. Frank Buller. The Home for Incurables, Toronto, had 132 patients during 1905. There were 4 deaths during December and 8 applications for admission.—The following have been appointed to the house staff of the To-

ronto General Hospital, to serve for the usual six months' term. In surgery.—Dr. T. D. Archer, Campbellford, Ont.; Dr. J. H. Soady, Toronto; Dr. J. H. Kidd, Peterboro. In medicine.—Dr. K. H. Van Norman, Toronto; Dr. F. W. Rolph, Markham, Ont.; Dr. F. J. Buller, Toronto.—In 1905 the Winnipeg General Hospital treated 4,366 patients in its wards and in the outdoor departments 5,735. The deaths during the year numbered 332. To show how the work at this hospital has increased during the past five years the following figures are given: In 1901 the in-patients were 2,773; 1902, 2,928; 1903, 3,354; 1904, 3,868. In the outdoor departments the increase has also been great. In 1901 the number was 1,607; 1902, 1,363; 1903, 3,483; 1904, 4,772. The total number of patients treated in the Winnipeg General Hospital during the week ending Jan. 6, 1906, was 357, of whom 222 were men, 86 women and 49 children.—The trustees of the Toronto Free Hospital for Consumptives held their first annual meeting in Toronto, January 13. Dr. Allan Adams, the physician in charge of the institution, presented his first annual report for the hospital year ending September 30. During the year 136 patients in advanced stages of the disease were treated, and over 5,000 people registered as visitors, showing that the community is taking a deep interest in the institution.—Representatives of the various interests in the new Toronto General Hospital met at the Ontario parliament buildings on the afternoon of January 9 and decided that a new board of trustees with 25 members be established, as follows: The Ontario government, 8; the University of Toronto, 5; the city of Toronto, 5; the benefactors, 7. Any one can become a benefactor who up to the time of passing the necessary act to incorporate the institution has donated \$500, and after the act has come into force, \$1,000. The privilege of students visiting the wards shall be confined to the students of Toronto University.—Mayor Urquhart of Toronto, on leaving office, inaugurated a fund for the benefit of the Toronto General Hospital to which he invites 999 other citizens to contribute \$100 each.

FOREIGN.

The Pope and the Miracles at Lourdes.—Dr. Boissarie of Lourdes, France, sent recently, as usual, his annual report to the Pope of the miraculous cures effected at the famous grotto of Lourdes in his charge. He received, in reply, a letter from Dr. Laponi, the medical attendant of the Pope, stating that in future the latter wished to have arrangements made to establish the identity of the persons thus cured, with depositions of physicians and witnesses who had seen the patients before their cure, placing the Lourdes experiences on a more scientific basis than hitherto.

Medical Legislation in Victoria.—It is reported that a bill about to be presented to the government of Victoria, Australia, is to the effect that no degrees will be recognized from universities other than the United Kingdom or a British possession, unless it appears to the medical board that such institutions recognize the medical graduates of the University of Melbourne, and that Melbourne graduates are permitted to register in the country of the university. A clause is introduced prohibiting any persons but registered medical practitioners (and chemists) from dispensing medicine or rendering to any person medical or surgical aid for fee. The penalty for evading these provisions is fixed at \$250.

Plague in Japan.—Passed Assistant Surgeon Moore reports from Yokohama that the strenuous measures enforced at Kobe and Osaka with a view to controlling plague have not as yet proved successful. The present outbreak is the most extensive and alarming one that has yet visited Japan, excluding Formosa. In view of the fact that Kobe ranks with Yokohama as a leading port of the empire and that Osaka is its chief industrial center and second city in point of population, the situation is grave. Chefoo, Chemulpo and Shanghai have all declared quarantine against Kobe. Dr. Kitasato, who is now spending his time between Osaka and Kobe, is of the opinion that plague was imported into Japan by a shipment of Bombay cotton, which was supplied to the cotton mill where the disease started.

Charlatans Imprisoned and Fined in Germany.—One month's imprisonment and a fine of 1,000 marks, about \$250, were imposed recently on a charlatan named Overmann by the court at Haagen. He had advertised that he could cure lupus, cancer, epilepsy, goiter, etc., and fifty witnesses testified that he had cured them of these or similarly serious affections. The suit was brought by the Haagen Medical Society, and testimony was presented showing that Overmann was incapable of diagnosing most of the affections in question. The

penalty imposed was higher on account of the fact that he had been previously sentenced by the courts for similar irregular practices. Kirchberg urges medical societies elsewhere to follow this example of the Haagen association. Systematic arraignment of quacks in this way, he thinks, would do much good. The court at Ulm has also sentenced a quack to seven months' imprisonment for advertising a "sure cure for tuber culosis."

Neisser's Research on Monkeys in the East Indies.—The *Deutsche med. Wochts.* is publishing Neisser's report of his months of research in the Dutch East Indies. He had the largest number of monkeys at his disposal that have ever been collected for a single purpose, a total of about 900, including 11 orang outangs, from 20 to 30 gibbons, and the rest smaller monkeys. He was particularly impressed with the morbidity of the monkeys, intestinal diseases, dysentery and helminths making constant ravages among them. He found that there is not so great a difference between the smaller monkeys and the orang outangs and gibbons in respect to infection with syphilis as has been previously assumed. The higher species are more susceptible, but the infection proceeds about the same in each kind of monkey. All his attempts to preserve syphilitic material for use at a later date proved fruitless. All virulence had vanished by the sixth or seventh hour after removal from the body. Even from the cadaver, inoculations were always negative after an interval of eighteen hours. Excision of the focus a few hours after infection was unable to arrest the generalization of syphilis, and the most varied attempts to prevent the development of the infection after inoculation never proved successful. The generalization of the infection could usually be demonstrated by the fifty-fourth to the hundred and fortieth day after the inoculation. Simultaneous mercurial treatment never succeeded in preventing the development of the primary lesion, and, in one instance, material from a mercury-treated animal proved exceptionally virulent when inoculated into others.

Coroners and Doctors in London.—A dispute has long been pending between the coroner for Westminster and South West London and the medical profession in regard to the employment of the pathologist to the London county council to make autopsies. The custom in London has always been for a local man to do this work, generally the physician who was first called in or the regular medical attendant. The coroner for Westminster ignored this custom, however, and brought into his district the London county council pathologist for the purpose of making postmortem examinations and of attending at inquests to give evidence. Naturally, this aroused the members of the medical profession who, if this method were universally followed, would be deprived of a somewhat valuable source of income, the fee for such work being £2.2 (\$10.50). The British Medical Association took up the matter, and, as ratepayers, requested the auditor to disallow certain fees paid by the London county council to the coroner for Westminster, to reimburse him for payments made to the London county council pathologist. The contention of the association was that local medical men were entitled to do the work, and that some hundreds of physicians were affected by the coroner's action. The British coroners' act of 1887 provides that, in the event of the death of a person who has not been seen during life or immediately after death by a duly qualified medical practitioner, "the coroner may call in a medical man in actual practice in or near the place where the death occurred to make a postmortem examination and to give evidence at the inquest." The British Medical Association asserted, at the inquiry, that the London county council pathologist did not practice in or near the Westminster and South London district. The auditor of the Local Government Board came to the conclusion that he is bound to allow the whole of the payments in question, but added that he wished to express his sympathy with those members of the medical profession who had been affected by the coroner's general mode of procedure. The British Medical Association may appeal from this decision, in which case the matter will come before the Local Government Board.

LONDON LETTER.

The Health of the Navy.

A blue-book has just been issued on the health of the navy in 1904, which was very satisfactory. With a personnel increased by 7,470 as compared with the previous year there are decreases in the number of cases, invaliding, and deaths as compared with the average of the last seven years. Contrasted with 1903 the case and invaliding ratios show reductions. The invaliding ratio, viz., 22.7 per 1,000, shows a decrease of 7.28 as compared with the average of the last seven years.

The death rate was 4.45, a decrease of 1.01. The death rate from disease alone was 3.14. The highest invaliding and death rates were on the East India station. The total force serving afloat was 110,570. The total number of cases of disease and injury was 83,447, which is in the ratio of 754 per 1,000, a decrease of 118 per 1,000 as compared with the average of the last seven years. The total number of days of sickness on board ship and in hospital was 1,269,015, which represents an average of 11.47 days for each person, a decrease of 1.84 in comparison with the average of the last seven years. The total number of persons invalided was 2,511, which is in the relation of 22.7 per 1,000, a decrease of 7.28 in comparison with the average of the last seven years. Of the above total, 1,756 persons were finally invalided from the service, a ratio of 15.88 per 1,000 for the whole force, or 69.9 per cent. of the number invalided, a decrease of 1.16 per 1,000 when contrasted with 1903. Deaths numbered 493, a ratio of 4.45 per 1,000, which is a decrease of 1.01 per 1,000 as compared with the ratio for the last seven years. The average number of entries on the sick list for disease and injury per man was on the home station, 0.72 per 1,000.

Interesting Experiments on Schoolboys.

Interesting experiments have been carried out by the London County Council with the object of discovering the cause of variation in the physical condition of school children. Over 400 boys were weighed, measured, their teeth examined, and their personal cleanliness and clothing noted for the purpose of determining the conditions of their home life. An estimate of mental capacity was added by the teacher. Marks of from one to five were given to the boys after their clothing had been noted for evidence of the grade of poverty. In the first grade the clothing was of the scantiest possible. The boys were considerably below the average in weight, but the lack of height was not so marked. In the next grade the clothing was insufficient to retain animal heat. These boys worked out at the average. In the next grade the clothing was poor but passable; in the fourth it was good, and in the fifth very good. In the latter three grades the physical condition of the boys was above the average. Five per cent. of the boys were classified as dull and backward, 17 per cent. were below the average, 43 per cent. were of average intelligence, 24 per cent. were above the average, and 10 per cent. were brilliant. Curiously, these latter boys were slightly below the average in bodily conditions. Fifteen boys who lived in one-room tenements were slightly below the average weight, while their failure to come up to the average height was a little more marked. Those living in two and three-room tenements were of average height and weight. The boys living in four-room tenements were above the average in height and weight. One of the most potent causes of ill-nutrition was found to be the necessity of mothers leaving their homes to go to work. The majority of cases of injury to health were traced to want of cleanliness, and the provision of school baths as distinguished from swimming arrangements is declared to be increasingly necessary in many parts of London.

Pharmacology

Nostrums Advertised as Diuretics.

It is well known that the examination of the urine furnishes valuable clinical evidence in disease, and it is a case of a little knowledge being a dangerous thing so far as the layman is concerned, since he is told by those who advertise in the daily press that he may examine his own urine after it has stood twenty-four hours, "any sediment or cloudiness being proof of kidney disease."

Thus do these creatures, not content with preying on the sick, persuade the well that they are hovering on the brink of the grave, with no chance of salvation save in the remedy recommended. These are among the most brazen swindlers and insult ordinary intelligence with such palpable fraud that they escape being considered criminals only by a shallow pretense or because our laws are woefully lacking in defining what constitutes a crime. The following paragraph from a daily paper well illustrates the really criminal suggestiveness of this class of advertisement:

"THIS SIMPLE TEST WILL TELL: Put some morning urine in a glass or bottle; let it stand for twenty-four hours. If then it is milky or cloudy or contains a reddish black dust sediment, or if particles or germs float about in it your kidneys are diseased.

This is the supreme moment when you should begin to take WARNER'S SAFE CURE to arrest all these unnatural conditions, for they are the unmistakable symptoms of kidney disease. If, after you have made this test, you have any doubt in your mind as to the development of the disease in your system, send us a sample of your urine, and our doctors will analyze it and send you a report with advice free."

ANASARCIN AND SIMILAR PREPARATIONS.

To demonstrate that the methods employed by many men in the "ethical field" are little different from those of the "patent medicine" makers we call attention to a circular sent out by the Anasarcin Chemical Co. For sublime effrontery and impudence the following is hard to match even in lay journals.

"In cases of valvular heart disease, when compensatory hypertrophy of the right ventricle is lost, and the patient is suffering all the distressing symptoms, headache, dizziness, vertigo, stupor, somnolence, dropsy with the most extreme dyspnea, that belongs to this stage of the disease and the physician in charge has used all the known remedies for such troubles, i. e., *digitalis*, *strophanthus*, *apocynum*, *spartein*, *supra-renal extract*, etc., without avail, a few doses of Anasarcin promptly relieves the dyspnea, the pulse is reduced in frequency, is more regular and full, and the dropsy begins to decline."

If the reader believes that the above is true, he must feel a feverish anxiety to learn the marvelous secret of the remedy. We are told that it consists of the active principles of *Oxydendron arborescens*, *Sambucus canadensis* and squill.

The first named seems to occupy the same relative position to the nostrum that the "four legs" do in the riddle about the chicken "merely put in to make it harder to understand."

The proprietors of hydragogen make a statement which we hope no physician will accept. Hydragogen is said to consist of tincture of *digitalis* 1.5 parts, tincture of *strophanthus* 2.5 parts, *scillipicrin* and *scillitoxin*, the active principles of *Scilla maritima* (how much?) and 0.5 part of *oxysaponin*. The latter, which is extracted from *Herniaria glabra*, is said to increase the diuretic action of the first four many times, without any unpleasant by-effects. They immediately make this admission: "Of course, patients with individual peculiarities may, after some time, complain of malaise, weakness, anorexia or aversion to the drops, and in these cases it may be well to discontinue the drug for a time." We suspect that anasarcin contains something closely akin to "oxysaponin."

The confidence of the physician in anasarcin is apt to be shaken when he reads further in the circular that "digitalis and squill are now known to contain alkaloids."

The circular of the Anasarcin Chemical Co. affirms that in all their dealings they are guided by the highest standard of medical ethics. This latter statement may be true, but, if true, it is, indeed, a sad commentary on the present status of our sense of duty and propriety on matters relating to the very fundamentals of the practice of medicine.

"Patent Medicine" Legislation in Kentucky.

Representative Johnson of Franklin County has introduced a bill into the Kentucky legislature similar to the one adopted last year in North Dakota, providing that the formula of "patent medicines" be printed on the package. As far as we have been able to learn, the newspapers are not devoting any space to urging the passage of this law, nor do we hear of any efforts on the part of physicians or of the public to back up Representative Johnson in his efforts to check the "patent medicine" fraud in Kentucky. We do have evidence, however, that the "patent medicine" men are awake and very, very active. The effective principle underlying the "red clause" idea is being utilized.

We have been favored by a certain newspaper of Kentucky with letters which it has received from "patent medicine" firms and their agents, which make interesting reading and prove conclusively that even in Kentucky the nostrum men have, or think they have, their grip on the throats of the newspapers. Among these letters is a three-page letter from the Peruna people, signed—by rubber stamp—"S. B. Hartman," from which we quote:

"The millions of users of proprietary medicines make no demand for such a law. They have it in their power to use or not use the medicine. They are at least presumed to have enough common sense to know whether an article does them good or cures them and whether it does not. And most undoubtedly if it does not cure them they can at least protect them from its use, because they know the name of the article under which it goes."

This sounds extremely plausible, and certainly should be enough to convince any editor of the bigotry of those who would not allow the public to be their own judge as to whether they should take "patent medicine" or not. Several paragraphs are devoted to the editors of the *Ladies' Home Journal* and of *Collier's Weekly*. Dr. Hartman charges Mr. Bok with making a fight on "patent medicines" out of spite because one of the "patent medicine" firms has sued the *Ladies' Home Journal*. He says of physicians:

"Those are the people who are crying for formulas on proprietary medicines, but yet if they are called on themselves to explain to the patient what they are giving them they would absolutely refuse to do so.

"Is this justice? Is this equity? In this free country of ours to preach a doctrine and to refuse to comply with this doctrine?"

"Dr." Hartman does not know, evidently, that the doctor's prescription is on file, to be referred to by the courts, if necessary.

"We would be pleased to have you take this up, immediately, with the senators and representatives of your state, either in person or by writing, and a letter of attention to the fact of the injustice and autocratic spirit of this act."

One of the letters is from a "patent medicine" advertising firm, and the writer is very pointed in his remarks regarding what will happen if the bill is allowed to become a law:

"When a similar bill was passed in North Dakota last year, we were obliged to cancel all our Advertising Contracts in North Dakota, and as other agencies did the same thing—the Newspaper people of North Dakota are standing the loss that was brought about by some Country Doctor losing a fee on account of one of his patients buying a bottle of Castoria. These Country Doctors are so narrow between the eyes that they 'can look through a key-hole with both eyes at one time.' . . . The writer feels that he knows the physician a little bit better than the average advertising man; because, in the first place, he spent twenty years of his life in the Wholesale and Retail Drug business, and his dealings during this time were confined mostly with physicians, and he can go on record in saying that during all this time he actually never knew of a case of where a Doctor stayed up nights studying how he could improve the health of a Community at large."

Here is a paragraph, however, that is too good to let pass:

"Now, let us tell you another thing, if the Doctors in the United States did not prescribe 'Proprietary Medicines' one-half of the Manufacturers of these remedies in this Country would go out of business inside of twelve months."

Physicians who are in the habit of prescribing nostrums should read this sentence two or three times, and, if possible, should learn it by heart. Of course, it must be remembered that the writer of the letter is talking about "patent medicines," but he dignifies them with the title, "proprietary medicines."

The Hostetter Company, proprietors of "Hostetter's Stomach Bitters," gives a hint to the newspaper addressed in these words:

"We would, therefore, kindly urge you to use your best efforts with your Representative to assist in defeating it, otherwise we will be compelled to withdraw our advertising from the various newspapers throughout the State."

The Chattanooga Medicine Company is the firm that puts out "Wine of Cardui," the advertisements of which are so incident that no man with any self-respect would dare to read them out loud before his family. This company also writes a letter to the newspaper and covers the same old arguments. Here is one:

"Last summer a letter was published by Edward Bok, editor of the *Ladies' Home Journal*, in which he gave the physicians to understand that he had organized a bureau to promote legislation of this character and that bills for this purpose would be forthcoming in every state legislature during the coming winter. It may, therefore, be assumed that the inclosed bill is the one which the editor of the *Ladies' Home Journal* deems most suitable for the people of Kentucky and which he has caused to be introduced."

Poor Mr. Bok seems to be "getting it in the neck" sadly. As it happens, however, this is not Mr. Bok's bill, if he has any, and Mr. Johnson, we are reliably informed, knows nothing about the articles in the *Ladies' Home Journal* or about the bill with which Mr. Bok is credited.

We make one more quotation from the "Wine of Cardui" people:

"Trustworthy statistics gathered during the last six months conclusively show that casualties from the use of proprietary medicines are excessive and that practically never occur when the directions on the package are followed. On the other hand the number of fatalities arising from the use of strychnin, morphin, arsenic, etc., prescribed by physicians, is many times greater than the casualties resulting from the use of proprietary medicines of every description."

It may be interesting to note that this paragraph occurs almost word for word in the letter of the "Peruna" people and that the same "arguments" are given in all the letters, indicat-

ing a common source for the "information" that is supplied to the servile newspapers.

A desperate effort is being made by the press committee of the Proprietary Association, assisted by the *Western Druggist* of Chicago, the *National Druggist* of St. Louis, and some other drug journals, to overcome the verified statements of Mr. Adams regarding deaths from the use of "patent medicines," but they have not succeeded. We hope to have something definite to say on this point before many weeks. From evidence that has been coming into this office recently, Mr. Adams did not by any means exaggerate when he spoke of the number of deaths from the use of "patent medicines"; he most decidedly underestimated the number.

There are other letters of a similar tenor, but we have quoted enough to show that the tactics to muzzle the press, as illustrated in *Collier's* article on "The Patent Medicine Conspiracy Against the Freedom of the Press," and that were used in Massachusetts and in Wisconsin, are being adopted in Kentucky.

This brings up the question: Who is representing the public in this matter, and what are the physicians of Kentucky doing about it? Thus far, physicians have done nothing in furthering the propaganda against the "patent medicine" fraud, probably because they fear that if they did their motives would be misconstrued and their actions charged to selfishness.

The Proprietary Association is asserting that physicians are instigating this fight against secrecy and fraud in "patent medicines"—for it is the secrecy and fraud that are objected to, this must not be forgotten—therefore, since we have the credit, would it not be just as well for us to deserve this credit and go to work and do what we ought to do? We urge the physicians of Kentucky to assist in this fight against the vultures who are preying on the gullibility of the ignorant and on the fears of the sick and the suffering.

Endorsement of the Propaganda Against the Nostrum Evil.

At a meeting of the New York Academy of Medicine, held January 18, the following resolution was offered, seconded and, after some discussion, passed:

WHEREAS, The evil caused by the widespread use of preparations of drugs of unknown and deleterious constituents inflicts a very great and growing injury on a large proportion of the public, and

WHEREAS, It is impossible to overcome this evil by individual effort because the preposterous and extravagant claims made by their purveyors are convincing to the uninformed by reason of the media of their advertisement, which include periodical literature of all descriptions, not only the daily press and magazines, but also religious and otherwise reputable medical journals and many counterfeited imitations of the latter, to some of which an income practically amounting to a subsidy is paid; and

WHEREAS, Physicians frequently aid in the propagation of the evil by prescribing them, by giving testimonials in favor of them, or indirectly, by their failure to prescribe according to the needs of their individual patients, therefore be it

Resolved, That this academy urges most strenuously on its fellows and on all other physicians, never under any circumstances to sanction the use of any preparation the nature and quantity of whose ingredients are unknown to them, whether it appear in the guise of a medicine, a food, or as an appurtenance for external use; and to this end to prescribe definitely, exactly and in writing for every patient who needs any drug or combination of drugs; to diffuse among the laity as widely as possible a knowledge of the nature and quantities of the preparations of drugs of unknown constituents; to second as far as possible the efforts of the American Medical Association in its attempt to combat this evil through the agency of its Council on Pharmacy and Chemistry, whose duty it is to investigate fraudulent preparations and to publish the truth about them; and to use all proper influence to have advertisements of them removed from medical journals;

Resolved, That pending repressive legislation which is likely soon to take place in many state legislatures and also in Congress, the attention of the State Board of Health be respectfully directed to the admirable chemical work which has been conducted for years by the Massachusetts State Board of Health and which has resulted in the filing in the Massachusetts State House of a long list of compounds of fraudulent preparations and of the names of the manufacturers of their noxious ingredients; and that the Department of Health of this city be respectfully urged to exercise its powers to protect the public against the dangers of secret preparations of all sorts which have not been made public and which by chemical analysis be shown to be so, by absolutely prohibiting their sale within the limits of its jurisdiction;

Resolved, That wide publicity be given to these preambles and resolutions under the direction of the council and that a true copy of them be sent to the boards of health of this state and of this city.

At a meeting held January 11 the Montcalm County (Mich.) Medical Society adopted resolutions endorsing the work of the Council on Pharmacy and Chemistry in investigating non-official drugs and in educating the medical profession concerning the evils of secret nostrums. The society declared that as

physicians have the right to know the composition of all remedies used by them it is their duty to refrain from using articles for which the formulas are not given. The society also commended the work of the *Ladies' Home Journal* and *Collier's Weekly* in exposing "patent medicines."

Similar resolutions were passed by the Crawford County (Ill.) Medical Society, the Allamakee County (Iowa) Medical Association, the Santa Barbara County (Cal.) Medical Society, the Atlantic County (N. J.) Medical Society, and the New Castle County (Del.) Medical Society.

The Shelby County (Ala.) Medical Society, at a meeting held January 9, passed resolutions approving the work of *THE JOURNAL* and of the Council on Pharmacy and Chemistry in exposing secret remedies, and also the work of the *Ladies' Home Journal* and *Collier's Weekly*. In addition, the members of the society pledged themselves not to prescribe any preparation of which the formula and proportions of the ingredients are not well known and substantiated by well-accepted medical authorities. The society also condemned unqualifiedly all religious publications which publish advertisements of deleterious "patent" preparations, or sure cures for cancer, dropsy, tuberculosis or Bright's disease.

The Utah County (Utah) Medical Society endorsed the action of the American Medical Association and instructed the secretary to notify the Utah State Medical Association, the American Medical Association and the Utah State Pharmaceutical Association to that effect and also to advise these bodies that the society has sent a petition to Congress in support of Senator Heyburn's pure food bill.

One Illustration of the Danger of Using a Nostrum.

In the January number of the *Medical World* is an illustration of what can happen, and often does happen, when a physician prescribes a secret preparation. Some one contributes an article on the treatment of pneumonia, but the editor generously suppresses the name of the author. The latter claims to have practiced thirty years, "hoping all that time that I should some time be a doctor; but I am yet a student." For "pain or stitch in side," he gives a hypodermic of morphia, and adds:

"This gives perfect ease with deep breathing. At this stage I am not afraid of acetanilid. I generally carry a preparation made as follows:

"B. Acetanilid 3i
"Soda bicarb.

"Bromo seltzer, aa..... 3ss
"M. Triturate thoroughly. Dose, 5 gr. to 15 gr.

"Follow the hypodermic with a dose of the above mixture. In from 20 to 60 minutes the patient begins to complain, 'Oh, I am so hot.' A few minutes later a colligative sweat sets in. Your patient is now comfortable."

The last remark is not to be wondered at, and it would not be strange if the patient remained "comfortable" for a long time. As the editor of the *Medical World* comments, "It is no wonder that his patients become cyanosed and suffer from drenching sweats." Here is a doctor mixing this nostrum, bromo-seltzer, a principal ingredient of which is acetanilid, with acetanilid. He is a student, he says, and we hope that he will prove to be one to the extent at least of learning not to prescribe anything unless he knows exactly what he is prescribing.

A Pertinent Question.

The *Medical World*, commenting on one of the *Collier's* articles on nostrums, concludes with this pertinent question:

"How can the editor of any medical journal read the exposé of antikamnia above mentioned and print the advertisement of antikamnia in his advertising pages? The profession should ask every medical editor if he has read the article above referred to, and then ask why he carries the antikamnia advertisement. Will you write to the editors of all the medical journals you take about this matter?"

But why not ask the same question regarding ammonol, salicodin (Bell) and phenalgin? They are all in the same category. It is not only because it is indirectly advertised to the public that antikamnia should be condemned, but because it is a dangerous nostrum that has been foisted on our profession on false claims. The other acetanilid mixtures we mention should be refused recognition for the same reasons.

A Pharmaceutical Secret Which Should Not be Lost.

Dr. Gregory Costigan, New York City, writes, under date of January 21, as follows:

"I have been carefully reading and enthusiastically approving your articles on the nostrum evil, and have been impressed more than usual on the existence of quack advertising in medical journals as set forth in last paragraph and quotation on page 206, bottom of first column, of your issue of Jan. 20, 1906.

"In *Merck's Archives*, page 11, we are told in an advertisement on 'Phenalgin' that it is a compound of peculiar character which can not be extemporaneously made from powdered drug and 'our process of manufacturing tablets is coincident with the manufacture of Phenalgin and is the result of a long series of careful experiments by which we are able to produce tablets of Phenalgin in a friable condition without losing any of its volatile constituents or undergoing chemical changes from heat or moisture'!! Inasmuch as Phenalgin tablets are not covered with a waterproof coating I think this is a remarkable statement to make, and the manufacturing of a drug coincident with the manufacture of a tablet must be a very remarkable performance especially because it 'retains the full therapeutic value of the drug unimpaired' while the advertisement asserts that no other manufacturer is cognizant of this wonderful method. This ad. is for the perusal of physicians only. The Etna Chemical Company owes it to the medical and pharmaceutical world not to let this secret die with the company's dissolution. It owes it as a duty to the coming generations of science immediately to jot down the full data of this wonderful performance, to put it away in an age-proof safe and not to allow it to be lost to humanity as were a great many other arts that were well known to the ancients. Let them keep it secret now and profit by it, but do not let it be lost to posterity."

Correspondence

The Index Medicus.

WASHINGTON, D. C., Jan. 15, 1906.

To the Editor:—The complimentary dinner given in honor of the approaching 83d birthday, on March 6, 1906, of one of the founders and the principal editor of the *Index Medicus*, Dr. Robert Fletcher, has naturally directed attention to that publication.

The *Index Medicus* is a monthly publication, issued under the auspices of the Carnegie Institution of Washington, D. C. It is edited by Dr. Robert Fletcher and Dr. Fielding Garrison, of the Library of the Surgeon-General's Office. It is just what its name indicates, a medical index, or subject and author catalogue of all the current medical literature of the world of the preceding month.

It is compiled, through the courtesy of Dr. Robert M. O'Reilly, Surgeon-General, U. S. Army, and Major Walter McCaw, Assistant Surgeon-General and Librarian of the Library of the Surgeon-General's Office, from the cards prepared for the "Index Catalogue of the Library," the cards being loaned for that purpose. The "Index Catalogue" is published in progressive volumes, one volume a year, covering one or more letters of the alphabet, according to the number of titles that can be comprised in the prescribed 1,000 pages of the volume.

The *Index Medicus* was founded by Drs. J. S. Billings and Robert Fletcher in 1879, who were its editors until Dr. Billings retired from the Medical Department of the Army. From 1879 to 1884 it was published by F. Leybold, of New York. It then announced its suspension for want of sufficient support, but, with the beginning of 1885, George S. Davis, of Detroit, took up the publication and continued it until 1895. From May, 1895, until April, 1899, the publication was issued by the editors, when it suspended publication. Jan. 1, 1903, the Carnegie Institution undertook the responsibility of publication.

Although Dr. Fletcher was in his 81st year when the Carnegie Institution undertook the publication, and was reluctant again to take up the editorship, he yielded to the urgent persuasions of his many medical friends and again resumed the editorial chair, assisted by Dr. Fielding Garrison, who has been for some years associated with Dr. Fletcher in the compilation of the "Index Catalogue."

The subscription price of the *Index Medicus* was originally \$5 per year, but at this price the publishers lost money. It was then raised to \$10, but this was not sufficient to pay the enormous cost of printing, and \$25 a year was subscribed by one or two hundred enthusiastic medical writers, but even this was not sufficient to meet the growing expense.

It may readily be asked why so valuable a publication was not self-supporting. The answer is that in the entire medical profession there are only a comparative few who are interested to any extent in medical research, but more particularly to the fact to those only who have easy access to large medical libraries or who could afford to come to Washington and use the Library of the Surgeon-General's Office would the *Index* be of much service, as it gives only the titles of books and journal articles and the source from which they are taken. But to those who are engaged in medical research, and wish to keep in touch with the very latest and best thought and progress of medicine and surgery it is considered invaluable and indispensable.

THE INDEX CATALOGUE.

The "Index Catalogue of the Library of the Surgeon-General's Office," which forms the basis of *Index Medicus*, is the most perfect and complete author and subject index ever published.

The first series of this magnificent government publication, comprising 16 large quarto volumes, from A to Z, began in 1880, and ended in 1895. In 1896 letter A of the second series was begun, and last fall vol. x, containing only part of letter M, was issued. Only one volume is published each year.

The publication contains an author and subject index to about three-fourths of all the medical and surgical literature of the world for all time, and about 90 per cent. of the literature for the past twenty years. It differs from the *Index Medicus* in that it contains everything, old or new, to be found in this great national library, while the *Index Medicus* only contains the new and current literature. A word or two will make it clear as to why the *Index Medicus* was deemed necessary.

As the "Index Catalogue" is published progressively, one or two letters of the alphabet at a time, it is manifestly obvious that it could not keep up with the current literature. For example, a physician who wishes to write a paper or examine into the literature of tuberculosis for the past ten or twelve years can get his references from the *Index Medicus*, whereas he would have to wait until about the year 1909 for the volume of the "Index Catalogue" containing that subject, or else come to Washington and consult the card catalogue. The *Index Medicus* obviates that difficulty, and it was for this reason it was begun as a private undertaking. But this would have been an impossibility had it not been, as I have stated, for the courtesy of the Surgeon-General in permitting the publishers to have access to the cards which were daily being indexed for the "Index Catalogue."

The classification of subjects in the *Index Medicus* necessarily differs very materially from that of the "Index Catalogue," which is more minute and covers a broader range, yet it is a most comprehensive classification, and to many of the users of both the former is very satisfactory and easily understood.

To Dr. Robert Fletcher, principal assistant librarian and chief editor of the *Index Medicus* during its entire existence, is due the credit of this most perfect work, but it would be difficult for any one to comprehend fully the vast amount of painstaking labor involved. Night after night and month after month during these 23 years he has burned the midnight oil in order that the medical profession should have their beloved index in all its perfectness on the day of publication. Had he not been the most methodical and systematic worker engaged in any literary work, he would long ago have broken down under the great strain. Not the slightest detail of arrangement or classification or typographical execution but what came under his rigid scrutiny. It was a peculiar task, requiring much thought and a perfect encyclopedic knowledge of medical nomenclature, a faithful attention to detail and unceasing toil and vigilance. The last revised proof sheets of the index, as they left his hands each month for the office of publication, formed, in fact, a miniature monthly edition of the

great "Index Catalogue," which has been and still is the wonder of the world. It brought to its few appreciative subscribers a perfectly classified index of the original writings of all the medical men of the world on every subject in medicine and surgery for the past month, and at the end of each volume it contained an author and subject index to every book and journal title, which of itself was a marvel of painstaking labor. The author index was particularly valuable for reference, furnishing, as it did, a complete bibliography of the writings of all medical men, whether of a book or a journal article.

HARRY O. HALL,

In Charge of Reading Room,
Library Surgeon-General's Office.

Medical Student Reputations.

BUFFALO, N. Y., Jan. 13, 1906.

To the Editor:—Alluding to your editorial in *THE JOURNAL*, January 13, on "Medical Student Reputations," allow me to point out that the whole trouble as to student rowdiness is of comparatively recent date and practically synchronous with the development of social life analogous to that at colleges. A small boy apologized for his too demonstrative puppy that he didn't know he was a dog, he thought he was folks. Exactly the same trouble ails our too demonstrative medical, law, pharmaceutical, veterinary and other professional students and, ridiculous as it may seem, even callow, ignorant boys making up deficiencies of arithmetic and learning bookkeeping and stenography at business "colleges."

All these boys are impressed with the notion that they are college students. If they have to spend their time on less ornamental and more immediately practical things than Latin and Greek and calculus and geology, they can, nevertheless, parade in their nightshirts or break in the doors of the college, or sing smutty songs about the faculty at a theater party.

Now, I haven't a word to say in extenuation of similar doings by real college students and I would not like to admit that the man who is preparing for lifework in a profession, is not engaged in a highly reputable and honorable occupation. There is not even any objection to calling a quiz society by Greek letters or having a sofa pillow with college colors on it, or maintaining a football team or in other reasonable ways copying at professional schools, the social life at colleges.

But, when in the attempt to make a "college" man of himself, the professional student indulges in foolish and destructive acts, the time has come not to appeal to his sense of honor or maturity, or to his realization of the dignity of his future profession, but to get at the root of his self-deception. Snobbishly if need be, plainly in any case, set it before him that he thinks he is folks when he is just plain dog. Let him understand that a professional school is not a college and that his lawless acts will not be covered by the mantle of glamor and social prestige which, rightly or wrongly, sometimes cover similar lawless acts by the genuine article.

A. L. BENEDICT, M.D.

A Simple Method of Making a Blood Count.

BALTIMORE, Jan. 16, 1906.

To the Editor:—I have a clinical suggestion to offer your readers which I have found valuable. It is so simple that it may be a very common procedure, but if so I am not aware of the fact. In the Thoma-Zeiss blood-counting apparatus the lines on the counting scale which may be seen plainly under the microscope when there is no blood on the slide do not always show out clearly when the drop of blood has been covered with the cover slip and the slide made ready for the examination. In accurate work, when a large number of fields are counted, a great deal of time is lost, in the aggregate, in getting the proper portion of the slide under the lens, especially when the higher powers are used. For some time I have used a method which, while very simple, is not mentioned in textbooks, and is not only a time saver, but also renders the blood count more accurate, as less manipulation of the slide is

required. The examiner places the slide under the microscope and gets the counting field in place, and then takes a lead pencil and outlines the slide on the stage of the microscope. Whenever one wishes to count a field, one has merely to insert the slide in this space of outlined area and the field is always directly under the lens ready to be counted. A great saving of time and patience is effected by this simple procedure, which means a great deal at the end of a week or month to those who make many blood examinations. The directions are simple: Draw the outline of the slide on the stage of the microscope when the counting field is in view. When, therefore, one wishes to count a field the slide is placed in this outlined area and the counting field is exposed at once.

B. B. BROWNE, JR., M.D.

Marriages

EDMOND DOAK, M.D., to Miss Ethel King, both of Taylor, Texas, January 17.

HERBERT PEASE, M.D., Slater, Iowa, to Miss Lois Felshaw of Collins, Iowa, January 17.

EMMA S. POWELL, M.D., and Frank W. Hill, both of Ottumwa, Iowa, January 10.

J. C. CUTLER, M.D., Bellevue, Wis., to Miss Jessie McMore of Verona, Wis., December 28.

JESSE EDWARDS HUNT, M.D., to Miss Marion Ingalls, both of Atchison, Kan., January 25.

JOSEPH H. VOGEL, M.D., to Miss Antoinette Crone, both of New Uhm, Minn., January 24.

A. M. WYLIE, M.D., Chester, S. C., to Miss Lizzie Hardeman of Louisville, Ga., January 24.

GEORGE W. KOCH, M.D., Akron, Iowa, to Miss Frances Gilbert of Geneseo, Ill., January 1.

P. McHUGH WALKER, M.D., to Miss Mabel Garnett, both of St. Thomas, N. D., January 10.

ROBERT W. HALE, M.D., to Miss Cora Bowman, both of Thermopolis, Wyo., December 23.

LOUIS WEISS, M.D., Newark, N. J., to Miss Henrietta Epstein of New York City, January 11.

CHARLES A. UNDERWOOD, M.D., Warsaw, Ind., to Miss Clara Moore of Covington, Ind., January 24.

HARRY E. DOWNS, M.D., Batson, Texas, to Mrs. Sarah E. Potter of Beaumont, Texas, January 11.

ANDREW D. HOIDALE, M.D., Tracy, Minn., to Miss Pauline Madeira of New Uhm, Minn., January 9.

DAVID CUMMINS MORTON, M.D., to Miss Mary Harris Ballard, both of Louisville, Ky., January 25.

R. T. VAN METRE, M.D., Dewar, Iowa, to Miss Marie C. Murdock of Kewanee, Ill., at Iowa City, January 17.

FRANK R. MILLER, M.D., Everett, Wash., to Miss Daisy Wright of Canton, Ill., at Galesburg, Ill., January 10.

JOHN A. COPELAND, M.D., Coleridge, Neb., to Miss Laura McKay of Sioux City, Iowa, at West Side, Iowa, January 10.

Deaths

Emerson Warner, M.D., Harvard University Medical School, Boston, 1863; for twenty-five years consulting surgeon at Worcester City Hospital; since 1871 consulting surgeon to the Memorial Hospital; for 17 years a member of the attending staff of the City Hospital; for many years president of the Worcester District Medical Society, and councillor of the Massachusetts Medical Society; a member of the legislature in 1884 and 1885; and for twenty years a member of the local school board, died at his home in Worcester, December 30, from endocarditis, after an invalidism of twenty years, aged 74.

Swan Moses Burnett, M.D., Bellevue Hospital Medical College, New York City, 1870; Ph. D., Georgetown University, 1890; a member of the American Medical Association, Washington Academy of Sciences, and American Ophthalmological Association; professor of ophthalmology and otology, University of Georgetown; professor of ophthalmology, Washington Post-graduate Dispensary and Emergency Hospital; ophthalmic sur-

geon to Providence and Children's hospitals, Washington; a prolific writer on ophthalmologic subjects, died suddenly at his home in Washington, D. C., January 18, from heart disease, aged 58.

Hiram S. McConnell, M.D., Bellevue Hospital Medical College, New York City, 1875; a member of the American Medical Association, Medical Society of the State of Pennsylvania, Western Pennsylvania Medical Association, and Beaver County Medical Society; for three terms a member and secretary of the State Board of Medical Examiners; for twenty years a member and most of that time president of the New Brighton board of education; a very prominent practitioner of the Beaver Valley, died at his home in New Brighton, Pa., January 15, from pneumonia, after an illness of four days, aged 57.

George Chismore, M.D., Medical College of the Pacific, San Francisco, 1873; a member of the American Medical Association; medical officer of the American division of the Western Union Russian-American extension from 1865 to 1867; acting assistant surgeon, United States Army, on frontier duty from 1867 to 1872; one of the foremost surgeons of the Pacific Coast, died at his home in San Francisco, January 12, from pneumonia, after an illness of five days, aged 65.

James D. Wright, M.D., Medical College of Ohio, Cincinnati, 1855; once a member of the Iowa legislature; one of the organizers of the State Board of Agriculture and a trustee of the State Agricultural College at Ames; surgeon of the Forty-seventh Iowa Volunteer Infantry in the Civil War, died suddenly at the home of his son in Chariton, Iowa, December 26, from cerebral hemorrhage, aged 85.

John F. Miller, M.D., Jefferson Medical College, Philadelphia, 1858; superintendent of the State Hospital at Goldsboro, N. C., for the colored insane; surgeon of the Twenty-fourth North Carolina Infantry, C. S. A., in the Civil War, died suddenly at his residence in Goldsboro, January 9, from heart disease, aged 71.

Oswald M. Justice, M.D., College of Medicine and Surgery of the University of Minnesota, Minneapolis, 1897; formerly of Elysian, Minn., and coroner of Le Sueur County; convicted of crime in California and sentenced to six years' imprisonment, committed suicide in his cell by strangulation recently.

Stansmore Vivian, M.D., Bellevue Hospital Medical College, New York City, 1885; attending physician at the Iowa County (Wis.) poorhouse; chairman of the school board of Mineral Point, died at his home in that city from cerebral hemorrhage, January 4, after an illness of a few hours, aged 46.

Harry A. McGronen, M.D., Illinois Medical College, Chicago, 1898, of Brooklyn, N. Y., assistant dermatologist in the Brooklyn Central Dispensary, was instantly killed January 12, by being crushed by a freight elevator in a department store in New York City, aged 35.

B. Franklin Watkins, M.D., Department of Medicine of the University of Pennsylvania, Philadelphia, 1852; surgeon in the Confederate service during the Civil War; for many years a practitioner of Bryan, Texas, died at his home in that city, December 25, aged 73.

Charles Nelson Miller, M.D., Bellevue Hospital Medical College, New York City, 1883; an active member of the Morris District Medical Society and of the Tri-county Medical Society, died at his home in German Valley, N. J., from nephritis, January 14, aged 43.

Simeon T. Yancey, M.D., Medical College of Indiana, Indianapolis, 1874; state senator from Hancock County, Ind., from 1880 to 1882; state oil inspector in 1884; a veteran of the Civil War, died suddenly at his home in Fortville, Ind., January 4, aged 70.

S. D. Dodge, M.D., Jefferson Medical College, Philadelphia, 1866, at one time physician to the Arkansas School for the Blind, Little Rock, died at the home of his sister in that city, January 9, from bronchopneumonia, after an illness of eight days, aged 65.

William M. Hill, M.D., for more than forty years a practitioner of Hopkinsville, Ky., twice chairman of the board of council, and for several years a councilman, died at his home in Hopkinsville, from senile debility, January 15, aged 78.

Thomas Austin Harris, M.D., Louisville Medical College, 1884; formerly of Rosedale, Miss.; a member of the American Medical Association, and state, tri-state and county societies, died recently from dropsy in Tishomingo, I. T., aged 48.

Clark R. Warren, M.D., Rush Medical College, Chicago, 1876, a veteran of the Civil War, and for many years a practitioner of Otis, Ind., died at his home in Chicago, January 2, from brain tumor, after an illness of eight weeks, aged 65.

Richard Armstrong Heath, M.D. University of Edinburgh, Scotland, 1891, of New York City, died at St. Luke's Hospital, New York City, from pneumonia, January 17, four days after a fall from a street car in which his shoulder was injured, aged 42.

Charles L. Webster, M.D. College of Physicians and Surgeons of Chicago, 1894, a member of the Cleveland Academy of Medicine, died at his home in Cleveland, December 22, from cancer, after an illness of six months, aged 43.

William I. Wallace, M.D. University of Michigan Homeopathic Medical College, Ann Arbor, 1884, died from consumption at his home in Ilmet, Cal., December 14, after a prolonged illness, aged 42.

Wellington B. Briggs, M.D. University of Nashville (Tenn.) Medical Department, 1862, secretary of the Brazos Valley Medical Association, was found dead in his home in Easterly, Texas, January 14.

J. Lee Beck, M.D. Boston University School of Medicine, 1879, of Vineland, N. J., was struck by a train and instantly killed, January 18, while driving over a grade crossing near Norma, N. J.

Isaac Cooper, M.D. Hahnemann Medical College, Philadelphia, 1868, died at his home in Trenton, N. J., January 17, from cerebral hemorrhage, after an illness of three days, aged 61.

George W. Watkins, M.D. (33 Years' Practice), Kentucky, 1893, a practitioner of Spottsville, Ky., for 45 years, died from senile debility at his home in that place, December 21, aged 78.

Benjamin Liles Askew, M.D. (Twenty-five Years' Practice, Ohio, 1890), a veteran of the Civil War, died suddenly at his home in Jefferson, Ohio, from heart disease, January 7, aged 71.

Joseph T. Clymer, M.D. Eclectic Medical Institute, Cincinnati, 1886, died at his home in Monticello, Ind., January 10, from acute gastritis, after an illness of a few hours, aged 53.

Henry S. Foster, M.D. Jefferson Medical College, Philadelphia, 1892, of McKeesport, Pa., died in the hospital in that city, January 13, from the effects of an overdose of morphin.

Augustus S. Wright, M.D. Hahnemann Medical College, Philadelphia, 1850, died at his home in Santa Rosa, Cal., December 22, from pneumonia, after an illness of three days, aged 80.

Joseph D. Hoare, M.D. New York University, New York City, 1887, of Brooklyn, N. Y., died at the Steuben Sanitarium, Hornellsville, N. Y., January 9, after a long illness, aged 40.

Philip F. Lightfoot, M.D. Years of Practice, Illinois, 1887, a veteran of the Civil War, died at his home in Murrayville, January 14, shortly after a fracture of the hip, aged 82.

William Bonnell Hall, M.D. Department of Medicine of the University of Pennsylvania, 1855, a Confederate veteran, died at his home in Lowndesboro, Ala., January 14, aged 71.

Henry W. Whitfield, M.D. University of Nashville (Tenn.) Medical Department, 1858, died at his home near Bakerville, Tenn., January 6, after a short illness, aged 74.

James F. Logan, M.D., a practitioner for about fifty years, died at his home in Clarksville, Iowa, January 6, from influenza, after an illness of two weeks, aged 78.

William M. White, M.D. Albany (N. Y.) Medical College, 1886, died at his home in Amsterdam, N. Y., from pneumonia, December 29, after a short illness, aged 49.

Willard T. Greenfield, M.D. Miami Medical College, Cincinnati, 1882, of McKean, Pa., died at his father's house in Erie, Pa., January 5, from heart disease, aged 46.

Melite E. Chartier, M.D. University of Paris, France, died at Biloxi, Miss., where he had practiced for many years, January 7, from alcoholism, aged about 50.

Jacob A. Heller, M.D. Jefferson Medical College, Philadelphia, 1881, died suddenly at his home in Factoryville, Pa., January 12, from heart disease, aged 55.

Philip S. Orndorff, M.D. (Years of Practice, W. Va.), a Confederate veteran, died at his home in Rio, W. Va., January 16, from paralysis, aged 72.

William E. Hodges, M.D. University of Maryland School of Medicine, Baltimore, 1856, died at his home in Ellicott City, Md., January 16, aged 75.

William C. Poe, M.D. University of Maryland School of Medicine, Baltimore, 1865, died at his home in Baltimore, January 20, aged 62.

William Armstrong, M.D., member of the College of Physicians and Surgeons of Ontario, 1869, died at Toronto, January 11, aged 79.

James Christopher Deaton, M.D. Medical College of Virginia, Richmond, 1868, died at his home in Richmond, Va., January 12.

James H. DeWolf, M.D. Jefferson Medical College, Philadelphia, 1878, died at his home in Baltimore, January 17, aged 51.

William H. Bright, M.D. Rush Medical College, Chicago, 1865, died at his home in Martinsburg, Ind., January 13, aged 74.

Deaths Abroad.

C. L. van der Burg, M.D., of Utrecht, Holland, died recently, aged 60. He practiced in the Dutch East Indies for more than twenty years, and his works on the medical-geographic pathology of the East Indies and tropical diseases in general are accepted as standard authorities on the subject. He had been the editor of *Janus* since the death of its founder, Peypers, about a year ago.

Karoline Knur, M.D., Frankfurt on the Main, assistant physician to the public insane asylum, one of the first medical women to qualify in Germany and the first to devote herself to psychiatry, died recently, aged 39.

K. Hodlmoser, M.D., one of the collaborators on the *Wien. klin. Rundschau*, and author of a number of articles on internal medicine, died at his post in Sarajevo, Austria, early in January.

H. Rahl-Ruckhard, M.D., professor of anatomy at Berlin and author of a number of works on comparative anatomy and simulation of ocular disturbances, died at Berlin, December 20, aged 67.

H. Schmaus, M.D., professor of pathologic anatomy at Munich, and author of text-books on his specialty, died at Munich, December 12, aged 43.

E. Kusy von Dubrav, M.D., chief of the sanitary service in Austria, died at Vienna, Dec. 19, 1905, aged 61.

P. Jacobs, M.D., the senior of the physicians of Germany, died at Cologne, January 2, aged 96.

A. Sachsaler, M.D., professor of ophthalmology at Graz, died December 22, aged 41.

F. Hosch, M.D., professor of ophthalmology at Basle, died recently, aged 58.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

MEDICAL DICTIONARY—RECIPROCITY WITH OHIO AND WEST VIRGINIA.

W. Va., Jan. 17, 1906.

To the Editor:—(1) What is probably the best and most nearly "up-to-date" medical dictionary for the use of the general practitioner? (2) What states have reciprocity agreements with Ohio and West Virginia boards? J. H. B.

ANSWER.—Gould's (Blakiston Co., \$10 net); or Dorland's (Saunders & Co., \$5). (2) With Ohio: Indiana, Illinois, Maine, Michigan, Nebraska and Wisconsin. With West Virginia: None.

State Boards of Registration

COMING EXAMINATIONS.

NEW YORK State Boards of Medical Examiners, Albany, January 30-February 2. Secretary, Charles F. Wheelock, Albany.

NEBRASKA State Board of Health, State House, Lincoln, February, 7-8. Secretary, George H. Brash, Beatrice.

California December Report.—Dr. Charles L. Tisdale, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at San Francisco, Dec. 20-22, 1905. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 80, of whom 37 passed and 43 failed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|--|---------|---------------|-----------|
| Cooper Med. Coll. | (1905) | 75, 75.5, 78, | 82.4 |
| McGill Med. Coll. | (1888) | | 85.6 |
| College of P. and S., San Francisco (1904) | 76.1; | (1905) | 75, 73.3, |
| | 78.6. | | |

| | |
|--|-------------------------------|
| University of California..... | (1905) 76, 79.2; 84, 87, 90.1 |
| University of Pennsylvania..... | (1905) 88, 89 |
| Bellevue Hosp. Med. Coll. | (1895) 76; (1905) 77.1 |
| Omaha Med. Coll. | (1901) 76.3 |
| College of P. and S., Los Angeles | (1905) 75.2, 79.4 |
| Univ. of Southern California..... | (1905) 75.2, 79.4 |
| Californian Med. Coll. | (1904) 76, 79.1 |
| Queen's University, Ont. | (1903) 79.1 |
| Cleveland Med. Coll. | (1895) 76.1 |
| Columbia University..... | (1904) 75.2; (1905) 77.7 |
| Northwestern University..... | (1905) 75.1 |
| Washington University..... | (1903) 75.1 |
| Med. Surg. School of Lisbon..... | (1896) 75.1 |
| University of the City of New York..... | (1891) 77.5 |
| College of P. and S., Chicago, (1901) 75.2; (1904) 89.5; (1905) 79.6 | |
| Hahnemann Med. Coll., San Francisco..... | (1905) 79.3 |
| University of Virginia..... | (1892) 76.5 |
| University of Toronto..... | (1905) 79.8 |

FAILED.

| | |
|--|---------------------------------------|
| Hahnemann Med. Coll., Chicago..... | (1903) 64.5; (1905) 64.2 |
| Dearborn Med. Coll., Chicago..... | (1904) 72.8 |
| Jefferson Med. Coll. | (1898) 53.7 |
| Jefferson Med. Coll. | (1903) 60.6; (1905) 59, 72.2 |
| University of Iowa..... | (1890) 51.7 |
| Chicago Homeo. Med. Coll. | (1879) 68.6; (1886) 61.3, (1903) 65.1 |
| Univ. of Southern California..... | (1904) 70.5; (1905) 69.5 |
| Howard University..... | (1887) 68.5 |
| College of P. and S., San Francisco, (1902) 70.2; (1904) 54.3, (1905) 64.2, 70.8 | |
| University of Pennsylvania..... | (1892) 71.2; (1899) 59.2 |
| University of Virginia..... | (1897) 67.7 |
| American College of Med. and Surg. | (1905) 67.3 |
| Cooper Med. Coll. | (1903) 57; (1904) 69.4 |
| University of Michigan..... | (1872) 52.7 |
| Univ. Med. Coll. | (1891) 56.7 |
| Hospital Coll. of Med. | (1891) 56.7 |
| Crichton Med. Coll. | (1903) 61.5 |
| Woman's Hosp. Med. Coll. | (1881) 63.6 |
| Georgetown Med. Coll. | (1905) 63.6 |
| Northwestern University..... | (1905) 70.3 |
| College of P. and S., Chicago..... | (1888) 70.7 |
| Keokuk Med. Coll. | (1901) 63.8 |
| Georgetown Med. Coll. | (1906) 63.7 |
| University of Vermont..... | (1905) 70.7 |
| University of New York..... | (1884) 68.2 |
| Chicago Med. Coll. | (1900) 70.4 |
| University of Virginia..... | (1907) 67.7 |
| American Med. Miss. Coll. | (1906) 64.5 |
| Bellevue Hosp. Med. Coll. | (1887) 68.1 |
| University of Jena, Germany..... | (1888) 66.5 |
| Georgetown Med. Coll. | (1905) 63.6 |
| Columbia University..... | (1907) 67.6 |

* Took only 4 subjects, dropped out.
 † Took only 2 subjects, dropped out.

Delaware June Report.—Dr. P. W. Tomlinson, secretary of the State Board of Medical Examiners of Delaware, representing the President and Fellows of the Medical Society of Delaware, reports the written examination held at Dover, Dec. 12-14, 1905. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The number of applicants examined was 5, of whom 2 passed and 3 failed. Among those who failed was one individual whose papers were thrown out because he failed properly to sign the declaration; had his papers been considered his average would have been 78. The following colleges were represented:

| | PASSED | Year. | Per |
|------------------------------|-------------|-------|-------|
| College..... | | Grad. | Cent. |
| University of the South..... | (1905) 78.7 | | |
| Georgetown University..... | (1905) 89 | | |

FAILED.

| | |
|---------------------------|------------------------|
| Baltimore University..... | (1902) 67.9; (1903) 66 |
|---------------------------|------------------------|

Florida Examination Questions.—At the examination held by the State Board of Medical Examiners, at Jacksonville, October 10-11, 1905, the following questions were asked:

ANATOMY.

1. What bones form the roof of the mouth? 2. Give the number of the bones and name the regions of the spine. 3. What muscles form the calf of the leg? 4. Mention the cavities and valves of the heart. 5. What arteries unite to form the basilar artery? 6. Give the average length of the alimentary tract and state its chief functions. 7. What is the prostate gland and where is it situated? 8. What are Peyer's glands and where are they found? 9. Mention the coverings of the brain. Describe one of these coverings. 9. Mention the lobes of the liver and describe one of them. 10. What veins convey arterial blood?

PHYSIOLOGY.

1. How many heart sounds are there, and to what are they due? 2. Describe the chances the blood undergoes as it flows through the lungs. 3. Give the composition of human milk. 4. Define digestion and enumerate its stages. 5. Define secretion and excretion. 6. What is the function of the retina? 7. Describe the fetal circulation. 8. Give the physiology of menstruation. 9. Give the specific gravity of urine. 10. What do you know of the functions of the spleen?

RECOVERY.

1. What is pus? Of what is it produced and by what symptoms can you determine its presence in tissues? 2. What is a wound? Give general classification of wounds. 3. Describe conditions of injury to a member or limb that would justify if not demand amputation. 4. When serious wounds are sustained, what symptoms should first engage the attention of the surgeon? How would you combat those symptoms? 5. In ligation of superficial femoral artery you would avoid injuring what important vessel? What would be the results of such injury? 6. What would you do for

complicated fracture involving the elbow joint? 7. Name briefly the common but important preparations for a modern operation: Preparation of the patient (3); of part to be operated on (3); of operator and assistants (2) and of instruments and appliances (2). 8. Name different methods of amputation. Which method would you adopt in amputation of thumb at carpo-metacarpal articulation? 9. With following history of injury, what symptoms would you expect and how would you treat such a patient: A severe blow with stick or piece of timber in region of left parietal bone followed by considerable induration of scalp and a marked indentation of cranium? 10. What important tissues and organs would be wounded and how treat the following wound made by a 38-caliber pistol ball: Called within ten minutes, find patient bleeding considerably from wound in right axilla, entrance 1 inch below and 1 inch to right of right nipple; wound of exit just below 11th rib and near point of 12th rib posteriorly on same side?

GYNECOLOGY.

1. Describe briefly the Fallopian tubes. 2. What is meant by ectopic gestation? 3. At what age does the menstrual function become established? When does it cease and what is this cessation called? 4. Give treatment for retroversion of the uterus. 5. What is the average depth of the normal uterus? 6. Give symptoms and treatment of pelvic peritonitis. 7. What purpose do the round ligaments serve and how may they be made to correct the displacement of the uterus? 8. What is endometriosis? 9. Name a frequent cause of leucorrhoea. 10. What instruments are needed in curing the uterus and how would you sterilize them?

THERAPEUTICS.

1. Write a prescription for insomnia due to low blood pressure, and give outline of treatment. 2. (a) What is alcohol? (b) Give your idea of its value as a hypnotic. 3. Mention the various forms of malaria and outline of treatment. 4. What are alteratives and what are the ones most frequently used? 5. Apomorphia. Name official preparation; method obtaining it and for what it is given. 6. What are antiperiodics and most generally used? 7. Mention the ingredients of volatile liniment. What is its official name? 8. From what source is cocaine obtained? How and for what purpose is it principally used? 9. State some of the circumstances necessitating modification of the usual dose of Young's rule for arriving at the proper dosage for children. 10. Mention some of the changes in the new Pharmacopoeia affecting the strength of certain tinctures and give the strength of all potent tinctures.

OBSTETRICS.

1. What are the abnormalities of menstruation? Give their etiology and treatment. 2. What are the functions of the placenta? 3. Give the obstetric landmarks of the superior and inferior straits. 4. What changes occur in the breast during pregnancy? 5. What are the subjective signs of pregnancy? 6. Differentiate uterine bruit and umbilical souffle. 7. How may the knee be distinguished from the elbow when presenting? 8. Describe the symptoms and give the management of an incomplete abortion. 9. Into what stages is labor divided and when do these stages begin and end? 10. Describe the mechanism of labor in L. O. A. presentation.

CHEMISTRY.

1. Describe the method of generating hydrogen and mention its properties. 2. Give the physical and chemical properties of hydrochloric acid. 3. Describe atmospheric air and give its composition. 4. Name chemical antidote for arsenical poisoning, how prepared and administered. 5. Mention antidotes in mercury poisoning also antidotes in poisoning with mineral acids. 6. Describe the properties and manufacture of iodoform. 7. Describe the symptoms of poisoning by atropin. 8. Define (a) chemical mixture, (b) element, (c) molecule, (d) chemical formula. 9. What metal is deposited in the two services. The board will use the terms: (a) amorphous, (b) alkali, (c) water of crystallization, (d) amalgam, (e) nascent state.

The Public Service

Army Changes.

Memorandum of changes of stations and dates of medical officers, U. S. Army, week ending January 20:

Havard, Valery, asst. surgeon-general, Lynch, Charles, asst. surgeon, Darnall, Carl R., asst.-surg., appointed members of a board of medical officers of the Army and of the Navy, to consider improvements in the first-aid dressings and uniformity of equipment for the medical department of the two services. The board will meet in Washington, D. C., at such time as shall be designated by the Surgeon-General of the Army.

Clark, John A., asst.-surgeon, leave of absence extended thirty days.

Bourke, James, asst.-surgeon, relieved from further duty at Fort Sheridan, Ill., and from temporary duty at Medical Supply Depot, New York City, and assigned to duty as transport surgeon on the *Killbuck*.

Kirkpatrick, Thomas J., asst.-surgeon, having arrived at San Francisco, Cal., will proceed to Fort Montrie, S. C., and report for duty.

Barney, Chas. N., asst. surgeon, assigned to duty at General Hospital, Fort Havard, N. M.

Scott, George H., asst.-surgeon, relieved from duty in the Army Transport Service, and ordered to Fort Duchesne, Utah, for duty.

Monroff, Wm. H., asst.-surgeon, having arrived at San Francisco, Cal., will proceed to Fort McPherson, Ga., and report for duty.

Pinquard, Joseph, contract surgeon, returned to Fort Leavenworth, Kan., from leave of absence.

Parkman, Wallace E., contract surgeon, granted an extension of leave from March 1 to July 1, 1906.

Lauderdale, Clarence E., dental surgeon, returned to Fort Sam Houston, Texas, from leave of absence; ordered to Fort Logan H. Root, Ark., (ill February 10; Fort Reno, Okla., to March 15; Fort Sill, Okla., to May 15).

White, J. Samuel, contract surgeon, relieved from further duty at Fort Snelling, Minn., and ordered to Governor's Island, N. Y., to accompany First Infantry to Philippine service.

Ferguson, James B., contract surgeon, granted leave of absence for two months.

Woods, Oscar W., contract surgeon, relieved from duty at General Hospital, Fort Bayard, N. M., and ordered home, Roanoke, Va., for annulment of contract.

Carson, Samuel K., contract surgeon, ordered from his home, Riverton, Va., to Governor's Island, N. Y., to accompany the First Infantry thence to Philippine service.

MacFar, Fred S., contract surgeon, ordered to duty at Fort Adams, R. I., when relieved from duty with First Infantry.

Eber, Albert H., contract surgeon, ordered from his home Saint Clair, Mich., to Fort D. A. Russell, Wyo., to accompany the Sixth Battalion Field Artillery thence to Philippine service.

Millickin, John D., dental surgeon, ordered from San Francisco, Cal., to Fort Leavenworth, Kans., for duty.

Hallwood, James R., contract surgeon, arrived at Washington, D. C., and granted leave of absence for two months.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending January 20:

Page, John E., P. A. surgeon, ordered to the *Franklin*, Norfolk, Va. (Orders issued by Commander-in-Chief of Atlantic Fleet.)

MacFar, Fred S., medical inspector, detached from the *Wisconsin* and ordered to the *Ohio*.

Barber, G. H., surgeon, detached from the *Ohio* and ordered to the *Wisconsin*.

Thompson, J. C., surgeon, detached from the *Locton* and ordered to the *Cincinnati*.

Bucher, W. H., surgeon, detached from the *Cincinnati* and ordered to the *Locton*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending January 17:

Williams, L. L., surgeon, directed to proceed to Wilmington, N. C., for the purpose of making an inspection of the station.

Stimpson, W. G., P. A. surgeon, granted leave of absence for one month from January 15, 1906.

Cofer, L. E., P. A. surgeon, granted leave of absence for twenty days from January 19.

Clark, Tallaferro, P. A. surgeon, directed to proceed from Philadelphia to Easton, Pa., for special temporary duty on completion of which to rejoin his station.

Richardson, T. F., P. A. surgeon, granted leave of absence for seven days from January 13.

Kling, W. W., P. A. surgeon, relieved from duty at San Juan, P. R., as chief quarantine officer, and directed to proceed to Washington, reporting at the Bureau for orders.

McFar, Fred S., medical inspector, granted leave of absence for two months from January 15, on account of sickness.

Burkhalter, J. T., P. A. surgeon, granted leave of absence for one month from January 24.

Gibson, L. P., acting asst.-surgeon, granted six days' leave of absence from January 16.

Stearns, W. L., pharmacist, granted seven days' leave of absence from January 13, 1906, under the provisions of Paragraph 210 of the Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended January 19:

SMALLPOX—UNITED STATES.

California: Imperial and vicinity, Jan. 5, 7 cases; San Francisco, Dec. 23-30, 4 cases.

Delaware: Wilmington, Jan. 6-13, 2 cases.

District of Columbia: Washington, Jan. 6-13, 4 cases.

Florida: Jacksonville, Jan. 6-13, 3 cases; Mascott, 1 case; West Palm Beach, 1 case; Vero, 1 case; St. Petersburg, 7 cases.

Illinois: Chicago, Jan. 6-13, 1 case.

Indiana: Lafayette, Jan. 1-8, 1 case.

Louisiana: New Orleans, Jan. 6-13, 6 cases.

Maryland: Baltimore, Jan. 6-13, 5 cases.

Missouri: St. Louis, Jan. 6-13, 2 cases.

New York: Buffalo, Jan. 6-13, 1 case; New York, 2 cases.

Ohio: Cincinnati, Jan. 5-12, 2 cases; Dayton, Jan. 6-13, 1 case.

South Carolina: Camden, Jan. 6-13, 1 case.

Washington: Spokane, Dec. 1-31, 2 cases.

Wisconsin: Appleton, Jan. 6-13, 4 cases; La Crosse, 1 case.

SMALLPOX—FOREIGN.

Brazil: Pernambuco, Nov. 15-Dec. 15, 80 deaths; Rio de Janeiro, Dec. 3-10, 1 death.

Chile: Iquique, Dec. 2-9, 20 cases, 6 deaths.

France: Paris, Dec. 23-30, 13 cases.

Gibraltar: Dec. 18-24, 8 cases, 1 death.

Great Britain: Cardiff, Dec. 23-30, 1 case.

India: Bombay, Dec. 12-19, 12 deaths; Karachi, Dec. 10-17, 1 case.

Italy: Genoa, Dec. 21-28, 26 cases; Palermo, Dec. 16-23, 2 cases.

Russia: Odessa, Dec. 9-16, 9 cases, 1 death; St. Petersburg, Dec. 2-9, 6 cases.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, Dec. 3-10, 7 cases, 1 death.

Cuba: Habana, Dec. 30-Jan. 16, 2 cases, 2 deaths.

Mexico: Vera Cruz, Dec. 23-30, 1 case, 1 death.

Nicaragua: Managua, Dec. 9-16, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, Nov. 18-Dec. 2, 5 cases, 4 deaths.

CHOLERA—FOREIGN.

India: Madras, Dec. 9-15, 8 deaths.

Russia: Lomza District, Dec. 7-17, 4 cases, 4 deaths; Mazow, 11 cases, 4 deaths; Ostrow, Dec. 1-17, 3 cases.

PLAQUE—INSULAR.

Philippine Islands: Manila, Nov. 18-25, 1 case, 1 death.

PLAQUE—FOREIGN.

Brazil: Pernambuco, Dec. 1-15, 2 deaths; Rio de Janeiro, Dec. 3-10, 7 cases, 6 deaths.

Great Britain: Liverpool, Dec. 22, on S. S. *Oropesa*, from South American ports.

India: General, Nov. 18-Dec. 16, 11,376 cases, 8,861 deaths; Bombay, Dec. 12-19, 8 deaths; Karachi, Dec. 10-17, 6 cases, 6 deaths.

Medical Organization

Indian Territory.

SIXTEENTH DISTRICT MEDICAL SOCIETY.—Physicians of this district, about 20 in number, met at Ada, January 12, and organized a district society on the standard plan. Dr. M. W. Ligon, Ada, was elected temporary chairman, and Dr. Helge Browall, Sulphur, secretary. Permanent organization was then effected, and Dr. James W. Gilbert, Roff, was elected president; Dr. Bedford F. Sullivan, Stonewall, vice-president; Dr. William H. Greer, secretary, and Dr. W. D. Akers, treasurer. The next meeting will be held at Roff, March 1.

Ohio.

HURON COUNTY MEDICAL SOCIETY.—The regular meeting of this society was held at Chicago, Ohio, December 14. This society has applied for a charter from the Ohio State Medical Association and made up its list of charter members at this meeting.

MILLCREEK VALLEY MEDICAL SOCIETY.—This society has been established with the following officers: President, Dr. Wilson S. Saffin, Carthage; vice-president, Dr. William O. C. Harding, Elmwood Place, and secretary and treasurer, Dr. J. W. Thiel, St. Bernard. The main object of the society is the exposure of dishonest persons among the clientele of the valley who will not pay debts, although able to do so. Lists of these persons will be mailed by the secretary to each member every two weeks, and the constitution provides as follows: "It is understood that no member of this society will furnish professional services to any persons known as a 'dead beat' unless he is paid in advance for his services or has good private reasons for doing so."

MORGAN COUNTY MEDICAL SOCIETY.—Dr. Edmund C. Brush, Zanesville, counselor for the eighth district, met the physicians of Morgan County at McConnellsville, January 5, and reorganized the county society on the standard plan. Dr. Leroy S. Holcomb, Pennsville, was elected president, and Dr. J. E. Brown, McConnellsville, secretary. This completes the organization of the eighth district.

Hawaii.

HAWAIIAN MEDICAL SOCIETY.—The annual meeting of this society was held at Honolulu, Nov. 20, 1905. The afternoon session was devoted to reading papers and discussions. The following papers were read: "Acquired Race Immunity," Dr. Carl Ramus, U. S. P. H. and M.-H. Service; "Purulent Inflammation of the Middle Ear and Mastoid Cells," Dr. William G. Rogers, Honolulu; "Injuries of Bones, Muscles and Ligaments and Their Treatment by Massage and Movement," Dr. Edward Armittage, Wailuku, Maui; "Constipation; Its Cause, Effects and Treatment," Dr. F. Howard Humphris, Honolulu; "Beriberi and Some of Its Clinical Aspects from Personal Observation," Dr. Charles B. Cooper, Honolulu; "Hawaiian Fever and Typhoid Fever," by Drs. Ica, Mori, Uchida and Kuramoto, was read by Dr. Mori, Honolulu. The matter of local quarantine and purity of the water supply of Honolulu was discussed. The following officers were elected: President, Dr. James T. Vayson, Honolulu; vice-president, Dr. Edward Armittage, Wailuku; and secretary, Dr. Archibald N. Sinclair, Honolulu. In the evening the annual banquet of the society was held, at which a number of guests, including officers of the army, navy and Public Health and Marine-Hospital Service, were present.

What Can the County Society Do?

VII. CONTRACT PRACTICE.

The subject of contract and lodge practice is one of the most difficult of the practical professional problems now being faced by physicians. There is pretty general agreement that certain forms of contract work are permissible. The question is largely one of fees and of regard for the patients of other physicians. In some localities, e. g., mining regions,

certain forms of contract practice seem too firmly established to be eradicated. Here and elsewhere the effort should be to keep these methods of practice at the lowest possible point, and especially to keep out of the country the more debasing forms.

So the whole matter should constitute the program of a meeting, and every endeavor should be made to see that all sides of the problem are properly presented. After full discussion some endeavor should be made, by resolution or otherwise, that will set the local limits to the extension of the practice. Conditions of professional work vary so greatly from county to county and from state to state that it is in such matters as this that the profession realizes the wisdom of that provision in our present form of organization which permits, and, indeed, compels, each county society to settle its own problems in accordance with local needs.

VIII. INSURANCE WORK.

There are various phases of insurance medicine that need discussion in the medical societies. In regard to casualty insurance there should be concerted action among physicians to aid each other in thwarting fraudulent claims. Public sentiment should be so aroused that the locality will become too warm for the occasional renegade physician who shares in malingering. The fees for casualty work and for life insurance examinations should be discussed and put on an equitable plane. Professional sentiment should be so aroused and cultivated that no decent medical man will dare to make life insurance examinations at \$65 a month for 50 examinations and \$1 each for examinations in excess of 50 monthly. The good life insurance companies pay a straight \$5 fee and physicians know which they are.

The discussion should include reference to the inadequate fees of the fraternal orders which lead physicians to make slovenly and superficial physical examinations and bring disrepute on medicine, both in the eyes of the laity and of insurance executives. The county society may well endeavor to create a sentiment among its members favoring thoroughness in insurance work, for which good fees shall be asked. So long as insurance work is carelessly done by any large number the fees will be low, and so long as physicians pretend that in examining for some lodge they make a thorough examination for \$1 or \$1.50, they must not be surprised at finding it a difficult matter to get all the old-line companies to pay the \$5 fee.

Each county society can well afford to devote some time to this question in the endeavor to raise the standard of professional accomplishment and thereby gain a greater compensation for its members. In different localities, too, other phases of insurance work will suggest themselves as pertinent subjects for discussion.

(To be continued.)

Society Proceedings

BOSTON TUBERCULOSIS EXHIBIT.

Held in Boston, Dec. 28, 1905-Jan. 7, 1906, under the auspices of the Massachusetts State Board of Health and the Boston Association for the Relief and Control of Tuberculosis.

The great success of this illustrated exhibition is shown by the attendance, which reached 24,560, 50 per cent. larger than the New York attendance, which covered more days' time. A large part of the material was loaned by the National Association for the Study and Prevention of Tuberculosis. The active agent in the preparation was the Boston Association for the Relief and Control of Tuberculosis, of which Dr. Edward O. Otis is president and Alexander M. Wilson secretary.

By vote of the Massachusetts Legislature \$2,000 was appropriated for the purpose, and the State Board of Health was designated as the agent of the state in the matter. The co-operation between the two bodies was admirable. Dr. George B. Magrath, for the Board of Health, personally attended to many details. The daily press was most cordial, devoting large space to full reports of the meetings and printing extended advance notices. This adequate information of the public was one of the new features and very valuable.

To secure proper instruction of those attending, 125 guides volunteered. These were medical men and women, many of them well known in the profession. Besides giving an entire evening, just before the opening, in order that they might themselves learn what was to be seen, they came day after day, for a few hours at a time, and carefully explained the different features to the visitors.

The exhibit was made up largely of photographs of various great sanatoria of this country and of Europe, tabulated statistics, models of cottages, tents, rooms and apparatus, drawings and photographs of diseased tissues, samples of the best material, etc. A striking illustration was two rooms, side by side, lighted in the same way. One an example of an average tenement house, the other, the same size, clean, pure and attractive. An exhibit not shown in New York and attracting much popular interest, was a dozen high-power microscopes, under which are shown, by competent enthusiastic experts, the bacilli and the results of their activity in the tissue.

Another valuable feature of this exhibit was a carefully prepared program. In the hall adjoining the exhibition hall, there was a daily lecture and discussion at 3 p. m., and often in the evening a lecture illustrated by lantern slides. Here, on successive days, attempts were made to instruct employers and employes, physicians and nurses, boards of health, philanthropic organizations, institution superintendents, teachers, as well as the alien races, Hebrews and Italians, among whom consumption is now so common. These special exercises were appreciated, for often many hundreds were turned away because every available space had been occupied.

The chairman was in every case one whom the constituents recognized as a leader, e. g., Dr. Arthur T. Cabot, president of the Massachusetts Medical Society; Dr. Samuel H. Durgin, chairman of the Boston Board of Health; George H. Martin, secretary State Board of Education. Gen. Thomas Sherwin, president of New England Telegraph and Telephone Co., and John F. Tobin, president of the Boot and Shoe Makers' Union. The speakers included Talcott Williams, Esq., of Philadelphia, Prof. William T. Councilman, Dr. Vincent Y. Bowditch, Prof. Harold C. Ernst, Dr. Theobald Smith, Dr. E. H. Bradford, Prof. William T. Sedgwick, Prof. Livingston Ferrand and a score of others scarcely less well known.

Many points were emphasized by these speakers again and again. One was the woeful lack of beds for consumptive patients in Boston. New York has 3,216 such beds and Boston only 110. Dr. Durgin showed that of these 110, 60 were borrowed from other institutions, and 50 are in the Long Island Hospital. Moreover, 4,000 tuberculous patients are known to be living in Boston. Still, while in 1856 there were 46 deaths per 10,000 in Boston, in the past year this has been reduced to 20.46 per 10,000 of the population. The board of health proposed a few years ago to build a hospital with 250 beds for \$40,000, but failed to get the money. Later, \$150,000 was appropriated, but was judged insufficient by Mayor Collins and was never expended. Various speakers showed the success of the most inexpensive quarters in tents or shacks, as illustrated in the Wellesley Convalescent Home for Children, and urged that something be done at once. It was claimed that for \$10,000 excellent accommodations of this sort for 150 patients could be provided. Such a method would be following out the examples of many of the best sanatoria, like Riverside at New York, Loomis at Liberty, N. Y., or Sunnyrest at White Haven, Pa.

At the closing meeting, Mayor Fitzgerald assured his hearers that a board of trustees to expend this \$150,000 already appropriated would be appointed at once and a consumption hospital immediately established.

In reply to the letters sent out by the State Board of Health 360 cities and towns reported total accommodations in Massachusetts for consumptives of 971 beds, in both public and private institutions. Only 38 classify tuberculosis among the infectious diseases, which must be reported by physicians, and only 79 have ordinances forbidding expectoration in public places. A sanatorium is planned to be erected at Rutland for persons affected with consumption.

The Boston Instructive District Nursing Association, between Nov. 1, 1904, and Nov. 1, 1905, through its nurses, made 7,014 visits to consumptive homes, took care of 646 patients, of whom 96 were sent to hospitals, and has now 178 patients under its care. Emmanuel Episcopal Church last July started a tuberculosis class of 25 under the direction of Dr. J. H. Pratt. The patients treat themselves, report to him once a week and receive fresh instructions. Three are already cured and ready to go to work.

About one-quarter of the exhibit is to be kept together by Secretary Wilson and sent to various cities of Massachusetts and other New England States.

NORTHWEST MEDICAL SOCIETY OF PHILADELPHIA.

Regular Meeting, held Nov. 6, 1905.

Throat and Nose Diseases Due to Constitutional Causes.

DR. L. L. HARKNESS called attention to the interrelation of constitutional diseases, both as causative factors of and as produced by throat and nose conditions, and emphasized the importance of the specialist in these conditions being also a good general practitioner. He stated that stomach trouble had caused sinus disease. He reported the case of an anemic boy, suffering from indigestion, in whom an examination revealed the presence of a large number of adenoids, which were removed, the removal being followed by cure of the indigestion. He also referred to conditions of the upper respiratory tract, which local applications would relieve only for a short time, because the patient was suffering from rheumatism, which was cured by the administration of the salicylates. He also reported a case of soreness, dryness, dripping of mucus through the naso-pharynx, in which an examination revealed mitral incompetency, the treatment of which relieved the respiratory condition. He referred to cases of chorea and epilepsy caused by the nasopharyngeal condition, and the association of varicose veins and hernia with enlarged tonsils, and also the influence of gestation, menstruation and ovarian disease on the nasal condition.

DISCUSSION.

DR. CARLE LEE FELT stated that he had never seen any cases which he could certainly say were due to rheumatism, although many cases would be relieved by the salicylates, benzoates and the stimulation of the excretory functions. He cited several cases where the removal of adenoids had been followed by improvement in the general condition of the patient, particularly the digestive symptoms and the blood condition.

DR. RALPH BUTLER stated that one of the most important local conditions due to general causes is vasomotor rhinitis, which is usually relieved by the administration of strychnia or other tonics, while atrophic rhinitis is more amenable to local treatment. Hypertrophy of the lingual tonsils frequently causes stomach trouble, and in all these cases the general condition should be carefully investigated.

DR. WILLIAM KRUSEN emphasized the necessity for considering the correlation of all the organs of the human body in relation to nose and throat conditions, and particularly the importance of rheumatism as a causative factor.

DR. J. THOMPSON SCHILL referred to a severe case of chorea occurring in a boy 9 years of age. He had been under general medical treatment. He was found to have adenoids and enlarged tonsils, which were removed and a circumcision was done. In six weeks he had entirely recovered without any change in the medical treatment. He also referred to another case suffering from epilepsy, in which the removal of the tonsils and adenoids was followed by very marked improvement in the disease.

DR. HUGH P. MCANIFF asked whether it was necessary to remove tonsils that were merely hypertrophied, and whether this had any effect on the nervous system in cases of enuresis, stating that he had seen good result in a patient from the performance of circumcision and tonsillotomy.

DR. H. C. MASLAND referred to a case of enlarged tonsils in which the glands of the neck were supposed to be tubercular. The patient was afterward taken with tubercular meningitis, with fatal result.

DR. A. B. KIRKPATRICK thinks it a good plan to remove the hypertrophied tonsils when it can be done without serious loss to the patient, as by leaving it there is great liability of infection. He referred to the case of a policeman operated on by Dr. D. Braden Kyle six or seven years ago for septal deviation, who prior to the operation had been complaining of pain in the stomach and chest, which after the operation disappeared and has not since returned.

The Subcutaneous Injection of Paraffin for Nasal Deformities.

DR. A. B. KIRKPATRICK exhibited a patient in whom he had injected paraffin for a nasal deformity about sixty hours previously, the condition being due to an operation for straightening the septum and the dissecting out of a dislocated columnar cartilage. This operation had been performed last May, at which time some paraffin was injected, but not sufficient to produce cosmetic effect. He stated that he had never seen any fatal results from this procedure, although he had observed cases in which an excessive amount of paraffin was employed, or in which it was injected in liquid form, and not properly controlled, where the condition of the patient was not improved.

DR. HARLAN exhibited a case of paraffin injection done for saddleback deformity of the nose. The solution injected was a mixture of white vaselin and paraffin with a melting point of 108 degrees, heated to 96 degrees and injected in a semisolid condition.

DR. CARL LEE FELT referred to a plan he saw tried on three patients by making an incision in the skin along the bridge of the nose and putting in a silver plate. Only one of the three cases was a success, the others sloughing out.

Association News

THE SCIENTIFIC EXHIBIT.

Report on the Scientific Exhibit of the American Medical Association for the Session of 1905.

FRANK B. WYNN, A.M., M.D.

Director of the Exhibit.

INDIANAPOLIS.

When Portland was selected as the meeting place in 1905, many persons of excellent judgment seriously questioned the advisability of attempting a Scientific Exhibit at a place so remote from sources of pathologic supply. The dominant sentiment, however, was against any break in the continuity of the good work. This view was prompted by the conviction that even a small exhibit would have a beneficent influence in the Far West, arousing interest in scientific subjects, pathologic and otherwise. The fear entertained by some that the exhibit might fail because of the conditions named above, proved happily not to be well founded. From the extreme East (Massachusetts and the District of Columbia), the Middle States (Illinois and Indiana) and the Far West (California), came those loyal to the cause and regardless of expense, insuring a highly creditable exhibition.

The feature of distinctive interest was the inauguration of a historical department. The auspicious beginning has already secured promises of other medico-historical exhibits for the future of exceptional interest and value. Indeed, the movement bids fair to arouse enthusiasm in a field of medicine too much neglected. A detailed account of the scientific and historical exhibit follows.

I. HISTORICAL DEPARTMENT.

1. INDIANA MEDICAL COLLEGE, THE SCHOOL OF MEDICINE OF PURDUE UNIVERSITY.

FRANK B. WYNN.

An exhibit illustrative of the life and work of Dr. John S. Bobbs, the father of cholecystotomy, inscribed as follows:

Dedicated to the American Medical Association in session at Portland, Oregon, June 11-14, 1905, in memory of Dr. John S. Bobbs of Indianapolis, the founder of the surgery of the gall bladder, by the Medical College of Indiana, the *Indiana Medical Journal*, and the Indianapolis and Indiana State Medical Societies, which Dr. Bobbs assisted in organizing, and on behalf of the thousands of patients whose lives have been made happy and prolonged by this beneficent operation.

The more important features of the exhibit were the following:

(a) *Portrait in oil and photographs of Dr. Bobbs.*

(b) *Mrs. Z. Burnsworth of McCordsville, Ind., the first person operated on for gallstones.* The operation was done June 15, 1867, on the site of the Commercial Club Building, in Indianapolis, and described by Dr. Bobbs in the *Transactions of the Indiana State Medical Society for 1868*. He was president of the society that year.

Mrs. Burnsworth was brought to the Portland session at the expense of the university, and was formally presented in the exhibit hall at a demonstration on Thursday, July 13, by Dr. L. H. Dunning of Indianapolis. On that occasion she publicly expressed her desire that at death a postmortem examination should be made to determine the exact results which followed the operation. Mrs. Burnsworth is now 68 years of age and in good health.

Dr. Dunning, in presenting Mrs. Burnsworth, spoke as follows:

Mr. Chairman, Ladies and Gentlemen:

The profession of Indiana has taken great pleasure in accepting your chairman's invitation to bring to your exhibit evidences of the masterful work of Dr. John S. Bobbs in the performance of the first cholecystotomy. In this exhibit we present I am sure one of the first things to catch your eyes has been the portrait of Dr. Bobbs. This portrait was painted during the strength of the middle period of his life, and it at once impresses one as being the portrait of a man who possessed unusual intellect, purpose and determination.

Dr. Bobbs was a kindly man, and was always moved by high purposes. He hated shams and hypocrites. He idealized truth and struggled to realize his ideal. Dr. Bobbs was in his day the foremost surgeon of Indiana. He was a man of great strength of character and hence of wide influence. As evidence of his influence, it may be mentioned that he was in the forefront of all the movements of the State and Nation, especially in everything relating to medicine and surgery. He helped to develop the system of administration in the care of the insane, and was one of the first trustees of the Central Insane Hospital. He was influential in organizing the Indiana State Medical Society. He was one of the founders of the Medical College of Indiana, and was its first professor of surgery. In this institution he taught surgery for many years and gave to it his large private library. He also founded and endowed the Bobbs Free Dispensary. He was medical director of the Indiana troops in the Civil War, and served his state efficiently as state senator. He brought to every position he occupied marked ability and faithfulness.

It is not my purpose to give an eulogy of Dr. Bobbs. Another, Dr. P. H. Jameson, has already done this work. It is submitted for your perusal in the reprint, a copy of which you are asked to take with you.

Unquestionably, the greatest work of Dr. Bobbs' life was the performance of the operation of cholecystotomy on Mrs. Burnsworth, the lady who sits in our presence to-day. This lady has endured the long and fatiguing journey from our city to this meeting place. She has traveled with friends, Indiana physicians and their wives, who have had a tender solicitude for her good health and spirits. This good woman has had two crowning days in her life. The first was the one on that mid-June day in 1867, when, in the discharge of his duties to a patient, Dr. Bobbs did, on her person, the first cholecystotomy. The second crowning day is this one, in which, after a long and fatiguing journey, she presents herself before this learned body of men to pay her tribute to the memory and good work of her benefactor, Dr. Bobbs. Let the memory of her name be co-existent with that of Bobbs, as is Mrs. Crawford's with that of McDowell and Anarcha with Sims.

The date of Dr. Bobbs' operation on Mrs. Burnsworth was June 15, 1867. It was begun as an exploratory incision, the doctor having told the patient that he was uncertain as to the nature of her tumor, and that he could give no assurance that it could be removed. For a detailed description of the technique of the original operation, you are referred to Dr. Bobbs' original paper, a reprint of which you will find in the one above referred to.

As there has been some misunderstanding relative to some of the procedures in this operation, even by those who have written about it, it is important that the directions for the operation and some of the steps of the operation. A central incision was made in the median line between the umbilicus and pubes. On entering the abdomen, the omentum was found adherent to the parietal peritoneum. The omentum was separated from the parietal peritoneum, the omentum was torn through, uncovering the cyst on its anterior aspect. Finding it impossible to deliver the tumor through the median incision, the upper portion of the incision was extended to the right of the umbilicus, and the incision was made to pass through it. When the cyst was opened by incision, the fluid contents escaped and along with it a large number of gallstones. The gall bladder was then completely exposed. The stone was picked up by the finger. One stone was left, because Dr. Bobbs found no communication between the sack containing it and the cavity of the gall bladder. Further on in his paper, Dr. Bobbs says the stone was removed by the use of the billiard ducts. The opening in the gall bladder was closed by a single stitch, the ends of which were cut short and the gall bladder pushed back into the abdominal cavity. The abdominal incision was closed by sutures and adhesives of the period. There was an uneventful recovery, except that there was a small abscess in the abdominal wall.

The greatest interest in this case must be the historical one. You are impossible to close the case unless you have also attached to it. Where was the unremoved stone located? Dr. Bobbs thought it was in one of the billiard ducts. Was it not probably in the cystic duct, into which it had passed, become impacted, exciting inflammation, which occurred by inflammation, ulceration, and final closing of both the inlet and outlet of the duct?

What occurred in the interior of the gall bladder after it was emptied of its contents? Dr. Bobbs reported after ten months,

"No appearance of enlargement was observable." Is it not probable that the remaining stone produced considerable irritation, and some constitutional disturbance, for the author states that since the operation she has had intermittent fever at intervals, and impaired digestion, and at such invasions complaints of pain in the region of the enlargement, that became of its stone? What is the condition of the gall bladder and the surrounding tissues to-day? The latter question can not be fully answered without an autopsy.

The result of my examination, yesterday leads me to think that the gall bladder and surrounding tissues and organs are massed together by adhesions.

(c) *Documents:* A copy of the "Transactions of the Indiana State Medical Society for 1868," containing the original article by Dr. Bobbs entitled "A Case of Lithotomy of the Gall Bladder"; other addresses and papers; reprints of the *Indiana Medical Journal* and the *Johns Hopkins Bulletin*; letters and testimonials from professional friends.

(d) *Photographs of distinguished professional confrères of Dr. Bobbs in Indianapolis and Indiana as follows:* George W. Mears, Thomas B. Harvey, Joseph Eastman, Theophilus Parvlin, D. H. Oliver, W. H. Wisbard, P. H. Jameson, J. A. Cominsore and John W. W. Kemper of Muncie.

Drs. Cominsore and Avery were present when the operation was performed. It is fitting to close the descriptive consideration of this exhibit by the following just and beautiful tribute to Dr. Bobbs by one who was often his assistant in surgical operations, and perhaps knew him more intimately than any other practitioner of that day:

INDIANAPOLIS, June 28, 1905.

FRANK B. WYNN, M.D.

Dear Doctor:—I am gratified to learn that at the ensuing session of the American Medical Association at Portland you propose to treat of the career of the late John S. Bobbs.

From 1849, when I began the practice in Indianapolis, to his death in 1890, he was my friend. He was the soul of honor and generosity in his life, not only toward the profession, but his neighbors and fellow-citizens. He was incapable of sham, trickery or double dealing in the remotest degree, and still he was self-sacrificing and unyielding in the maintenance of his just rights, but in such a way as rarely to offend. He never administered a placebo. He gave a remedy with a definite purpose or nothing. In his work as a surgeon he was ready to do whatever another had done, and yielded in the maintenance of his just rights, and common sense indicated the path. He hesitated at no responsibility, however great. I was associated with him in considerable of his work, but can not here enter into details. His scheme and plan of work, with the assistance of Rush, Phye, McDowell, Dudley, Gross, Pancoast and other great men who have been an honor to our country. Yours respectfully.

F. H. JAMESON.

2. HISTORICAL EXHIBIT RELATING TO THE EARLY LIFE

OF W. G. T. MORTON.

BY HIS SON, WILLIAM JAMES MORTON, NEW YORK.

This consisted of:

(a) *A portrait of Dr. Morton.*

(b) *Photographic reproduction of his medical diploma.*

(c) *Photographic reproduction of his medical cards while a student in the Harvard Medical School.*

Elaborate amplification of this exhibit is promised for a future session, designed to show the relation of Dr. Morton to the discovery and introduction of ether anesthesia.

III. SCIENTIFIC EXHIBITS.

3. HARVARD UNIVERSITY.

A. Department of Physiology, Harvard Medical School.

WILLIAM T. PORTER.

Professor Porter exhibited some of the Harvard physiologic apparatus. This apparatus is distinguished by simplicity in design, sound workmanship and low cost. It is "manufactured" with special tools, and ordinarily not less than one hundred pieces are handled at one time. This collective method, which is that pursued in the best machine shops, combined with the utmost simplicity of design, greatly reduces the cost of the individual apparatus. It enables the physiologist to secure both for research and for instruction an equipment which is at once well made, inexpensive and trustworthy. The enterprise aims to advance the laboratory teaching of physiology. Among the apparatus shown were the following:

Canulas for the blood vessels and the trachea; a quantitative circulation scheme. In this latter it can reproducing the intraventricular pressure curve causes in the artificial ventricle the changes of pressure actually observed in the dog. With this device the physical phenomena of the circulation can be accurately demonstrated. Non-polarizable electrodes made of silver's clay; capillary electrometer for the stage of a microscope; eocrograph; artificial eye in which the course of the rays is made visible; induction coil; kymograph; leveling table; muscle levers; a membrane manometer; a method of measuring the changes in the apparatus for studying the changes in muscular contraction when the muscle is heated; respiration scheme, with which the variations in pulmonary and pleural transmissions may be studied quantitatively; rheometer; simple magnet; stands; clamps; electric keys; stapocor, for hemodynamic work; tambour; tuning fork; and work adder, with which the total work done by muscle in lifting a weight may be recorded.

B. Department of Pathology, Harvard Medical School.

HENRY A. CHRISTIAN.

The demonstration of this exhibit was highly appreciated. It comprised:

I. *Biology of the organism of actinomycosis.*
Presented for Mr. J. H. Wright, director of the Pathological Laboratory of the Massachusetts General Hospital.
A series of fifteen lantern slides were demonstrated showing (a) the appearance of the organism of actinomycosis growing in sugar agar with the organisms massed as a definite layer some distance below the surface of the agar and small scattered masses of growth throughout the media; (b) stained sections of the sugar X 1,500, showing the branched forms of the organism; (c) smears from bouillon cultures, showing the organism largely as a bacillary form; (d) portions of colonies of the actinomycetes from serum or serum pleuritic fluid, showing stages in the formation of clubs; (e) the lesions and organism from inoculated guinea-pigs.

II. *Pathologic histology of carcinoma.*
Presented for Dr. E. E. Tyzzer, assistant in pathology, Harvard University Medical School.

A series of nine enlargements from microphotographs were exhibited and twenty lantern slides demonstrated, showing (a) the appearance of the vacuolar lesion from its beginning to the stage of advanced beaillar; (b) the large multinucleated cells (giant cells) so characteristic of the lesion; and (c) the peculiar nuclear and cytoplasmic inclusions in the epithelial and connective tissue cells believed to be degeneration products associated with direct cell division.

III. *Paintings and drawings showing the macroscopic and microscopic appearance of tissues from a case of mytiple myeloma.*
Painting of the cut surface of the liver in a case of acute yellow atrophy of the liver in a child of five.

4. COMMONWEALTH OF MASSACHUSETTS—STATE BOARD OF HEALTH.

CHARLES HARRINGTON, SECRETARY.

This very complete exhibit consisted largely of models, as follows:

(a) *A model of the experiment station of Lawrence.*
This station has been in operation since 1887 for investigations on the purification of water and sewage and allied subjects.

(b) *A model of the Lawrence city filter.*
This filter was constructed in 1893 by the advice and according to the plans of the State Board of Health of Massachusetts. It is 2½ acres in area, and it was the first large sand filter built in America. It has saved many hundred of lives for the city of Lawrence.

(c) *Three small filters to illustrate three types of filters in operation at the experiment station.*

(d) *Crucible coils and bottles used in the collection of samples for chemical analysis.*

(e) *All forms or sheets used in reporting analyses.*
(f) *Large tables showing the results employed by the State Board of Health in this work, the number of samples examined, both chemically and bacterially, from the beginning of the work up to the end of 1904, and diagrams showing the effect of polluted and pure water on the total death rate and death rate from typhoid fever of two cities in the state.*

(g) *Photographs of laboratories, experiment station and Lawrence filter.*

5. UNITED STATES ARMY MEDICAL MUSEUM.

JAMES CARROLL.

This extraordinary series of 100 bromid enlargements of bacteria and protozoal parasites was much admired. Dr. Carroll's demonstration made them highly instructive.

M. longecaulis, from pure culture, and the same organism showing capsules in the fresh blood of an inoculated rabbit (X 7,000).

Streptococcus pyogenes (*longus* and *brevis*), and a streptococcus from a case of suppurative mastitis in the cow (X 7,000).

M. tetragynus, *M. ceciliae* and *M. virus* (X 7,000).

M. gonorrhoea in a pus cell (X 7,000).

B. prodigiosus, *B. subtilis*, *B. mesentericus vulgaris*, *B. megatherium* and *Cladobotrydichotoma* (X 7,000).

Bacillus coli suppurative conjunctivitis, *B. diphtheriae*, *Pseudodiphtheria bacillus*, *B. anthracis* stained for spores, *B. anthracis* vegetative forms, *B. typhosus*, *B. coli communis*, *B. tetrastis* (Sanarelli), *B. cholerae suis*, *B. influenzae*, bacillus of rabbit anthrax, bacillus of swine plague, bacillus of leprosy, *B. crocaceus*, *B. anthracis*, *B. pyogenes fetidus*, *B. tuberculosis* in sputum, *B. tuberculosis* in giant cell in a tubercle of the lung, *B. pyogenes*, *B. proteus vulgaris*, *B. tetani* (showing spores) (all X 7,000).

The following bacteria stain for flagella:

Spirillum undula, *B. subtilis* (two), *B. proteus vulgaris*, *B. pyogenes*, *B. typhosus* (two), *B. tetani* (two), *B. cholerae suis* (two), *B. coli communis*, *B. tetrastis* (Sanarelli) (all X 7,000).

Actinomyces viscidus, *S. undula*, *Spirillum* of Miller, *Spirillum* of Metchnikoff (X 7,000).

Actinomyces bovis, in jaw of a cow (X 7,000).

Spirillum of relapsing fever, in the blood of a monkey (two) (X 7,000).

Estivo-autumnal malarial parasites in stained human blood (four) (X 7,000).

Estivo-autumnal malarial parasites in fresh human blood (three) (X 7,000).

tertian malarial parasites in stained human blood (three) (X 7,000).

Quartan malarial parasites in stained human blood (X 7,000).

Leishman-Donovan bodies in ascars from human spleen (five) (X 7,000).

Trypanosoma leish in stained blood from a white rat (X 7,000).

Trypanosoma leish in fresh human blood (X 1,000).

Pyrosoma blazumani in stained blood of steer, dead of Texas fever (two) (X 7,000).

Amoeba coli in fresh human stool from a case of dysentery. Eight photographs of the same amoeba taken at intervals of a few seconds to show changes of form (X 6,500).

Strongyloides intestinalis in human feces (two) (X 700).

Ova of Uncinaria americana (ten), showing sterile forms and various stages of segmentation (X 3,500).

Oocum of Uncinaria americana, showing living embryo in shell (X 3,500).

Uncinaria americana, showing fresh larvæ (X 700).

6. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

M. J. ROSENDAU,

Director Hygienic Laboratory.

This beautiful and complete exhibit was formally demonstrated by Dr. Rosenau under two headings:

A. *The American Unit for Standardizing Diphtheria Antitoxin.*

This exhibit comprised a demonstration of the unit and the apparatus for making it. The methods of preserving, bottling, distributing and testing the standard toxin and antitoxin were shown, also the special syringes used for inoculating animals with precise amounts devised for this work and the standardized flasks and pipettes.

The demonstration of this exhibit consisted of a concise statement of the good results obtained under the law enacted by Congress, approved July 1, 1902, entitled "An act to regulate the sale of viruses, serums, toxins and analogous products in the District of Columbia, to regulate interstate traffic in said articles, and for other purposes." This law only applies to those persons who engage in interstate traffic in these products and does not reach a few boards of health who make and distribute diphtheria antitoxin within their own state.

In order to engage in interstate traffic in antitoxin it is first necessary to obtain a license, which is issued by the Secretary of the Treasury. The license is issued only after a careful inspection of the establishment by an expert. This inspection consists of a careful scrutiny of the methods, materials and equipment used in the manufacture of the serums in order that a safe and potent product may be assured. In addition to these inspections, which are held once a year, the products of each licensed manufacturer are bought on the open market and examined in the Hygienic Laboratory of the U. S. Public Health and Marine-Hospital Service. Products below the strength claimed for them and those showing impurities are at once reported to the Surgeon General, who takes proper steps to have the matter corrected.

The unit for measuring the strength of antitoxin is based on that established by Ehrlich, and is made in the Hygienic Laboratory in order that there may be a legal American standard of measurement. The antidiaphtheric serum that has been standardized and used as the unit of strength for the measurement of diphtheria antitoxin is kept under strict conditions of light, heat, moisture, etc. From time to time duplicates of the serum will be made to guard against deterioration or accidents to the original.

The standard serum is preserved in small bottles, which were shown. Every two months one of these tubes is opened, tested and distributed to the licensed manufacturers and others who are working in this line. The particular object of this standard is to insure the strength of antidiaphtheric serum sold in the United States by licensed manufacturers.

B. *The Bacteriologic Impurities in Vaccine Virus.*

Petri dishes showing the common bacteriologic impurities in vaccine virus were shown; also agar slants of pure cultures of all the ordinary organisms found in vaccine virus. The publications of the Public Health and Marine-Hospital Service on the bacteriologic impurities found in vaccine virus and on the antiseptic and germicidal properties of glycerin, etc., were also exhibited.

The law of July 1, 1902, governing the manufacture of diphtheria antitoxin applies with equal force to the propagation of and interstate traffic in vaccine virus. The contrast between the impurities in vaccine virus before and after the operation of the law was demonstrated. It was shown that before the law became effective an examination of vaccine virus in the Hygienic Laboratory often showed unclean virus, containing many thousands of bacteria per point or per capillary tube, some of them virulent for laboratory animals. Since the licensing, inspection and frequent examination of

the products found on the open market, the bacterial contaminations have shown a gratifying improvement. It is now uncommon to find a vaccine point sold on the open market containing more than a few hundred bacteria, most of them harmless saprophytes.

Several firms had not the proper equipment and experts capable of producing a safe vaccine virus; these were refused a license and compelled to retire from business.

Foreign manufacturers who sell biologic products in the United States are required to submit to an inspection and license the same as American manufacturers.

7. NORTHWESTERN UNIVERSITY MEDICAL SCHOOL.

WINFIELD S. HALL.

Great credit is due to the Department of Physiology of this institution for the constant and efficient support given the Scientific Exhibit from year to year. The following is a list of the apparatus demonstrated by Dr. Hall at the Portland session:

Physiologic apparatus:
 Kymograph. Vertical writing lever.
 Rev. Du Bois Reymond. Chest pantograph.
 Key, simple, with platinum point. Canula, set of six.
 Mercury commutator, Pohl's. Frogboard.
 Muscle forcep. Tambour, Marey's.
 Crank myograph. Tambour pans.
 Cardiograph, Marey's.
 Tuning fork, electric, 100 vibrations.
 Metronome, with mercury cup after Kronecker.
 Time marker, single, electric after Pfeil.
 Induction coil, Du Bois Reymond, with adjustable interrupter, new form.
 Dynamometer and dynamograph (Smedley's) adjustable grip (Child Study Report, No. 2, Chicago Board of Education, page 21).
 Ergograph, Moss's modified, by Lombard, complete with arm support and weights.
 Frog heart lever with tripod.
 Electrode, non-polarizing, clay point.
 Electrode, non-polarizing, brush point.
 Support, heavy, tripod base, with rod 24 inches long.
 Right angle clamp for use with support.
 Steel styli for use with writing levers.
 Aluminum holder for same and standard clamps, 4 inches.
 Double automatic stimuli key, Reichert's.

8. COOPER MEDICAL COLLEGE.

W. OPHÜLS.

This was a very creditable collection, and constituted the bulk of wet specimens presented at the meeting. It consisted of:

- (a) *Kaiserling preparations*—48 in number.
 Eight specimens of endocarditis, of septic origin, illustrating various stages.
 Several specimens of chronic endocarditis, some of which showed complete healing of lesions and an unlooked for regenerative power of the valves.
 One specimen of heart showed a piece of trocar embedded in the septum, the point projecting into the ventricular cavity. It was discovered by accident in an autopsy on a subject dead of chronic tuberculosis of the lungs.
 One specimen of primary sarcoma of the stomach.
 Two specimens of primary malignant cystic tumor of the peritoneum.
 Three specimens of primary adenocarcinoma of the liver with abundant formation of bile in primary tumors and metastases. In two of these there was no cirrhosis.
 One specimen showing chronic gastric ulcer in rabbit following resection of both vagi below the diaphragm.
 Five specimens illustrating the lesions produced by infection with oldium coccidiosis (2 in man and 3 in animals).
 One specimen in which there was a plainly visible gray discoloration of the cerebral cortex due to presence of innumerable malarial parasites in a fatal case of malaria.
- (b) *Thirty-six x-ray diapositives* prepared by William Lekkman, as well as a series of x-ray photographs.
- (c) *Dermatologic group* prepared by D. W. Montgomery. They included:
 (1) *Collection of photographs of interesting cases.*
 Among these were several illustrating the action of arsenic paste on malleanant epithelioma of the skin and some perforating ulcers of the feet in leprosy.
 (2) *Twenty-four diapositives* illustrating the skin lesions, the histologic changes and the parasites in coccidiodal granuloma.

9. SCHOOL OF MEDICINE OF PURDUE UNIVERSITY.

HELENE KNABE.

This exhibit consisted of the following:

- (a) *Series of twenty x-ray photographs* illustrative of fractures, gallstones, renal and vesical calculi, prepared by A. M. Cole.
- (b) *Series of dermatologic photographs* (enlarged) prepared by A. W. Brayton.
- (c) *Series of enlarged photographs* illustrating the development of a case of Plexiform neurofibroma, of the face and cranium, from infancy to adult life; a gross specimen of the same showing the tortuous, worm-like cords; series of water-color drawings by Dr. H. Knabe showing the histopathologic changes (report of a case read before Section on Pathology and Physiology by F. B. Wynn).

(c) *Macratome* designed by F. B. Wynn for making section of gross specimens for museum mounts; especially adapted for preparing gelatin mounts in petri dishes and the like.

10. PERSONAL EXHIBIT.

MYRON METZENBAUM, CLEVELAND.

- (a) *Series of photographs* showing the clinical value of radium in the treatment of epithelioma and lupus vulgaris.
- (b) *Two prints of a false ulnar joint* from negatives made, respectively, by radium and x-ray exposures. The x-ray was a three-minute exposure, while one week was required for the radium picture. From comparison it is shown that the x-rays have a far greater power of differentiation between bone and connective tissue than has radium. The latter is, therefore, impracticable for making radiographs.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Pneumonia.

In the treatment of pneumonia J. T. Scott, in the *Central States Medical Magazine*, recommends that the patient be kept in bed in a well-ventilated room, at a temperature varying between 65 and 70 F. All the excretions should receive careful attention, unusual care being taken with reference to the sputum. The diet, while light, should be nutritious, and administered at regular intervals. It should consist chiefly of broths and milk, and egg albumin.

In the medicinal treatment, among those preparations which are to be used as cardiac stimulants, he mentions alcohol, aromatic spirits of ammonia, strychnia, digitalis and in some case atropin. In severe cases of circulatory depression he recommends normal salt solution as being of service, given hypodermically or by the bowel. If oxygen is to be of any service in these cases, it must be administered comparatively early, and not omitted until the last stages have been reached.

In those cases in which high temperature is present, associated with disturbance of the nervous system, the cold bath, cold pack or sponging is advised along with the local application of the ice-cap. This procedure is especially of service in restless, irritable and delirious patients. In debilitated subjects, however, tepid baths only should be given. In all cases during the bath friction to the skin should be given, with the previous administration of alcohol. He states further, also, that the baths should not be given too often nor continued for too long a time.

In order to promote the elimination from the skin, pilocarpin may be given, in which instance some cardiac stimulant should be administered in conjunction with it. He regards the cough as a means of exhaustion in certain cases, and states that it should be watched carefully and overcome by sedatives if there be any indications of exhaustion from this condition. For such a cough he recommends heroin as the most valuable preparation, given in doses of 1/12 grain (.005) each, and repeated in four hours, if necessary.

In cases in which the expectation is too dry and tenacious, Scott recommends the administration of a combination of ammonium chlorid and terpin hydrate. The following combination is also recommended by him for such conditions:

| | | |
|-----------------------------|----------|-----|
| B. Strychnine nitratis..... | gr. 1/30 | \|002 |
| Guaiacal carbonatis..... | gr. i | \|06 |

M. Ft. cap. No. i. Sig.: Take one such capsule every four hours.

Acute Prostatitis.

In the treatment of acute prostatitis the patient should be put to bed at once, according to H. M. Christian, in *American Medicine*, and a saline laxative administered once daily. Opium or belladonna suppositories should be used by the bowel two or three times a day, and salol and urotropin (hexamethylenamin) given by the mouth as often. All local urethral treatment should be abandoned, and rectal irrigations should be employed two or three times a day. Irrigations with very hot

water are recommended as giving the greatest relief to the patient. These irrigations can be given easily by means of the ordinary fountain syringe. The patient should be instructed to retain the hot water as long as possible before allowing it to pass out. This procedure of filling the rectum with hot water should be repeated twice at each treatment. The fountain syringe is especially spoken of by the author as being used with much less risk in producing damage to the gland. After a week or ten days, when the acute inflammatory symptoms have begun to subside, and the tenderness of the prostate has decreased by rectal palpation, Christian recommends gentle massage of the gland with the index finger, in order to hasten resolution. This form of treatment must be very gently applied at first in order to avoid the danger of setting up an epididymitis as a complication, which might occur with a too vigorous massage. In the technic of this procedure the patient should be instructed first to empty the bladder. The anterior urethra is then washed out with a solution of silver nitrate, 1 to 8,000, and the bladder subsequently filled with the same solution. While holding the silver solution in the bladder the patient should be instructed to lean over a chair or a table while the physician strips each lobe of the prostate lightly with the index finger about five times. The patient is then instructed to empty the bladder again. In this way the posterior urethra is thoroughly irrigated, the distended follicles of the gland are emptied, and the contents washed out from the urethra along with the irrigating fluid. This treatment should be repeated twice a week for one month or six weeks, at the end of which time resolution will have taken place in the greater percentage of cases.

There is danger, however, of chronic prostatitis developing, requiring a much longer period of treatment before relief can take place.

In addition to the foregoing treatment the author recommends inserting suppositories containing 10 minims (.65) of ichthylol into the rectum at bedtime, as a procedure of great value in promoting resolution. As there is no specific remedy in such conditions, the indications for the internal medication must depend on the condition of the patient under treatment. In the acute parenchymatous prostatitis the suffering of the patient is much greater than in the follicular form, and in such cases Christian recommends that a constant stream of water be passed into the rectum through a tube which has a double flow in order that a constant flow of cold water may come directly against the prostate. This plan of treatment can be pursued almost indefinitely, arranging the temperature to suit the individual case, using the water as cold as can be well tolerated. When the symptoms, such as rigor, hectic fever, and fluctuation on palpation, occur, surgical intervention is necessary.

Intratracheal Medication of Tuberculosis.

The following combination is recommended by the *Journal des Praticiens* in the treatment of tuberculosis by the intratracheal method:

| | |
|-------------------------------|----|
| R. Olei eucalypti | |
| Olei thymi, aa.....m. lxxv | 5 |
| Olei cinnamoni.....m. iii | 20 |
| Olei olivæ (sterile).....℥iii | 90 |
| Iodoformi.....gr. lxxv | 5 |

M. Ft. mistura. Sig.: Forty-five minims to be injected into the trachea once or twice daily.

Dermatitis Venenata.

Dr. E. S. McKee, in *Cincinnati Lancet-Clinic*, states that having been poisoned by poison oak or poison ivy twice, and having suffered severely, he feels that he knows many times more about the trouble than he possibly could have known had he not had this experience. His first attack, contracted at the big trees at Santa Cruz in 1897, was much relieved by bathing in the water of the soda springs at Mount Shasta, and permanent relief was experienced from a plunge and a swim in the hot lake at Mammoth Hot Springs, Yellowstone Park. The water of this hot lake is impregnated with silicate of magnesia. The second attack was contracted in the suburbs of Cincinnati in 1905 and was quite severe, putting both eyes out of use and extending over the whole body, lasting with

nervous symptoms for three weeks. Weak phenol lotions and salves gave temporary comfort, as did weak lotions of borax. Wrapping the parts with cloths saturated in lotio plumbi et opii proved of more lasting benefit, but gave him a severe cold. Dusting the whole body with rice powder gave pronounced relief for several hours, and was nearly always followed by sleep. Saturated solution of aluminum and lead acetate (Burrows' solution), a tablespoonful in a pint of water, used as a lotion, gave fair relief. In his frantic efforts to get the poison off his hands he found that a thick lather of soap gave temporary relief, and the more ordinary the soap the greater the relief. Alcohol gave relief, but the ordinary strength caused too much burning of the skin. He found the following the most useful remedy in stopping the burning and itching, and in checking the spread of the disease:

| | | |
|-------------------------------------|-----|----|
| R. Alcoholis | ℥ii | 53 |
| Aqua dest. | ℥ss | 47 |
| Liq. plumbi subacetatis diluti..... | ℥ii | 60 |

Sig.: Apply locally.

This gave relief and allowed sleep for six or eight hours. The greater part of the skin exfoliated and the new skin was exceedingly tender for some time, requiring the protection and nourishing influence of olive oil and lanolin. The extreme nervous symptoms yielded to 2-gram doses of sodium bromid given from three to six hours apart, with the addition of two drops of liquor potass. arsenitis to each dose to prevent acne. Dr. McKee says that if one knows that he has been exposed to poison ivy or poison oak and is susceptible, he should bathe the exposed parts immediately with the dilute alcohol of the United States Pharmacopœia. If he applies the alcohol within two hours he will probably stop the progress of the disease by counteracting the poison.

Solutions for Sprays in Coryza.

A correspondent asks for solutions to be used in steam atomizer.

The use of steam inhalations through the nose for the treatment of acute coryza will not afford relief.

The following combinations are recommended by some laryngologists for use locally in an atomizer that will spray oil.

As a stimulant to the mucous membranes:

| | | |
|-----------------------------|---------|----|
| R. Thymol | gr. 1/3 | 02 |
| Olei caryophylli.....m. iii | | 20 |
| Liquid petrolati | ℥i | 30 |

M. Sig.: To be used in the atomizer as a spray in the nares two or three times a day. Or:

As an antiseptic the following combination is recommended:

| | | |
|------------------------|-------|----|
| R. Acidi carbolici | | |
| Menthol, aa..... | gr. i | 06 |
| Olei gaultheriæ..... | m. i | 06 |
| Liquid petrolati | ℥i | 30 |

M. Sig.: As a spray three or four times a day.

As a sedative the following:

| | | |
|--------------------------------|-------|----|
| R. Menthol | gr. i | 06 |
| Cocaine (alkaloid).....gr. iii | | 20 |
| Liquid petrolati | ℥i | 30 |

M. Ft. mistura. Sig.: To be used as a spray two or three times a day.

[The latter combination should not be refilled without the consent of the physician in charge.]

Other combinations which may be used locally as a spray are as follows:

| | |
|--------------------------|-----|
| R. Olei cassiæ.....m. ii | \|12 |
| Menthol .....gr. 1/4 | \|015 |
| Liquid petrolati .....℥i | 30\| |

M. Sig.: Locally as a spray. Or:

| | |
|---------------------------------|-------|
| R. Olei caryophylli.....m. viii | 50 |
| Terebenti.....m. x | 65 |
| Liquid petrolati | ℥i 30 |

M. Sig.: As a spray.

Internally a combination similar to the following is recommended:

| | | |
|---------------------------------|--------|-----|
| R. Ext. hyoseyami | gr. vi | 4 |
| Ext. nucis vomicæ.....gr. iv | | 2 |
| Camphoræ monobromatæ.....gr. xl | | 260 |

M. Ft. capsulae No. xii. Sig.: One capsule four times a day.

Medicolegal

Medical Experts on Matters of Common Knowledge.

The Supreme Court of Nebraska holds, in *Turley vs. State*, that matters of common observation, and matters on which juries are as capable of forming an opinion as are physicians and surgeons, are not matters for expert medical testimony. But it is not necessarily reversible error to allow a witness to testify to a truism with which all intelligent men are presumed to be acquainted, nor is it in all cases reversible error to allow a witness, over objection, to testify to a proposition of law, or a fact of science or nature which is a matter of common knowledge. Thus the court takes it that the proposition that a human body, when suddenly deprived of all self-control, will fall in the direction of the momentum of the body is a truism with which all intelligent men must be presumed to be acquainted, so that an answer of a medical witness to that effect could not be prejudicial, although the question calling for it could not be properly regarded as a medical question.

Recoverable Expenses in Injury Cases.

The Supreme Court of Illinois says, in *Chicago City Railway Co. vs. Henry*, a personal injury case brought by the latter party, that one who has been injured by the wrongful act of another may recover all reasonable expenses which he has incurred for physician's or surgeon's fees, medicines, and nursing rendered necessary in endeavoring to be cured of his injuries. He must exercise reasonable care to effect a cure and mitigate the effect of the wrongful act and is entitled to recover all legitimate expenses incurred for that purpose, and, if it is proved that further expenses for a surgical operation or medical treatment or attendance will necessarily be required, the jury may take that fact into account. But the court holds that a question as to what a man in the plaintiff's station in life would have to have to be properly operated on by a competent surgeon for hernia, which was said to be \$250, was improper and the evidence incompetent in any view of the case, it not being a case where the surgical operation must be performed, but one where the plaintiff could have it performed or not, as he saw fit, while there was no evidence tending to show that an operation was contemplated.

Previous Physical Condition in Injury Cases.

The Court of Civil Appeals of Texas says that it was contended, in the personal injury case of *Green vs. Houston Electric Co.*, that the plaintiff, having alleged, in substance, that she was, prior to the accident complained of, a sound, healthy and active woman, and that her injuries were entirely produced by the accident, and having supported the allegations of her petition by her testimony, and there being testimony tending to show that she was, in fact, physically weak and unsound before the accident, she was not entitled to recover damages for such injuries produced by the accident as only aggravated a previously diseased or unsound physical condition. But this court can not give its assent to a rule which, in its logical application, would put on a plaintiff the danger of being turned out of court if he should not state in his petition every physical weakness or ailment which might be aggravated in its effect by an injury wrongfully inflicted on him. The court can not find that the doctrine referred to has ever been approved elsewhere; and, while it has not been able to find any case denying it, it thinks that it is at least persuasive that in a multitude of cases examined it appears that persons have been held entitled to recover damages for aggravation of a previously diseased physical condition where the allegations of the petition made no reference to such condition.

No Implied Obligation to Reimburse State for Care.

The Supreme Court of Iowa holds, in the case of *State vs. Colligan*, that, in the absence of any statutory provision authorizing recovery by the state as against an insane person confined in the state hospital, no recovery for the necessary expenses of his support can be had. It says that it finds no authority for holding that the state, having established hospitals for the insane, which are largely charities and provided, in the interest of humanity and for the protection of society, that insane persons shall be confined therein, has any common-law right of recovery against those who receive the benefits of

such public charities. The uniform rule seems to be that there is no liability on the part of the person who receives such benefits, or on the part of his relatives, to make compensation, save as such compensation may be expressly required and provided for by statute. No such obligation is to be implied. This has been the uniform holding, also, as to public aid furnished to poor persons.

Nor does the court consider that a recovery against a non-resident, who was committed to the hospital while in the state, was authorized by the first clause of Section 2297 of the Iowa Code, which reads: "The provision herein made for the support of the insane at public charge shall not be construed to release the estates of such persons nor their relatives from liability for their support." It says that it seems to it that this falls far short of being a statutory provision authorizing a recovery by the state in such cases; and, as the other language of the section relates only to the enforcement of liability by the county of the residence of the patient, which has been compelled by the provision of the statute to pay to the state the expense of his maintenance in a hospital or has supported him in a county institution, it is concluded that there is no expression of any legislative intention to create a liability which may be enforced by the state against the patient or his property.

Mortality Tables and Their Use.

The Court of Appeals of Kentucky says, in the *Illinois Central Railroad Co. vs. Houchins*, a personal injury case brought by the latter party, that, when the action is to recover for the death of a person injured, as the measure of recovery is the value of his capacity to earn money, standard tables, showing the ordinary expectancy of life, are held to be competent evidence. Where, as there was in this case, there is proof tending to show that the plaintiff's capacity to earn money is impaired or partially destroyed, the probable expectancy of life is equally competent, for the measure of recovery here is in part compensation for the impairment of his capacity to earn money. If evidence of the ordinary expectation of life may be received where the capacity to earn money is destroyed by death, it is hard to see why such evidence can not be equally received where the capacity to earn money is partially destroyed; for in either case the jury are, in making up their verdict, to be governed by the capacity to earn money which has been destroyed, and whether this is a partial or total destruction is not material.

The Carlisle Tables are based on actual observation in the towns of Northampton and Carlisle, England. The deaths were taken, not from selected lives, but from the population generally. These tables have been very generally admitted by the courts of this country. The field, however, was so narrow that they have never been regarded as satisfactory. It is a matter of common knowledge that the expectancy of life is increasing. The American Table of Mortality has been made out from the combined experience of the life insurance companies of America, and is now regarded as the standard throughout the United States. It is true that it is based on insurable lives or healthy persons. Still, there is no great difference between it and the Carlisle Table. The Wigglesworth Tables were made before 1858. Since then there has been great advance in medical science, and the data on which such tables are calculated as much fuller now than then. The court, as information increases, will use that table which is the best and most reliable.

After maturely reconsidering the subject, this court has reached the conclusion to follow the rule heretofore laid down and to hold that in each case the expectancy of life may be shown, as any other fact, by the best evidence obtainable, and that, as improved tables come into use which are of standard authority, they may be given in evidence, instead of the older tables which they supersede. Such tables show only the probable continuance of life, and not the duration of ability to earn money. They show the probable duration of life of healthy persons who are insurable risks, and the court, when requested, should tell the jury what the table shows, and that it is to be considered by them, in connection with the other proof in the case, for what it may be worth, considering the plaintiff's state of health and circumstances, in determining the probable duration of his capacity to earn money.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

January 13.

- 1 *Should the Youth of this Country Be Instructed in Sexual Physiology and Hygiene. P. A. Morrow, New York.
- 2 Medical Treatment of Abdominal Pain Not of Gastric Origin. J. E. Talley, Philadelphia.
- 3 *Case of Cerebellar Tumor. B. Chance, Philadelphia.
- 4 *Young Stage of the American Hookworm—*Necator americanus* (Stiles, 1902), 8 to 12 Days After Skin Infection in Rabbits and Dogs. C. W. Stiles and J. Goldberger, Washington, D. C.
- 5 *Subcutaneous Pelvioureteral Lumbar Implantation in Lieu of Uretrectomy After Nephrectomy. A. E. Gallant, New York.
- 6 Deception and Falsehood as Pathologic Phenomena. A. Gordon, Philadelphia.

1. Instruction in Sexual Physiology and Hygiene.—Morrow says that the education of the public is the most valuable of all measures for the prevention of communicable diseases. Instruction in the physiology and hygiene of the sex function should form an essential, integral part of the education of youth. Morrow criticises our present educational system, the policy of which is to launch the young into the world in complete ignorance of everything pertaining to the laws of life reproduction. Morrow says that in seeking this knowledge the youth is but obeying a law of his mental evolution. Since this knowledge can not be obtained from legitimate sources—from parents and instructors—it is gained surreptitiously and usually from depraved sources—dissolute companions or erotic or quackish literature. To be salutary as a safeguard, therefore, this hygienic education should be given in youth, for it is during this period that the foundations of what may be termed the "sexual character" are laid and habits of mind and practices are formed which, in a great measure, determine the future sexual life of the individual.

3. Cerebellar Tumor.—The symptoms in the case reported by Chance were those of intracranial tumor of the hind-brain rather than of the more forward portions, and appeared to be those produced by irritation rather than by the destruction of the basilar centers. Although an intense papillitis, which was present, was conclusive of the presence of a tumor, the indefiniteness of the other symptoms hindered the assumption that the tumor occupied the cerebellar region. The chief local symptoms were those of deviation of the optic axes, with disturbances of direct and binocular vision, and facial palsy; yet, after energetic treatment the paresis of the left external rectus muscle, as well as the diplopia and the facial palsy, greatly disappeared, and when the man was placed under strict hospital regimen the general symptoms all but ceased, for there were no headaches, emesis, or muscular spasms, until the last course. The gait, station and the knee-jerks were not interfered with until very late in the progress of the malady. There was hyperexcitation of the sexual function almost until the end. The general bodily nutrition was maintained up to the last weeks of the man's life.

4. Young Stage of American Hookworm.—Stiles and Goldberger have succeeded in infecting dogs and rabbits with the American hookworm (*Necator americanus*) by placing the second larval stage of this worm on the skin of the back and guarding against any infection through the mouth. The young worms penetrated the skin, and in from eight to twelve days later they were found in the stomach and small intestine. They had undergone a third ecdysis and reached the fourth larval stage (with provisional buccal capsule). The authors state that there is at present no evidence that these hookworms would reach maturity in dogs and rabbits, hence the conclusion that dogs and rabbits play any rôle in spreading the disease to man is not justified by any facts known.

5. Uretrectomy After Nephrectomy.—According to Gallant, subcutaneous lumbar pelvioureteral implantation is simple, safe and satisfactory. He says that by this means we can avoid the additional risk of immediate uretrectomy. We can secure free drainage and maintain an opening through which drugs may be introduced to hasten retrograde changes. On the other

hand, the opening beneath the skin does not prevent primary union; avoids exposure on the skin surface; should mucus or pus accumulate it can not burrow in the retrocolic space, is easily recognized and let out through a small skin incision and a tube inserted for drainage; the absence of ligature on the ureter prevents deep inflammation, and if the ureter must for any reason be removed subsequently, this can be accomplished without difficulty, from a patient who has had ample time to recuperate from the primary operation. The presence of the drainage tube does not interfere with the patient getting out of bed at an early date after operation (in his case the tenth day), nor the exercise of her usual home duties. The drainage tube must be kept in place as long as the discharge continues, and should it close and secretion accumulate, the skin can be incised, and the drain reinserted until atrophy of the ureter is accomplished.

New York Medical Journal.

January 13.

- 7 Friedreich's Ataxia. W. Sinker, Philadelphia.
- 8 Reflex Neurases, with Special Reference to the Appendix Vermiformis. E. H. Grannin, New York.
- 9 Uterine Inertia and Its Management. G. L. Brodhead, New York.
- 10 *Pathologic Physiology of Typhoid Fever. J. H. Barach, Pittsburgh.
- 11 Simple Instrument Useful in X-Raying a Stricture of the Esophagus. S. Chandler, Philadelphia.
- 12 Contribution to the Causation of Echinodroma of the Upper Portion of the Femur. C. O. Thienhaus, Milwaukee, Wis.
- 13 A Quarter Removed After 219 days in the Esophagus of a Child. J. J. Reitenwald, Pittsburgh.
- 14 Physiology of Rectivation. G. W. McCaskey, Ft. Wayne, Ind.
- 15 Gonorrheal Rheumatism. M. W. Ware, New York.

9. Treatment of Postpartum Hemorrhage.—Broadhead outlines his treatment of this condition as follows: As soon as the uterus has been emptied, ergot should be given by mouth, or, if the hemorrhage is alarming, by hypodermic injection, and massage of the uterus should be kept up vigorously. Usually a hot vaginal douche of normal salt or weak lysol solution, given at a temperature of 116 F. will be sufficient to check the bleeding. If not, the douche nozzle is carried up into the uterus and a uterine douche of the same solution at the same temperature is given. Hemorrhage continuing, he gives a hot uterine douche of a 2 per cent. solution of acetic acid. For this purpose he carries in his outfit a four-ounce bottle of the Squibb 80 per cent. acetic acid, two ounces of which added to three quarts of water will make a solution of requisite strength. If acetic acid fails, and there have been very few instances in his experience in which it has failed, the uterus should be tightly tamponed with plain sterile or a 5 per cent. iodoform gauze. If one is unprepared to pack the uterus a piece of ice may be carried up and rubbed about in the cavity of the uterus, a procedure which is occasionally followed by firm uterine contraction.

10. Pathologic Physiology of Typhoid.—Barach believes that the evidences of to-day are sufficient to establish the modern idea that typhoid fever is a disease dependent essentially on the bacteremia. He thinks that the Peyer's patches and solitary follicles are not the sources from which typhoid bacilli are sent out into the circulation, but that their marked involvement is due to their peculiar histologic structure or to some physiologic relation that exists between the typhoid bacilli and the lymphoid elements. He also believes that perforation with the ordinary pyogenic infection, staphylococci and streptococci, is so much more dangerous than with the pathogenic infection, because to the latter there is already a partial immunity established, and that the diazo is a reaction to an end product, the result of rapid tissue destruction which is characteristic of all marked cases of typhoid fever, and of those other diseased conditions in which the reaction occurs.

Boston Medical and Surgical Journal.

January 12.

- 16 *Analysis of One Hundred and Twenty Cases of Malaria Occurring at Camp Grege, Philippine Islands. W. F. Chamberlain, U. S. A.
- 17 *Report of Three Cases of Perforated Gastric Ulcer; Gastro-intestomy. D. F. Jones, Boston.
- 18 Shoes and Feet. R. Scatter, Boston.
- 19 Dazzling Health Statistics. T. J. Mays, Philadelphia.

16. Malaria.—Of the 120 cases of malaria reported by Chamberlain 24 are recurrences in the same individual. Of these

24 cases at least 4 were proved to be new infections by finding a type of plasmodia different from that demonstrated on the first entry. All these new infections and also 6 of the recurrences (probable relapses) occurred while the patients were on a compulsory course of treatment consisting of 0.5 gm. quinin sulphate in solution three times a week. This treatment had been in effect several weeks in each case when fever occurred. On December 11 the compulsory course was increased to 0.5 gm. four times a week, and since then there has been one relapse and one new infection among the men taking this treatment. Chamberlain is of the opinion that these cases prove that neither 1.5 gm. nor 2 gm. quinin sulphate a week is sufficient in all cases to prevent relapse or new infection. These 120 cases are classified as follows: Quartan intermittents, 3; benign tertians, 55, of which 28 were single infection intermittents, 23 were double infection intermittents (quotidian) and 4 were remittent or continued; malignant infections (estivo-autumnal), 62 cases, of which 24 were tertian intermittents, 16 were quotidian intermittents and 22 were remittents. In these 120 cases plasmodia were found in 113, the failure to find plasmodia in 7 being due to a lack of cover glasses during a portion of August. All those in which plasmodia were not found were typical benign tertian fevers. There was in the series one pernicious case. No cases of malarial cachexia developed. Typical parasites were found in all the quartan intermittent cases. The plasmodia were demonstrated in 48 of the 55 cases diagnosed as benign tertian fever, and in many of the cases of double infection the two crops of parasites were easily demonstrated in the blood. In the 62 cases of the estivo-autumnal infections the plasmodia were found in all. Crescents were found only twice, due to the fact that the patients were received promptly on appearance of first symptoms and were treated with quinin before the usual time necessary for development of crescents had elapsed. There were 24 cases of malignant (estivo-autumnal) tertian fever so classified on clinical grounds. There were 16 cases of malignant (estivo-autumnal) quotidian fevers, and 22 cases of malignant (estivo-autumnal) remittent or continued fevers, 2 having tertian paroxysms, 13 quotidian and 7 showing no characteristic periodicity in the febrile reaction. None of these cases continued over a week. Estivo-autumnal plasmodia were demonstrated in all. Nausea and vomiting were marked and annoying symptoms. Out of the 62 cases nausea occurred in 38, and vomiting in 23. These symptoms in most cases were confined to the period of marked febrile reaction. Diarrhea was noted in 7 cases. Abdominal pain, in most cases associated with tenderness on palpation, was recorded in 18 cases. Forty-seven patients complained of headache, and 41 of more or less generalized pain in the back and limbs. Cough was present in 11 cases, and herpes on the lips in 3. Urticaria occurring at the time of paroxysms and ephemeral was noted in 2 cases. No case with infection by two types of plasmodia was detected and no cases resisting quinin and resembling typhoid were observed. The urine was examined in the entire series of cases. Albuminuria was not noted in any case. The treatment employed in these cases consisted of rest in bed, liquid diet and in most cases a cathartic, usually calomel followed by magnesium sulphate, was a routine treatment. When quinin was administered it was given in doses of 0.5 gm. in solution four times daily during the stay in hospital, unless this was unduly prolonged by some pathologic condition other than the malaria. On leaving the hospital each patient was required to take the following course of quinin sulphate treatment: For two weeks 0.5 gm. twice daily, at the end of which 0.5 gm. three times weekly was given for two months. At the end of two months 0.5 gm. daily was given for a week. Quinin was given in solution, except when it caused nausea and vomiting, in which case capsules or tablets were substituted. The action of quinin has been found efficient and prompt in all cases. Arsenic was given in addition to quinin in a few of the recurrent cases.

17. *Perforating Gastric Ulcer*.—The points of interest in the 3 cases reported by Jones are as follows: All cases were perforations of chronic ulcers, the history of ulcer varying from one and one-half to ten years. The perforation occurred

in the midst of a large indurated and thickened area which made it impossible to close the perforation by sutures with any degree of security. In 2 cases the ulcers were located about an inch from the pylorus, directly on the lesser curvature, while in one case it was about three inches from the pylorus and one and one-half inches below the lesser curvature. The time which elapsed between the time of complete perforation and operation was respectively eight hours, seventeen hours and one hour. A gastroenterostomy was done in all three cases; in one case with the Murphy button and in two cases by simple suture. These two patients made a complete recovery. The patient in whom the Murphy button was used died as the result of two more perforations, which Jones believes were caused by the presence of the button. He says that he will never again use the button in such an operation.

Medical Record, New York.

January 18.

- 20 *Observations on Nephropotosis and Nephropexy. A. Sturm-dorf, New York.
- 21 *Role of Saline Solution in the Treatment of Pneumonia. J. M. Taylor, Philadelphia.
- 22 An Inquiry Into the Scientific Principles Which Underlie the Milk Feeding of Infants. T. S. Southworth, New York.
- 23 *Obstruction of the Pylorus. R. H. Halsey, New York.
- 24 Clinical Aspect of Rheumatic Endocarditis. J. D. Morgan, Washington, D. C.
- 25 *Non-Operative Method of Treating Prostatitis. W. B. Snow, New York.
- 26 *New Method of Treatment of Acne. E. Moschcowitz, New York.

20. *Nephropotosis and Nephropexy*.—During the past nineteen years Sturm-dorf saw 112 cases of nephropotosis, and among these 83 patients were operated on, all in the course of the last six years. In this series no mortality and three accidents were encountered; an injury to an abnormally attached, accessory renal pelvis, and two instances of urinary fistula, resulting from superficial parenchymatous lesions produced in the packing of a very adherent friable capsule.

21. *Role of Saline Solution in Pneumonia*.—Taylor says that saline solution, used early, preserves the blood's normal fluidity, renders normal osmosis possible, and gives free sway to the immunizing process. He urges that delay in the use of the salines is just as dangerous as delay in administering antitoxin in a case of diphtheria; and, moreover, that the blood in infections suffers such rapid depletion of saline elements, the effect of which is to impair the efficiency, and finally to arrest the protective functions of, the organism, that this constitutes one of the most active causes of death. The practical recommendation is to begin the internal use of saline solutions, especially those containing sodium chloride and the other saline constituents of the blood, from the outset in pneumonia and other infectious fevers.

23. *Obstruction of Pylorus*.—Halsey reports seven cases of pyloric obstruction, of which four were benign and three malignant. Six patients were operated on, five of the operations being gastroenterostomies. Of three benign cases in which operation was done only one was suitable for pyloroplasty. Only in one instance of the seven was permanent relief afforded by medical treatment. The author's conclusions are as follows: 1. A history of digestive disturbance extending over several years accompanies the non-malignant conditions; while a perfect euphoria, followed by a few months of increasing difficulty, is associated with the malignant cases. 2. A stomach distended with food contents and in active peristalsis, has an obstruction at the outlet, whether a tumor can be felt or not. 3. An obstruction of the pylorus may be due to a tumor which can be felt in another than the right upper quadrant. 4. The presence of lactic acid and the Oppler-Boas bacillus must not be interpreted to indicate the presence of a cancer; nor, on the other hand, does the finding of free hydrochloric acid and sarcine contraindicate malignant disease. 5. Retention of food in the stomach can cause a suppression of the secretion of hydrochloric acid and permit the formation of lactic acid and the growth of Oppler-Boas bacilli. 6. The selection of treatment should depend on the probable cause, as relief can be obtained in some cases without operation. In selecting the operation, pyloroplasty should have the preference when a choice is possible.

25. *Non-Operative Method of Treating Prostatitis*.—Snow

has treated about forty cases of prostatitis in patients of different ages by means of the static wave current and vacuum tubes. In no case has there been failure to produce some degree of improvement, and in 75 per cent. of the cases so treated there has been complete relief from the symptoms and a cessation of the disposition to relapse. The technic of the method is described and several especial electrodes devised by the author are shown in illustrations. He attributes the effect of the treatment mainly to the mechanical contraction produced and arrives at the following conclusions: 1. When simple congestion is present in the early stages of the affection the relief is prompt. 2. When the gland has been enlarged for a number of years with resulting infiltration and development of vesical irritation and obstruction of the urethral passage, the lesion is capable of being abated and the congestion relieved with the absorption of infiltrated exudates, the hyperplastic tissue only remaining. 3. In the aged, in whom the gland has become greatly enlarged, and is dense and hard from the growth of hyperplastic fibroid tissue, the inflammatory process will be abated, affording a degree of relief to the obstruction commensurate with the site and extent of the inflammatory process. The dilatation of the bladder which has intervened may be greatly relieved and cured in most cases, he states, by the persistent application of the electrical current over the pubis and by an electrode carried high into the rectum and pressed forward against the bladder, together with judicious washing of the bladder and the use of strychnin. The current applied in this manner induces temporarily contraction of the muscular coats, and finally restores sufficient tone to enable the organ completely to empty itself.

26. **New Treatment of Acne.**—Moschowitz has applied Biers' principle of hyperemia to the treatment of acne and reports very good results. The procedure consists in the application of dry cups to the affected region for one-half hour, once or twice a day. The suction must be very slight and the cup is removed and reapplied every one or two minutes. It takes from two to five sessions for each area to effect the desired result. The method does not prevent the appearance of new pustules, although they become less frequent. Eight patients were treated by this method alone with satisfactory improvement.

St. Louis Medical Review.

January 6.

27. **Colliery and Mill Explosions: "Fire-Damp" Falsely Accused.** J. Knott, Dublin, Ireland.
28. **Sapremia.** W. F. Waugh, Chicago.

Lancet-Clinic, Cincinnati.

January 13.

29. ***Autointoxication.** D. L. Field, Jeffersonville, Ind.
30. ***Antiquity and Fallacy of Animal Extract Therapy.** W. G. McFadden, Shelbyville, Ind.
31. ***Tonic Alterative Action of Copper and Arsenic in Primary and Secondary Syphilitic Cases.** G. F. Butler, Chicago.

29.—See abstract in THE JOURNAL, Nov. 4, 1905, page 1436.

30. **Antiquity and Fallacy of Animal Extract Therapy.**—McFadden sums up his article as follows:

This theory, as I have shown, is in harmony with the therapeutics of the sixteenth century, which recommended that the extracts from the various organs and glands be administered for diseases of corresponding parts. Between so much faith, and so little, where do we stand? The profession is constantly deluded by those who claim to enlighten us by their carefully prepared statements regarding the clinical and physiologic action of these animal extracts. This makes it more and more incumbent on the intelligent and thinking physician, who is familiar with the history of his profession, ancient, mediæval and modern, to limit his prescriptions to the scientific materia medica, of which he is supposed to possess valuable and definite information, and thus great good may finally result from studying this fantastic and superstitious practice, for which in this paper we have found champions, both in ancient and modern therapeutics.

31.—THE JOURNAL, Nov. 4, 1905, page 1436.

Annals of Surgery, Philadelphia.

December.

- 31½. ***Operative Treatment of Tumors of the Bladder.** F. S. Watson, Boston.
32. **Sarcoma of the Bladder.** C. G. Darling, Ann Arbor, Mich.
33. **Rupture of the Male Urinary Bladder.** O. Horwitz, Philadelphia.
34. **Intra-peritoneal Rupture of the Urinary Bladder.** J. R. Cook, Fairmont, W. Va.
35. **Roentgen Method in Lithiasis of the Urinary Tract.** C. Beck, New York.
36. ***Destroying the Urogenital Diaphragm or Pelvic Floor as a Means of Relieving Prostatic Ischuria.** A. New Operation. E. W. Andrews, Chicago.

37. ***Prostatic and Periprostatic Abscess.** S. Alexander, New York.

- 37½. **Case of an Hemaphroditic.** D. P. Allen, Cleveland, Ohio.
38. ***Law Accelerating Risk in Cancer.** E. W. Andrews, Chicago.
39. **Use of X-Rays in Carcinoma.** W. A. Pusey, Chicago.
40. **Brown Atrophy of the Heart as a Result of Cholecystitis and as a Complication of Cholecystectomy.** B. Holmes, Chicago.

31½. **Operative Treatment of Bladder Tumors.**—Watson proposes to substitute bilateral lumbar nephrotomy and the establishment of renal fistula in cases of bladder tumor for ureteral implantation in connection with bladder resection or total extirpation, and suggests that the bladder operation be done after an interval and not together with the nephrotomies.

36. **New Operation for Relief of Prostatic Ischuria.**—Andrews describes the modification of an operation devised by him in 1902. The operation may be called a prostatolysis or displacement of the organ from between the jaws of the pubic rami to a looser position behind and below. This involves the practical destruction of the urogenital diaphragm to the extent that it no longer forms a transverse musculo-ligamentous septum or floor holding and compressing against the bone, the neck of bladder, and the prostatic urethra. Andrews has devised a large opening made by first pushing up the testes and holding them out of the scrotum with a truss or binder, and then cutting the skin and fat in a curved flap corresponding with the pubic arch. The apex of this flap is the pendulous portion of the penis. When traction is made the opening becomes diamond shaped and shows the following structures from the symphysis backward: (1) A space of fat about one-half inch wide; (2) the ligaments attaching the penis to the pubis, and the prostatico-pubic ligaments between which pass (3) the crura of the corpora spongiosa of each side; (4) a large vein, the dorsal vein of the penis, with two smaller arteries and two nerves. The fibers of the levator ani muscle, embracing the prostate and the inner surface of the obturator internus, come forward in the lateral part of the field, and the deep fascia fills the whole space with a strong covering, which must be cut away in front before one gets inside the pelvic floor. The internal pubic artery, and particularly a large branch to the bulb, must be avoided in doing this. After pushing aside the vessels here encountered and dividing the pubic ligament of the penis, the cutting off of the deep fascia and part of the levator ani allows the membranous urethra and prostate to be pulled into view by traction on the penis. The pubo-prostatic ligaments are now in plain view, and are made tense by traction. They appear to be about 1.5 or a centimeter long, and if they are both divided the prostate will come still further into view. This partial destruction of the pelvic floor is permanent, and is of great value in preventing further compression of the prostatic urethra by the grasp of the levator ani. It also makes the bladder prolapse a little, so that there is no longer a retroprostatic pouch, but the orifice of the urethra becomes the lowest point. Andrews advises cutting the pelvic diaphragm supporting the prostate along both lateral borders. As soon as this is done the whole mass, including prostate and neck of bladder falls freely backward and downward, almost as if it were herniating into a new position. As this is the aim of the operation it need cause no anxiety. After the finger has made a small opening through the urogenital diaphragm its ligamentous and muscular fibers can be held close to this plane. From the operator's standpoint it is much as if he were doing a hysterectomy and had the broad ligament in his grasp. Andrews found that a rapid and bloodless way of making the section is by applying broad ligament forceps, cutting between them and the prostate, and then using homostatic sutures on the stumps. The operation of prostatolysis is complete when the side attachments of the prostate are divided. The wound is closed with only small capillary drains in the corners. The testes easily find their way into the loose dartos again. Little reaction or shock follows this operation, and there is scarcely any danger of injuring bladder, rectum or urethra in doing it.

37. **Prostatic and Periprostatic Abscess.**—Alexander treats all forms of prostatic abscess by opening them into the prostatic urethra through a median perineal incision, whether the

pus is confined within the capsule or has extended outside the capsule, whether it is above the triangular ligament or has extended into the perineum or into the ischioanal fossa. He is convinced that this operation is sound in principle, and that abscesses thus treated heal promptly and with less danger to the patient than by any other method. The technic of the operation is as follows: The patient is placed in the lateral lithotomy position; the membranous urethra is opened on a staff; the prostatic urethra is dilated and explored by the finger; a finger of the other hand is passed into the rectum, and between the two fingers the extent of the abscess cavity can be defined. The abscess is opened by tearing with the finger through the mucous membrane; its cavity is explored, any fibrous bands which traverse it are broken down, its floor is made level with the floor of the urethra, and the opening in the urethral wall is enlarged sufficiently to insure thorough drainage. This is done entirely with the finger; to do it efficiently requires experience; rough and unskillful manipulation may cause severe hemorrhage. A catheter, No. 28 or 30 F., is introduced through the perineal wound into the bladder, and is retained by tapes fastened to a waistband. One or two strips of gauze are passed alongside of the tube to the edge of the abscess cavity, but the latter is not packed. The tube and gauze are removed on the third day, sometimes on the second. The wound is then treated as a perineal section. The patient passes all urine through the urethra before the end of the second week; the perineal wound is healed at the end of the third or fourth week. Some patients require treatment of the posterior urethra for a short time after the complete closure of the perineal wound. In cases of periprostatic abscess in which the pus is above the triangular ligament, the abscess cavity is opened and explored by the finger through the perineal incision; this is possible provided the floor of the membranous urethra is thoroughly cut to the apex of the prostate so as to divide the lower border of the triangular ligament. A large abscess between the rectum and the prostate is to be drained by a strip of gauze passed into the cavity alongside of the perineal tube; this is removed at the end of twenty-four or forty-eight hours. When the abscess has extended into the ischioanal fossa, an additional incision is necessary to drain this space. Perineal abscess beginning in or about Littre's or Cowper's glands or the intrabulbar glands should be similarly treated.

38. Law of Accelerating Risk in Cancer.—According to Andrews, the risk of recurrence in malignant growths increases as the square of the time of growth; or, conversely, the risk of recurrence diminishes in the ratio of the square root of the time after incidence. Thus, doubling the time increases the risk of recurrence or metastasis fourfold; tripling the time increases the risk ninefold, etc. The law thus stated, says Andrews, is an admonishment that an early golden period is always given for saving the life of the cancer victim, and imperatively commands action during the brief and precious stage. Andrews maps out a working formula, which, when applied clinically, will determine certain limits beyond which it is useless to operate for a radical extirpation. He calls this the "risk curve." The "risk curve," expressing mathematically the life chances of the patient, is a function of two variable elements—the rate of increase and the total age of the disease. The method of making the curve is described in detail. Andrews has tested his method in a large number of cases, and a few by way of prophecy, and has every faith in its accuracy. By means of this curve he has found it possible to exclude, with fair accuracy, all those cases in which operation ought not to be performed.

Iowa Medical Journal, Des Moines.

December.

- 41 *Appendicitis as Treated by Ochsner. L. W. Littig, Iowa City.
- 42 Compression of the Abdominal Aorta in Postpartum Hemorrhage. C. Jonsson, Clinton.
- 43 The Inevitable Conflict. G. P. Neal, Ft. Madison.
- 44 Dorsal View of the Ureter. R. Robinson, Chicago.
- 45 A Plea for the More Frequent Recourse to the Operative Treatment of Hernia. Q. C. Fuller, Milford.

41. Ochsner Treatment of Appendicitis.—Littig contends that the Ochsner plan of treating certain cases of appendicitis can not supplant the operative treatment, although, according to

Ochsner, it can so modify a spreading or a septic peritonitis that the mortality will be very small after operation. Littig says that it is here that the non-operating man has sinned. He has applied the Ochsner plan to all cases, whether with spreading infection or not. By his delay he has vastly increased the number of spreading cases. Littig claims that by operating at once, the spreading of septic cases will not be seen; that the Ochsner plan does not apply to more than 0.1 per cent. of all cases during the first twenty-four hours and to not more than 0.2 per cent. during the second twenty-four hours. He believes that operation by a competent surgeon, done as soon as the diagnosis is made, is the only rational treatment for appendicitis.

Virginia Medical Semi-Monthly, Richmond.

December 22.

- 46 Infantile Diarrhea. C. S. Webb, Bowling Green, Va.
- 47 Pulse-Tension, Arteriosclerosis and Nephritis, in Several Aspects. W. S. Gordon, Richmond.
- 48 Rybolic Plaque. T. B. Marshall, Manila, P. I.
- 49 The American Health Officer. E. A. Timmons, Columbia, Tenn.
- 50 *New and Most Efficacious Method for Removing Faucial Tonsils. C. R. DuFour, Washington, D. C.

50. Tonsillotomy.—DuFour believes that the proper method of removing the faucial tonsils, whether enlarged or not, is to enucleate them. In the case of children he gives an anesthetic, inserts a mouth gag, and with proper instruments loosens the tonsil from any attachments to the pillars; then, with a tenaculum or forceps he pulls the tonsil well out of its bed, slips the wire of a snare made for the purpose over it, well down to the base, and then with one stroke enucleates the tonsil. The after treatment consists in spraying the throat with an antiseptic, keeping the patient in the house for several days, and giving soft, nourishing food. The shock of the operation is said to be slight and recovery rapid.

Brooklyn Medical Journal, New York.

December.

- 51 *Rapid Correction of Lateral Curvature of the Spine. W. Truslow, New York.
- 52 Perforation of the Gall Bladder. R. S. Fowler, Brooklyn.
- 53 Clinical Review of Some Recent Cases of Tubal Pregnancy. S. J. McNamara, New York.
- 54 Report of the Committee Appointed by the Council of the Medical Society of the County of Kings to Prosecute Illegal Practitioners of Medicine.

51. More Rapid Correction of Scoliosis.—In order to accomplish greater correction of the deformity Truslow substitutes the horizontal for the vertical position when applying the jacket. His method is described in detail. He concludes that systematic physical training is the main therapeutic agent in the correction of lateral curvature of the spine, and that structural changes can not be overcome by muscular efforts alone. Plaster-of-Paris jackets, applied under conditions of progressive longitudinal and lateral traction and frequently renewed, will rapidly overcome muscular contraction. They also may be advantageously employed in suitable cases of moderate severity, but the treatment must be promptly followed by the use of a brace and vigorous physical training.

American Journal of Urology, New York.

December.

- 55 Treatment of Tumors of the Bladder. D. Wallace.
- 56 *Results of Internal Urethrotomy with Bazy's Measuring Urethrotome. J. F. Parla.
- 57 Renal Neoplasia Originating from Aberrant Suprarenal Tissue Gerns. F. Peuckert.

56. Internal Urethrotomy with Bazy's Urethrotome.—Joly reports the results obtained with this instrument in the treatment of 42 cases. He says that the principal reproach that may be made against the various urethrotomies in general is the impossibility or difficulty of exactly measuring the stricture and consequently the risk that one runs of cutting the healthy portions of the urethra. With Bazy's instrument the seat, length, caliber and number of strictures can be determined exactly. Bazy's urethrotome, contrary to that of Maisonneuve, will only cut the stenosed tissues and will respect the healthy parts. No hemorrhage occurs, although three incisions are made, because fibrous tissue alone is cut. It allows one to introduce a sound of quite large caliber, generally No. 16 Charrière, and in almost all the patients operated on the increase in caliber of the urethra obtained has been quite sufficient without any danger of recurrence.

Ohio State Medical Journal, Columbus.

November 15.

- 58 *Gastric Features of One Hundred and Fifty Cases of Pulmonary Tuberculosis. L. A. Levison, Toledo.
 59 Infection of the Gall Bladder in Typhoid Fever. S. P. Kramer, Cincinnati.
 60 *A New Truss for Umbilical Hernia. S. W. Kelley, Cleveland.
 61 The General Practitioner. A. B. Swisher, Marysville.
 62 Contract Practice. J. F. Fitzsimmons, Bucyrus.
 63 *Operation for the Radical Cure of Large Inguinal Hernia. J. U. Barnhill, Columbus.
 64 Senile Atony of the Bladder. C. M. Harpster, Toledo.

58. The Stomach of Pulmonary Tuberculosis.—Of the 150 cases considered by Levison, 113 were males and 37 were females. In 32 cases (21.3 per cent.) there was a history of gastric trouble at some time or another, previous to the appearance of the pulmonary affection. Twenty-seven of these patients had gastric symptoms after the pulmonary condition appeared. In 112 of the cases (74.6 per cent.) some form of stomach trouble was present at some stage of the disease. Thus in 85 cases the gastric symptoms followed the pulmonary one. This, says Levison, shows that pulmonary tuberculosis markedly predisposes toward gastric trouble. Vomiting was the symptom in 78 cases. In most of these cases it was the direct result of nausea, after eating. In a number of instances, however, it had no relation to food injection. In a few instances the vomiting seemed to have a neurotic origin. Diarrhea was present in 48 cases.

60. New Truss for Umbilical Hernia.—Kelley describes his truss as follows: It is a pad or plate made of any smooth, impervious material, with little buttons or pegs on the back of it to which are buttoned the ends of the adhesive straps. They can be made of any shape and of different sizes, and the number of buttons or pegs is not an essential point. There should be at least two and, if not more than two, they should be placed vertically with reference to the body. The square shape with rounded corners, and about two and one-quarter inches across, with four buttons, is most convenient. A couple of inches of one end of each adhesive strap is folded on itself and this folded again, and once again, so that there are four thicknesses of plaster strengthening the end. Through this a buttonhole a half-inch from the end is cut with a pen-knife. The folded end prevents the plaster from adhering to the skin near the pad. The straps are buttoned on to the pad and adjusted round the body. The straps can be unbuttoned and the pad removed at any time, the skin cleansed and powdered, and the pad washed and replaced with the greatest convenience and without removing the plaster from the skin. All portions of the skin that are to be covered either with pad or plaster should be washed thoroughly and antiseptically, then the face of the plaster passed over the flame of an alcohol lamp before being applied, and then this hard rubber truss pad used; the strapping can be left on for weeks together and the mother or nurse can do the rest.

63. New Operation for Inguinal Hernia.—In Barnhill's operation the skin and superficial fascia are divided from the spine of the pubis slightly beyond the internal abdominal ring. The external oblique aponeurosis is then divided to about the same point, leaving the lower flap of fairly good width. The sac is then carefully separated from the cord, opened to free it of intestine, transfixed, ligated high up and excised, when it will retract through the internal ring. If there are varicose veins in the spermatic cord the largest are ligated and excised. The cord being held up out of the way, the transversalis fascia and internal oblique, including the conjoined tendon, are then stitched to the shelving portion of Poupart's ligament, two stitches being placed in the internal oblique muscle above the opening for the passage of the cord to gather up the muscle and fascia, with a view of obliterating the inguinal fossa, care being taken to bring the cord well down to the lower border of the internal oblique, thus giving it considerable obliquity in passing beneath these muscles. Mattress sutures are then passed through the lower flap close to Poupart's ligament—that is, in the lower portion of the outer flap—catching the margin of the internal oblique and its fascia and the lower margin of the upper or internal flap. Three such mattress sutures are placed in the upper part of the incision over the muscle and cord, the other four being passed beneath the cord.

A small incision, sufficient to make an opening large enough for the passage of the cord, is made in each flap; in the upper one at a point a half-inch below that at which the cord passes out through the internal oblique, and the one in the lower flap at the junction of its lower and middle third. The mattress sutures are then tied and the cord passed through the opening in the upper flap. The lower flap is then carried upward over the cord and stitched to the upper flap above the cord, except the lower third, which is passed beneath the cord and stitched in like manner. Both layers of the superficial fascia are then approximated and the wound closed with a subcuticular silk-worm-gut suture.

New Orleans Medical and Surgical Journal.

December.

- 65 *The Kidneys and the Tongue in Yellow Fever. E. M. Dupiquier, New Orleans.
 66 Typhoid Fever in Country Practice. B. O. LeBlanc, St. Gabriel, La.
 67 Tetanus Statistics. J. D. Bloom, New Orleans.
 68 Septic Awakening by Chloroform General Anesthesia. J. D. Bloom, New Orleans.
 69 Talk on X-Rays, with Illustrations. N. F. Thiberge, New Orleans.

65. The Kidneys and the Tongue in Yellow Fever.—Dupiquier says that the tongue of the yellow fever patient is red and raw looking, having a glazed surface studded with enlarged papillae; it resembles the so-called strawberry tongue of severe scarlatinal toxemia. He has observed this tongue on the fourth day in yellow fever, and has observed that it is of grave prognostic importance. He depends on this sign of the tongue as an index of a severe yellow fever toxemia, which will eventually either tell on the kidneys or on the nervous system to the extent of annihilation.

Journal of Medical Society of New Jersey, Newark.

December.

- 70 What the Osteopaths Demand—How Shall the Medical Profession Regard Them? P. Marvel, Atlantic City, N. J.
 71 *Uses of Adrenalin in the Peritoneal Cavity. E. Marvel, Atlantic City, N. J.
 72 Study of the Present Epidemic of Cerebrospinal Meningitis. F. W. Pinneo, Newark.

71. Adrenalin in the Peritoneal Cavity.—According to Marvel, adrenalin can be used safely in the peritoneal cavity. When shock or depression exists, while the peritoneum is open, it offers the most convenient and as effectual a means as intravenous infusion for combatting these conditions. It controls peritoneal oozing, prevents the formation of peritoneal adhesions, and lessens the number of those reforming.

Quarterly Journal of Inebriety, Hartford, Conn.

October.

- 73 Memorial Address on the Life and Work of Dr. Norman Kerr. D. C. Crothers, Hartford.
 74 *Minor or Border-line Psychoses of Alcoholism. F. P. Norbury, Jacksonville, Ills.
 75 Wines and the Poets—A Critical Study of the Poet's Devotion to the God of Wine. J. Madden, Milwaukee, Wis.
 76 Use of Hypnotic Drugs in the Treatment of Insomnia. W. M. Smith, Wakefield, Eng.

74.—This article appeared in THE JOURNAL, March 18, 1905, page 865.

Cleveland Medical Journal.

November.

- 77 Truth Without the Poetry, Concerning Uric Acid. J. J. R. Macleod, Cleveland.
 78 Remarks on Thyroidectomy. C. A. Hamann, Cleveland.
 79 Retardation in the Growth of Limbs, Due to Tropic Disturbance. W. G. Stern, Cleveland.
 80 An Effective Method of School Room Lighting. L. K. Baker.

Wisconsin Medical Journal, Milwaukee.

December.

- 81 Etiology of Appendicitis. R. H. Jackson, Madison.
 82 Early Diagnosis of Consumption. R. J. C. Strong, Beloit.
 83 *Atherosclerosis. L. A. Potter, Superior.
 84 Necessity for the Annual Systematic Examination of School Children's Ears, Noses and Throats by School Teachers. J. P. McMahon, Union Grove.
 85 Convalescence. J. H. Vojte, Oconomowoc.

83.—See abstract in THE JOURNAL, July 1, 1905, page 67.

Pennsylvania Medical Journal, Athens.

December.

- 86 *Address in Hygiene and State Medicine. G. W. Wagoner, Johnston.
 87 Chronic Rheumatism. C. F. Palmer, Boston.
 88 Three Cases of Meningocele with Recovery. G. W. Guthrie, Wilkesbarre.
 89 Diagnosis of Acute Hemorrhagic Pancreatitis. J. C. Wilson, Philadelphia.
 90 *Wandering Gallstones. W. L. Estes, South Bethlehem.

- 91 "Surgery of the Gall Bladder and Ducts. J. M. Baldy, Philadelphia.
 92 Observations on Cholelithiasis. A. C. Wood, Philadelphia.
 93 "Case of Malignant Lymphoma (Lymphosarcoma) with Autopsy, and a Brief Consideration of Splenic Anemia. J. A. Lichty, Pittsburgh.
 94 "Color Comparisons in Medicine. H. E. Wetherill, Philadelphia.
 95 Protective Inoculations Against Bacterial Diseases. D. H. Bergey, Philadelphia.

86, 87, 93 and 94. Id.—Oct. 28, 1905, pages 1349 and 1350.

90 and 91. Id.—Nov. 4, 1905, page 1438.

Ohio State Medical Journal, Columbus.

December.

- 96 Relation of Ophthalmology to General Medicine. T. R. Pooley, New York.
 97 Surgical Treatment of Paralytic Deformities. W. G. Stern, Cleveland.
 98 Social Status of Tuberculous Persons. W. W. Pennell, Mt. Vernon.
 99 Treatment of Cerebrospinal Meningitis. A. E. H. Maerker, Napoleon.
 100 Ectopic Gestation. W. A. Melick, Zanesville.
 101 Co-operative Sanitation. H. E. Handerson, Cleveland.
 102 Case of Infant's Statues Regarding this Disease. A. S. Barnes, Botkins.

Bulletin Johns Hopkins Hospital, Baltimore.

December.

- 103 Contributions of Pharmacology to Physiology. Herter Lecture. H. Meyer.
 104 Cardiograms Obtained from a Case of Operative Defect in the Chest Wall. J. Erlanger, Baltimore.
 105 Fibroma of the Abdominal Wall: Primary Carcinoma of the Right Fallopian Tube, an Accessory and Twisted Omentum. T. S. Cullen, Baltimore.
 106 Sarcoma of the Eye, Involving Chiefly the Ciliary Body. P. G. Woolley, Manila.
 107 Renal Decapsulation in Nephritis. H. Harris, San Francisco.
 108 Dr. Charles Frederick Wiesenthal's Medical Reports. E. F. Cordell, Baltimore.

California State Journal of Medicine, San Francisco.

December.

- 109 Medical Laws and the Influences that Mold Them. S. D. Van Meter, Denver.
 110 Theory of Disinfection. A. E. Taylor.
 111 Methods Employed in the Eradication of an Infectious Disease in the Chinese Quarter of San Francisco. W. C. Hessler, San Francisco.
 112 Medical Treatment of Diseases of the Gall Bladder and Ducts. A. H. Bares, San Francisco.
 113 Stitch-Hole Abscess. J. H. Barbat, San Francisco.
 114 Extruterine Pregnancy. R. A. Whiffen, San Jose.
 115 Uterine Fibroids Complicating Labor. F. R. Horol, Arcata.

Texas State Journal of Medicine, Fort Worth.

December.

- 116 Review of State Health Departments and a Plea for a State Board of Health for Texas. A. Woldert, Tyler.
 117 Value of Antistreptococcus Serum in Streptococcal Infection of the Lung. L. P. Sessions, Rockdale.
 118 Operations for Retrodisplacements. J. M. Inge, Denton.
 119 Importance of Staining the Malarial Parasite. Z. T. Lillard, Houghton.
 120 Modern Aspects of Neurasthenia and Its Treatment. J. Puntton, Kansas City, Mo.
 121 Psychology as a Factor in Medicine. M. Dugan, Eagle Pass.
 122 Surgical Treatment of Recurring Iritis. G. P. Hall, Houghton.
 123 Surgical Treatment of Retrodisplacement of the Uterus. B. Saunders, Ft. Worth.
 124 Parable No. 4, from the Book of Ethics. T. Esculapius.
 125 Use of Milk Preservatives. W. S. Carter, Galveston.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

December 30.

- 1 "Preliminary Inquiry Into the Tonicity of the Muscle Fibers of the Heart." J. Mackenzie.
 2 Inebriety as a Physical Disease. H. W. Mann.
 3 "Peculiar Form of Acromegaly, Possibly Resulting from Injury." J. C. P. Perry.
 4 Addison's Disease. W. Tibbles.
 5 The Parathyroids in Grave's Disease. S. G. Shattock.
 6 The Pathogenic Ticks Concerned in the Distribution of Disease in Man. R. Newstead.
 7 "The Ethics of a Prescription." G. A. Batchelor.
 8 "A Case of Pneumothorax." J. McKie.

1. Tonicity of the Heart Muscle.—Mackenzie says that in considering the causes of dilatation of the chambers of the heart one can not fail to be struck with the inadequacy of the explanation usually given for this condition. That neither the difficulty opposed to a chamber during its emptying nor the distending force during its diastole is the cause of the dilatation, becomes evident when the conditions observed in certain hearts are carefully studied. The wall of the left ventricle may be so thinned that it bursts in its efforts to overcome the aortic pressure, and yet the walls show no signs of dilatation.

On the other hand, dilatation of the left ventricle may occur even when the diastolic force filling the ventricle is greatly diminished, as in cases of pure mitral stenosis. As the permanent lengthening of the skeletal muscles is due to lack of tone, and as the lengthening of the muscle fibers of the heart is the immediate cause of the dilatation, and, therefore, comparable to the lengthened skeletal muscle, Mackenzie believes that the cause of dilatation will in all likelihood be found to be due to depression in the function of tonicity. He also believes that the causation of the functional murmur at the mitral and tricuspid orifices may be explained as due to a depression of tonicity affecting the muscle fibers forming the auriculo-ventricular ring. He says that anyone who carefully studies the condition of the heart associated with these murmurs can not but be impressed with the fact that they are frequently met in cases that show little or no enlargement of the heart. As, on the other hand, one meets with cases of considerable dilatation without these murmurs, Mackenzie thinks it justifiable to assume that the tonicity of the muscle fibers forming the auriculo-ventricular ring may be differently affected from that of the muscle fibers forming the wall of the ventricle.

3. Peculiar Form of Acromegaly.—Perry's case is of interest because the patient presented merely a local enlargement of the extremities. There was no pain, no nervous irritability, no headache, and no progressive loss of sight and muscular strength. The facial aspect was not characteristic of the disease. There was no enlargement of the thyroid gland. The patient, aged 20, gave a history of having fallen from a tree in his early youth, fracturing the frontal bone. Perry thinks that this fracture may have had some bearing on the local condition either by reflexly damaging the pituitary body or by causing some obscure changes in its growth.

7. Ethics of a Prescription.—Batchelor suggests that in order to protect physicians professionally and commercially, and their patients medically, and to conduce to the fulfillment of the ethical requirements of a prescription, each prescription should be headed by the patient's name and address, and that the prescription should be signed by the writer with his ordinary signature, instead of, as now, merely by initials in such hieroglyphic form that it is only decipherable by himself. The prescriber's address should be given, and it should be stated for how long or for what quantity the prescription is to be made up, and that it should only be available for such time and quantity, and for the person for whom it is written, and that after the prescription has fulfilled the instructions of the writer it shall be dead.

8. Pneumothorax.—McKie reports a case of pneumothorax involving the entire left side and accompanied by no symptoms other than an initial pain. The onset was sudden, without previous manifestation of disease or ill-health. The patient recovered completely.

The Lancet, London.

December 30.

- 9 Some Clinical Aspects of Pneumonia. D. W. C. Hood.
 10 "Medical Treatment of Uterine Fibroids and Its Limitations." T. Wilson.
 11 "A Case of Acute Hemorrhagic Pancreatitis." H. V. Munster.
 12 Consideration of the Cholera, Yellow Fever and Plague Regulations and Allens Act, 1905, in Their Relation to the Prevention of the Spread of these Diseases. D. Forbes.
 13 Four Cases of Hysterectomy. S. Keith.
 14 Case of Melena Neonatorum; Recovery. E. F. Henap.

10. Medical Treatment of Uterine Fibroids.—Wilson states that although uterine fibroids are extremely common, only a small proportion of them give rise to symptoms. In 30 per cent. of those that do the consequences are so serious as to demand operative treatment. Of the other 70 per cent., some with no active symptoms merely require watching, while the others call, in addition, for medical treatment, under which heading may be included minor surgical and other local means. Medical treatment may be direct or symptomatic. The direct or absorptive treatment does not promise much advantage, especially if one bears in mind the many sources of fallacy that interfere with a correct appreciation of the results of treatment. Symptomatic treatment is successful in many cases in tiding the patient over a crisis and in obviating the necessity for operation. Bleeding is most often successfully

treated by rest, érgot, and the intrauterine application of iodine. Pain requires treatment adapted to its cause; alcohol or morphin should only be administered in temporary and exceptional circumstances. The general condition of the patient, and especially the state of general nutrition and the cardiac and renal functions, should be carefully watched. Finally, operation should be recommended when bleeding gives rise to anemia and does not yield to ordinary treatment; when pain is severe and obstinate; when pressure symptoms, especially retention of urine, occur; when the tumor is rapidly increasing in size; and generally when there is evidence that the health of the patient is becoming impaired, and that such impairment appears to be referable to the uterine fibroid.

11. Hemorrhagic Pancreatitis.—Munster cites a case which he thinks is of more than passing interest because the patient survived for ten days after the onset of the affection. He ascribes this unusual duration to the fact that four or five times a day saline injections were given alternately in either axilla, varying in quantity from half a pint to a pint.

Dublin Journal of Medical Science.
December.

- 15 Conjunction of Clinical and Pathologic Work in Medicine. J. F. O'Carroll.
16 *Case of Melanuria. T. G. Moorhead.

16. Melanuria.—Moorhead cites the case of a woman, aged 30, who was the victim of a typical melanotic sarcoma of the eyeball for eight years. Eventually she began to lose flesh and her abdomen and feet became swollen. On palpation of the abdomen hard nodules of about the size of a walnut could be distinctly felt all over the upper two-thirds of the abdomen and extending downward into the iliac fossa on both sides. On percussion the abdomen was found to be dull over its anterior aspect from the costal margin to below the level of the iliac spines on each side, except for a transverse area of resonance a couple of inches above the level of the umbilicus. The blood when tested for melanin gave a negative result, and no melanotic granules were present. The quantity of urine passed in twenty-four hours never exceeded twenty ounces in volume. When first passed it was of a deep amber or slightly reddish tinge, but after standing for a few hours it became darker in color, and ultimately almost black. It usually contained a deposit of urates of a deep brownish tinge. A slight trace of albumin was present, but no blood. At the autopsy it was found that the lungs were studded over the surface with a few small melanotic growths. The heart was normal, except for one small tumor, situated in the anterior wall of the left ventricle. The liver was enormous, weighing thirteen and a quarter pounds, and extending right down over both iliac fossae. Its whole substance was infiltrated with black tumors, varying in size from that of a pea to that of a Tangerine orange. Many of them projected on the surface, and constituted the nodules felt by palpation through the abdominal wall. The liver substance between the masses was microscopically normal. The transverse colon lay in front of the liver in the position of the transverse area of resonance above alluded to. The stomach and intestines were normal, except for the fact that the small intestine was only 14 feet in length, and presented valvulae conniventes right down to the ileocecal valve. The peritoneum did not contain any actual melanotic nodules, but in many places it was of a diffuse black color. The spleen contained two small nodules, and was normal in size. The kidneys, slightly fibroid, also contained a few scattered nodules, as did the suprarenal capsules. Both these last named structures were unusually large. The pancreas and abdominal lymph glands were normal. Two large ovarian cysts were present, floated up by ascitic fluid above the brim of the pelvis, their wall being constituted by dense black melanotic tissue, about one-fourth of an inch in thickness. The fluid contained within them was of a dirty brown color, but did not give the melanin reaction.

Annales de l'Institut Pasteur, Paris.

Last indexed XLV, page 1282.

- 17 (XIX, No. 9.) Purification of Residual Waters. Epuration des eaux résiduaires des villes et des industries. A. Calmette.

- 18 *Surveillance of Drinking Waters.—Les méthodes employées pour surveiller les eaux destinées à l'alimentation. Interprétation à donner aux résultats obtenus. F. Dienert.
19 Triclanosoma Duttoni (Thiroux). Thiroux.
20 *Action des injections salines prophylactiques et thérapeutiques sur les cobayes soumis à l'Inoculation intrapéritonéale de bacille typhique et de vibron cholérique (research on guinea-pigs). I. Lubomoudrov (Moscow).
21 La recherche du bacille d'Eberth. Son importance au point de vue de la prophylaxie de la fièvre typhoïde. A. Braun.
22 (No. 10.) La déviation de l'alexine dans l'hémolyse. F. P. Gay (Brussels).
23 *Origine intestinale de la tuberculose pulmonaire. A. Calmette et C. Guérin.
24 *De la genèse des lésions pulmonales dans la tuberculose. II. Vallée.
25 *Accidents paralytiques au cours du traitement antituberculeux. P. Remlinger (Constantinople).
26 *Sur la phagocytose "in vitro" de microbes pathogènes. Löblin.
27 La formation des granulations dans les cultures des vibrions. G. Q. Khatia (Belogora).
28 (No. 11.) *Etudes expérimentales sur la syphilis. E. Metchnikoff and E. Roux.
29 Recherches sur la maladie expérimentale provoquée par l'inoculation de bacilles tuberculeux dégraissés (with fat removed). J. Cantacuzene.
30 Validité de la doctrine. G. F. Schneider and M. Bugnard.
31 *Présence de l'aldéhyde formique dans les produits gazeux de la combustion. Essais de désinfection par les fumées (smoke). A. Trillat.
32 *Fire and Smoke as Means of Defense Against the Plague.—Etude historique. Id.

18. Surveillance of Drinking Waters.—Dienert's article shows that the electric conductivity of a water is a good test for changes in it. He is convinced that the drinking water is not the sole means of the spread of typhoid fever, affirming that to date science has no authority for seeking an aseptic water for drinking purposes. Study of the electric conductivity and quantitative determination of the colon bacilli supplement each other and reveal changes in the water. A sudden increase in the amount of colon bacilli suggests the necessity for extra caution.

20. Saline Injections in Prophylaxis and Treatment of Typhoid and Cholera.—The experimental experiences related show that saline injections—either into the peritoneum or under the skin—contribute to the development in the organism, and especially in the peritoneum, of a leucocytosis and phagocytosis which oppose the development of the virus and sometimes destroy it completely when injected into the peritoneum. The saline injections prolonged the lives of the animals and enabled some to survive. After preliminary injections the animals were sometimes able to stand two and three times the fatal dose of the virus.

23. Intestinal Origin of Pulmonary Tuberculosis.—Calmette announces as the conclusions of his research that, in the immense majority of cases tuberculosis of the lungs is acquired by ingestion of bacillus-laden dust or other substances, not by inhalation. It is due to the entrance of virulent tubercle bacilli by way of the digestive tract, the same as glanders in the horse (in case of direct subcutaneous inoculation), is always the result of absorption of the glanders virus by the intestine. He does not agree with von Behring that tuberculosis in the adult is the result of the tardy evolution of intestinal infection contracted during infancy. His extensive research with young and adult goats has demonstrated that the older animals contract tuberculosis by way of the intestine more readily than do the young kids. The kids are also better protected than adults by their glandular apparatus to prevent the spread of the tuberculosis to other organs, especially to the lungs. An important conclusion from his research is the necessity for teaching consumptives not to swallow sputum. In the adult, bacilli make their way from the digestive tract into the lymphatic circulation in the mesentery without injuring the intestinal walls and without meeting with any effectual resistance on the part of the mesenteric glands. It is consequently evident that persons with bacilli in their sputa, who swallow the sputa, are constantly reinfecting themselves. These successive reinfections, he states, produce new eruptions of tuberculosis in the still intact parts of the lungs. It is necessary to supervise patients to determine the moment when they begin to expectorate bacilli, and to teach them never to swallow their sputum. These individuals should also carefully rinse the mouth with boiled or filtered water before each meal, and, if possible, after each expectoration. Bacilliferous dust is dangerous when swallowed.

24. **Origin of Pulmonary Lesions in Tuberculosis.**—Vallée is chief of the veterinary college at Alfort. He comments on the fact that in all species of animals the lung is the chosen tissue on which the tubercle bacillus settles by choice. In 43,000 tuberculous animals the lungs were found affected in 75 per cent. of all the localized cases, and in 100 per cent. of the general cases, while the liver was intact in 17 per cent. His experimental studies have also shown that ingestion of tubercle bacilli is the surest and quickest way to induce tuberculization of the glands connected with the lung. Also that the germs can pass from the digestive tract to the lungs or bronchial glands without leaving a trace of their passage in the intestinal mucosa or mesenteric glands or in any lymphatic vessel. He urges experimenting with young chimpanzees by feeding them with milk from tuberculous cows, in order to estimate the danger of hematogenic tuberculous infection of the air passages and connected glands!

25. **Paralysis After Pasteur Treatment of Hydrophobia.**—Remlinger has found 40 instances on record in 107,712 cases of treatment of hydrophobia in which paralysis followed the Pasteur injections. The paralysis finally subsided in all but 2 cases. Patients taking Pasteur treatment should be warned against getting chilled, as this seemed to be a factor in the paralysis in several instances. Extreme lassitude and weakness in the legs should suggest impending paralysis, and treatment should be suspended until these symptoms disappear.

26. **Phagocytosis in Test-tube.**—Löhlein found that phagocytosis proceeded normally even when the leucocytes (guinea-pigs) had been rinsed entirely free of all extraneous matter and were placed in test-tubes apart from all organic humors. Phagocytosis seems to be, therefore, an act of the cell, independent of the active principles contained in the organic humors. There are certain species of microbes (certain races of streptococci and of colon bacilli) which resist phagocytosis in this way. The results observed with them in the test-tubes parallel at every point the findings with these germs in the clinic.

28. **Infection of Monkeys with Syphilis and Effectual Preventive Treatment.**—In this fourth memoir Metchnikoff and Roux describe their latest experiments, carried on by the aid of the large prizes awarded to them in the last year or so. Of all the monkeys used in the tests the chimpanzees proved the most valuable for the purpose; the syphilis induced in them bore the closest resemblance to human syphilis, while there was no exception to the susceptibility of the animals. The lesions in the smaller monkeys are less characteristic, but these cheaper animals may serve for studying the attenuation of the virus and for research on prophylaxis and therapeutics. It is significant that Metchnikoff found the *Spirochaete pallida* in 23 out of 31 monkeys bearing syphilitic lesions. It might have been found in more of the monkeys, perhaps, if more sections had been stained. In regard to serum treatment, preventive or curative, the experiences related show that more powerful serums than those obtainable at present will be needed for positive results in this line. In preventing the development of syphilis after inoculation of the animals, various expedients were tried, heating the part to destroy the virus, washing with sublimate, and rubbing a mercurial salve into the part. None proved effectual except the latter, but with a salve containing 10 parts of calomel to 20 parts of lanolin they were able to prevent the development of infection after inoculation of the animal with syphilitic virus an hour before. Five monkeys thus treated with the calomel salve failed to show any signs of syphilitic infection after they had been inoculated with the virus which produced the characteristic lesions in the controls. Metchnikoff and Roux, therefore, consider it established that local treatment of parts contaminated with syphilitic virus will prevent the development of the affection. The next question is to determine the length of time in which this local treatment will prove effectual. They inoculated the tip of the ear of a macacus with virus from a chancre on the penis of a syphilitic. Twenty-four hours later they cut away the part of the ear which had been inoculated. No signs of syphilis developed, and when the animal was

inoculated again in the eyebrows sixty days later, it developed typical syphilis. They regard this experience as demonstrating that the syphilitic virus had remained localized at the point of injection for the twenty-four hours. Two other animals in the same test died before definite results could be determined.

31 and 32. **Formic Aldehyd in Smoke.**—Trillat presents evidence to show that the amount of formic aldehyd generated in the smoke of burning sugar, molasses, damp straw, etc., is sufficient thoroughly to sterilize objects in prolonged contact. Smoke from these substances should be regarded as a gaseous disinfecting agent and utilized in practice. The aldehyd is formed in all kinds of incomplete combustion. This throws a new light on the practice of disinfection with smoke, which was in current use in the days of Hippocrates and prevailed until supplanted by chemical disinfection.

Berliner klinische Wochenschrift.

- 33 (XLI. No. 44.) Experimente über ascendierende Urogenital-Tuberkulose. von Baumgarten (Tübingen).
- 34 Vorkommen von *Spirochaete pallida* bei Syphilis. de Souza Jun, and L. G. Pereira (Oporto).
- 35 Experimentelle Untersuchungen über den osmotischen Druck des reinen Magensaftes unter verschiedenen Bedingungen (osmotic tension of gastric juice). K. Sasaki.
- 36 *Hemolytic Blood Test.—Verfahren zum forensischen Nachweis der Herkunft des Blutes. M. Neisser and H. Sachs (Frankfurt).
- 37 Das Refraktometer. A. Perlmann.
- 38 *Tuberkulose-Therapie. De la Camp.
- 39 (No. 45.) La petiteesse relative du coeur et la predisposition à la tuberculose dans la croissance excessive (relative small size of heart and excessive growth in respect to tuberculosis). C. Bonchard.
- 40 Ueber Rassen-Differenzen von Typhus-Stämmen (stems). R. Friedberger and C. Moreschi.
- 41 Das doppel-seitige Empyem (bilateral). D. Hellin (Warsaw).
- 42 *Neuere Fortschritte auf dem Gebiete der Wasserreinigung (purification of water). E. Friedemann.

36. **Forensic Test for Origin of Blood Spots.**—Neisser and Sachs describe a simplification of the biologic test for blood which is so delicate that it reveals the human origin of even 1 in 1,000,000 c.c. of blood serum. It is based on Moreschi's announcement of the anticomplement action of prepared serum, which is the result of the interaction of a substance in the prepared serum with another substance in the normal serum of animals of the same species. Even the minutest amounts of the normal serum are sufficient to induce this anticomplement effect. The test was made with 1 c.c. of a 5 per cent. suspension of sheep serum, to which the amboceptor was added in the form of 0.0015 c.c. of serum of a rabbit preliminarily treated with ox blood, the rabbit's serum acting also on sheep's blood. The complement was in the form of 0.05 c.c. of fresh guinea-pig serum. The serum of a rabbit preliminarily treated with human serum was used for the antiserum. The combined action of the amboceptor and complement completely dissolved the blood corpuscles in the sheep's blood. Addition of 0.1 c.c. of serum from a rabbit preliminarily treated with human serum did not check the hemolysis, but no hemolysis occurred when a trace of human serum had been added to the suspension of blood. This arrest of the hemolysis occurs invariably when there is a trace of human serum in the suspension of blood, but hemolysis proceeds undisturbed when prepared serum of other origin is used. This test can be used to supplement the Uhlenhuth biologic test. After noting the precipitation, the fluid is allowed to stand for a time and then the blood plus the amboceptor is added. The presence or absence of hemolysis impresses even a lay observer as the fluid is decidedly red or colorless, according to the hemolysis.

38. **Treatment of Tuberculosis.**—De la Camp reviews the present status of the treatment of tuberculosis, coming to the conclusion that dietetic measures stand in the foreground, none of the serums yet made having won a permanent place in therapeutics, and cinnamic acid not having fulfilled expectations. In hemoptysis, internal administration of 20 gm. of gelatin, kept up for weeks, has proved the best measure in his experience.

42. **Purification of Drinking Water.**—Friedemann describes the various methods of purifying drinking water inogue.

especially the Siemens and Halske plant for ozonizing the water. As the expense of ozonization is not higher than other methods, he thinks that this may be regarded as the best mode of disinfecting drinking water yet at our disposal. In the tests, even as many as 600,000 pathogenic or allied germs to the c.c. were completely destroyed during the ozonizing process.

Centralblatt f. Chirurgie, Leipzig.

Last indexed page 73.

- 43 (XXXII, No. 44.) *Bedeutung der Spinal-Analgesie für die Diagnose und Therapie der Erkrankungen des Anus und Rectum. F. Neugebauer.
- 44 (No. 45.) *Clamp Forceps with Slit in Each Blade to Suture Through.—Queckschlangen mit Nähnähten bei der Verschlussnaht von Magen und Darm. Professor Graser (Erlangen).
- 45 (No. 46.) *Zur Technik der Enterotomie. A. Wolf.
- 46 Zur Technik der Blinddarm-Operationen (on cecum). J. Hahn (Mayence).
- 47 (No. 47.) *Zur Behandlung des Duodenal-Stumpfes bei der Resektions-Methode Billroth II. C. Brunner.
- 48 (No. 48.) Eine typische Erkrankung der Achilles-Sehne (Tendinitis achillis traumatica). A. Schanz.
- 49 (No. 49.) *Bemerkungen zur Anwendung des Jaboulay'schen Anastomosen-Knopfes ohne Naht (button without suture). O. Klauber.
- 50 (No. 50.) *Zur Behandlung des Duodenal-Stumpfes bei der Resektions-Methode Billroth II. Steinthal.
- 51 (No. 51.) Forceps to Open and to Remove Michel Clips.—Hebelklammer zum Öffnen und Ausheben der Michel'schen Wundclampen. R. Jolly.
- 52 Zur subkutanen Verlagerung des Omentum (Talmá operation). K. Elbogen.

43. Importance of Spinal Analgesia for Diagnosis and Treatment of Affections of the Anus and Rectum.—Neugebauer states that in 560 cases in his experience in which anesthesia was induced by lumbar puncture and injection, 79 were affections of the rectum or anus. He noticed that after spinal analgesia the sphincters relaxed to such an extent that the anus and the region above it were opened wide for visual inspection. This paresis or paralysis of the anesthetized parts is of great assistance in operating in this region. Spinal analgesia is thus an important aid in operations on the rectum or anus. In 3 recent instances he observed the spontaneous retrogression under spinal analgesia of incarcerated inguinal and femoral hernias.

44. Clamp Forceps with Slit to Suture Through.—Graser gives an illustration of his clamp forceps. The long slit in each blade allows the parts to be sutured with a straight needle through the slit, while the clamp is holding the stumps or parts compressed. The part below the clamp can be cut away and the suture conveniently taken through the long slit in the blades. The slit also enables the clamp to take a firmer hold on the parts. He uses similar clamp forceps in operating on the appendix and for provisional hemostasis in operating on the mesentery or broad ligament.

45. Technic of Enterotomy.—Wolf brings out the lowest distended loop and smooths its contents along, applying two clamps above and below. Between them he takes a purse-string suture, forming an oval about 1.5 cm. long. In the center of this oval an incision is made, and a long rubber tube is introduced and pushed in for a few cm. toward the mouth. The clamps are then removed, and the contents of the intestine issue through the tube and pass into a vessel at its end. When the intestine has thus been emptied the tube is slowly withdrawn by an assistant, and the suture thread is drawn tighter and tighter over the tube. It is finally tied as the tip of the tube emerges. A few Lambert sutures are taken over the first suture for better security. Not a trace of intestinal contents escapes to soil anything, and the whole procedure can be aseptic. It is also applicable when it is impossible to bring out the loop. The segment of the intestine can be isolated from the rest with curved clamps.

47. Treatment of Stump of Duodenum.—Brunner has had trouble from the stump of duodenum after resection of cancer of the stomach by Billroth's second method. He has found records of similar trouble in the reports from other clinics, and has consequently altered the technic somewhat. This modification completely avoids the danger of subsequent peritonitis from the stump of the duodenum. His modification is merely transferring the closed stump of the duodenum to an extraperitoneal position, that is, to the upper angle of the incision

in the abdominal wall, outside the mobilized parietal peritoneum. In 10 cases in which the operation was concluded in this way the results have confirmed its advantages.

49. The Jaboulay Button.—Klauber relates a misadventure from the use of the Jaboulay button evidently due to defective construction of the individual button. His experience with it has been satisfactory in the few other cases in which he has used it. The button was illustrated in THE JOURNAL, volume xlii, page 1324.

50. Treatment of Stump of Duodenum.—Steinthal avoids trouble from the stump of the duodenum, after resection of the stomach, by tamponing the suture. Only one death occurred in 5 cases in which the tampon was applied, and the fatal outcome in this case was due to extraneous causes. The stump is left in its natural position and not pulled on as by the technic advocated by Brunner in paragraph just above. In case a fistula develops, Steinthal claims that it can be easily treated and cured.

Deutsche medizinische Wochenschrift, Berlin and Leipzig.

- 53 (XXXI, No. 48.) *Vaccination Against Foot and Mouth Diseases.—Die Schutzimpfung gegen die Maul- und Klauenseuche. F. Loeffler.
- 54 Disturbances in Albumin Metabolism During Soloma at High Altitudes.—Fieber Störungen des Eiweissstoffwechsels beim Höhenaufenthalte. A. Loewy.
- 55 Die Pseudo-Tuberkel-Bacillen bei der Diagnose der Tuberkulose. D. Mezinences (Bucharest).
- 56 *Klinische Beobachtungen bei Behandlung mit Neutuberculin (Bacillen-Emulsion) und Mitteilung eines Falles von mit Altstuberulin geheilter doppelseitiger Iris-Tuberculose. M. Elsasser.
- 57 *Inhaltungen zur konservativen und operativen Behandlung der Gelenk-Tuberculose (of joints). C. Garré. (Concluded.)
- 58 Gallensteillitus ohne vorhergehende nachweisbare Störungen in den Gallenwegen (calculus liths without previous disturbances in biliary passages). Wiesinger.
- 59 *Behandlung des chronischen Mittelohr-Katarrhs (of middle ear). V. Urbantschitsch (Vienna). (Concluded.)
- 60 Ein neues Verfahren von Vibration-Massage mittels des Triebseilen Elektro-Magnetes. Lichtenstein (Newfield).
- 61 (No. 49.) *Rehabilitierung der Hand als geburtsbildliches und chirurgisches Werkzeug (the hand as instrument in obstetric and surgical work). P. Ahlfeld.
- 62 Ueber 2 durch Collargol-Injektion geheilte Fälle von Septicämie. A. Wassmuth.
- 63 Ueber Anarobien im Eiter dysenterischer Leber- und Gehirnarabscesse (of abscesses in liver and brain abscesses in Egypt). H. Legrand.
- 64 Zur Kasistik der inkarzierten Zwerchfell-Hernie (of diaphragm). C. Boehm.
- 65 *Progress in Treatment of Ear Affections.—Fortschritte in der Therapie der Ohrenkrankheiten. Bachauer (Haug's clinic, Munich).
- 66 *Zellulose als bequemes, durchsichtiges, Schienenmaterial bei Unterkieferfracturen (splint for fractures of lower jaw). P. Spelsier.

53. Vaccination Against Foot and Mouth Disease.—Loeffler relates the successful results of protective vaccination of domestic animals against foot and mouth disease. An effectual and inexpensive method is by injecting under the skin 5 c.c. of a very virulent cattle serum mixed with .03 c.c. of fresh virulent lymph. After about twenty-five days .0033 c.c. of the lymph is injected again, and about thirteen days later .01 c.c. of lymph, and again after the same interval .04 c.c. lymph. The only inconvenience is the necessity for four injections. The technic is harmless and the immunity conferred is comparatively durable. This technic is used for vaccinating all the animals when the disease is known to be spreading in a district. When the disease has already invaded a herd, more energetic measures are needed, and for this he uses powerful horse serum for injections into swine and sheep, and cattle serum for injections into cattle, a single large dose of from .3 to .5 c.c. per kilo. Repeated doses of from 15 to 20 c.c. intravenously, every eighth day are preferable in case none of the animals in the herd is already affected.

56. New Tuberculin in Pulmonary Tuberculosis.—Elsasser remarks that very few communications have appeared on the subject of new tuberculin, since Koch first described, four years ago, his experiences with it in treatment of 74 patients. Elsasser has used it in the treatment of 76 patients, and his verdict is that it is liable to prove very effectual if administered in time, that is, during the early stages, while the infection is still purely tuberculous and there is no mixed infection. Even if its curative and immunizing action is not

accepted, the physician can administer it calmly for its virtue as a specific remedy against the fever.

57. Treatment of Tuberculosis of the Joints.—Garré reviews the various indications for conservative and operative treatment of tuberculous affections of the different joints. In his own experience, conservative treatment has given the poorest results when the knee joint was involved. He applied it in 100 cases, but in 46, after the total failure of conservative measures, an operation was decided on at last. Although nearly 90 per cent. were mild cases, yet, on the whole, the results were by no means satisfactory. In 185 cases treated surgically, the results were the complete cure of the tuberculous process in 94 per cent., and excellent functional results in 85.5 per cent. In 100 cases of tuberculosis of the foot, 32 of the patients were treated with conservative measures, with good results in only 14; the others all had to be operated on later. He now restricts conservative measures to recent cases, without a fistula, in otherwise healthy young persons; to cases in which one joint only is affected and the tendon sheaths are not involved, or in which there is no destruction of the bone or focus in the bone; and, finally, to patients of advanced years for whom amputation is the only alternative. Resection of the ankle has given excellent results in 80 per cent. of the 60 cases treated by this means. In 13 patients secondary operations were required to complete the cure. His patients were mostly children, and at this age conservative measures are most likely to fail while the results of resection are particularly favorable.

59. Treatment of Otitis Media.—Urbantschitsch concludes his articles with the remark that the general practitioner should pay more attention to these affections. If the ear were examined as systematically as the lungs, heart and other organs, otitis media would be detected in its early stages and prompt treatment would save the patients from the damage liable to follow neglected catarrh of the middle ear. The general health should be regarded in treating a chronic ear affection. Anything wrong in the intestines, uterus or vascular or other systems is liable to have an unfavorable action on the ear. Tonics, treatment of the uric acid diathesis, of obstruction, etc., with general hygiene, may have a favorable influence on the ear affection. He is impressed with the great value of systematic exercises in hearing and the therapeutic application of electricity.

61. The Hand as an Instrument in Surgery and Obstetrics.—Alfred wishes to have the hand restored to its old place in obstetrics and in surgery, and urges that it can be effectually disinfected for the purpose with hot water and alcohol. The main point is that the surgeon or accoucheur should be particular to cleanse his hands at once whenever they become soiled with infectious material. Gloves, he states, detract from the delicacy of touch, and they become cut or torn in fully half of all operations requiring sharp instruments. The fact of their being cut is all the more dangerous if surgeons and accoucheurs rely on the gloves and neglect to disinfect their hands thoroughly before commencing the operation. He thinks that it is entirely practicable to disinfect the hands of all pus-forming germs. Whether or not other germs may lurk on the hand is of comparatively little moment.

65. Recent Progress in Treatment of Ear Affections.—Bachauer refers especially to Laval's method of regional anesthesia for the outer ear. A 1 per cent. solution of cocaine is injected to anesthetize the nerves innervating the part. The needle is inserted about .5 cm. in front of the tragus, to a depth of 1.5 cm., paralleling the meatus. To prevent injuring the temporomaxillary joint, the patient holds his mouth open. Half the fluid is injected at this point and the remainder between the cartilage of the auricle and the bone of the mastoid process, on a level with the meatus, introducing the needle for about 1 cm. The nerves involved are a branch of the auriculotemporal nerve in front of the ear and, behind, the auricular branch of the vagus. He sprays the skin with ethyl chlorid before introducing the needle. The same principle is followed by v. Eikens, but he reaches the

two nerves by introducing the needle in the fissure behind the cartilage of the ear, just below the cartilage forming the floor of the meatus. He reaches the rear nerve from this point and then draws the needle back and works it in again to the front of the ear while the patient opens his mouth wide. He uses a .5 or 1 per cent. solution of cocaine with .6 per cent. salt. Both he and Laval add a little adrenalin to the fluid. This regional anesthesia answers the purpose perfectly for opening furuncles and abscesses or for removal of small tumors, but the anesthesia is restricted to the outer ear. The middle ear is innervated by other nerves, for which v. Eiken proposes a more complicated technic. One of the more recent innovations in treatment is Sondermann's suction treatment with an aspirating apparatus which fits over the entire ear. He applies suction in this way two or three times a day for three minutes at a sitting. It aspirates all the secretions very thoroughly and can be entrusted to the patient. Politzer recommends the use of paraffin to close the defect in the mastoid after an operation. If the antrum has been opened, the paraffin should not be injected until after the opening has been closed by granulations. Excellent results from the use of paraffin in otology have been published by several writers. The latest innovation in treatment is the application of Bier's congestive hyperemia to suppurative ear affections. The congestion was induced by a padded cotton band about 3 cm. wide, hooked around the neck. A number of eyelets allow the constriction to be graduated to the proper point to induce slight swelling and a bluish-red color in the face. The band was applied for twenty-two hours each day, and even after the signs of inflammation had subsided, it was still applied for about eleven hours a day. The treatment is recommended especially for acute cases of otitis media. A free outlet for the secretions must be provided by paracentesis and, if necessary, a small incision should be made in the mastoid. The pain was arrested as soon as the band was applied in the 20 cases reported by Keppler from Bier's clinic. Heine's experience with 19 cases at Lucae's clinic was not so favorable.

66. Celluloid Splint for Fractures of the Jaw.—Speiser gives illustrations of a convenient, simple and transparent splint for fractures of the lower jaw. It is made of celluloid reinforced with a wire around the base of the two teeth on each side of the fracture, and another wire passed over the teeth and splint and under the first wire.

Mitteilungen a. d. Grenzgebieten d. Med. u. Chir., Jena.

Last indexed XLV, page 1612.

- 67 (XV, Nos. 3-4.) "Das Verhalten der Schilddrüse bei Infektionen und Intoxikationen (behavior of thyroid gland). J. Sarbach (Chaux-de-Fonds).
- 68 Ueber experimentelle venöse Stauung in der Hundeschilddrüse (congestion in dogs' thyroids). A. Lüthi (ib.).
- 69 "Einfache krankhafter Zustände auf den Iod- und Phosphorgehalt der normalen Schilddrüse (influence of morbid conditions on thyroid). S. Aeschbacher (ib.).
- 70 "Thyreoiditis simplex und toxische Reaktion der Schilddrüse (of thyroid). F. de Quervain (ib.).
- 71 "Intestinal Disturbances After Operations on Stomach.—Darmstörungen nach Magenop. W. Anschütz (Breslau).
- 72 Beobachtung von einer idiopathischen juvenilen Osteoarthritis deformans des Hüftgelenkes (hip joint). F. Hesse.
- 73 Studien über den Blutlauf in den Hautvenen (circulation in skin veins). G. Lederboser (Strasbourg).
- 74 "Untersuchungen über den funktionellen Wert der sich nach Entkapselung neubildenden Nierenkapsel (new-formed capsule after decapsulation of kidney). J. H. Zaaljer (Lanz) clinic, Amsterdam).
- 75 Meteorismus und Kreislauf (circulation). Experimentaluntersuchung. E. Stadler and C. Hirsch (Leipzig).
- 76 Fall von schwerster Allgemeiner Infektion bei Cholangitis; Operation; Heilung. Adolph.

67. Behavior of the Thyroid in Infections and Intoxications.—This article opens the series of works on the thyroid issuing from de Quervain's clinic. Sarbach announces that the acute infectious diseases, especially scarlet fever, are liable to induce pronounced histologic changes in the thyroid, sparing only the connective tissue, but complete restitution in time is the general rule. The changes are essentially the same for the various acute diseases and for alcoholism. Chronic tuberculosis entails proliferation of the connective tissue. No changes in the thyroid were observed with chronic nephritis, uremia or cachexia from cancer. Of the 67 thyroids examined, 25 were from children under 10 and 52 from adults.

69. Iodin and Phosphorus in the Thyroid.—Among the results of the research reported is the discovery that the thyroid in persons living in or near regions in which goiter is endemic contained more iodine than those of others elsewhere. Less iodine was found in the gland in youth and in old age than in middle life, and less in men than in women, while the thyroids of males contain more phosphorus. Acute infectious diseases, tuberculosis and alcoholism reduce the proportion of iodine in the gland, as also disturbances in the circulation. In the cachexia of cancer the iodine was found rather increased. Therapeutic administration of iodine, especially in the form of potassium iodid, increases the proportion of iodine found in the thyroid.

70. Reaction of the Thyroid to Toxic Influences.—The literature on this subject is reviewed by de Quervain, who emphasizes the distinction that should be made between thyroiditis from the effect of diluted toxins circulating in the blood, and simple thyroiditis from the effect of toxins elaborated in the gland itself. The latter are much more concentrated. His experience has confirmed him more and more in the assumption that there is some connection between the drinking water and goiter. Strumous degeneration of the thyroid gland in dogs is frequent in regions where goiter is endemic.

71. Intestinal Disturbances After Operations on the Stomach.—Anschütz remarks that patients are exposed to more kinds of dangers after operations on the stomach than on most of the abdominal organs. There is unusual liability to peritonitis, to pneumonia and to infarcts, to the vicious circle and to torsion of the implanted loop. At the Breslau clinic 6 cases of peptic ulcer have been observed, and within the last year 2 patients succumbed to sudden and fatal diarrhea at the seventh and tenth day of apparently smooth convalescence. Constipation is the general rule after a laparotomy, but diarrhea may occur without any known cause. In 7 cases the diarrhea was observed in from six to ten days after gastroenterostomy for cancer of the pylorus, proving fatal for 4 of the patients. Diarrhea was scarcely ever observed after gastroenterostomy for benign stenosis of the pylorus, but it almost inevitably occurred when for any reason a loop of intestine lower than from 40 to 50 cm. from the *plica duodenojejunalis* was selected for the anastomosis. In 60 cases of gastroenterostomy above this limit, no intestinal disturbances were observed except once, and they were then slight and transient. On the other hand, he has been able to find in the literature reports of a number of cases in which a loop 40 cm. below the cecal valve or still lower down was used, with resulting severe, sometimes fatal disturbances. In a case in his own experience, after a standard gastroenterostomy, symptoms of volvulus developed and a cancerous nodule was found and removed from the intestine, requiring a second anastomosis 1.2 meter below the *plica*. Diarrhea developed as anticipated, but it was finally conquered. In a third group of cases the stump of the stomach was united directly with the duodenum and diarrhea was observed in a few instances. One patient with ulcer recovered as also 2 with cancer, but a third cancer patient succumbed to the effects of the diarrhea. This patient was a woman of 45, recovering finely from the operation, when diarrhea appeared on the seventh day. At first it was not regarded as serious, and possibly might have been a little neglected. The evacuations became bloody and mucous, and finally became a constant stream; the clinical picture resembled that of severe dysentery or diphtheria of the intestines. An artificial anus was made to relieve the intestine, but too late; the patient died the same evening. The main cause for such mishaps, he thinks, is that the debilitated condition of such patients induces a predisposition to diarrhea. It is remarkable, however, that this predisposition to diarrhea does not manifest itself at first, but only when the patients are well on the road to recovery. He is convinced, for reasons which he enumerates, that the anesthetic has nothing to do with these intestinal disturbances. The main point in treatment is to act promptly and energetically at the first symptoms of diarrhea. When it is once well established, all treatment is powerless. Since this rule has been

adopted in the clinic, no threatening diarrheas have developed. When there is an excess of hydrochloric acid he neutralizes it with an alkali; when it is deficient he supplies the normal amount. He also strives to empty the intestines of harmful contents by powerful purgatives, castor oil, calomel or Carlsbad salts, with astringents and possibly subcutaneous nutrient injections of sugar, salt and fat. The first indication of diarrhea is met by giving 1 gm. (15 grains) bismuth, with an astringent and 10 drops of opium, repeating this dose every one or two hours. If this is not successful, he increases the dose of opium, giving as much as from 80 to 100 drops of the tincture of opium. Some individuals require more than others to put the intestine at rest. If the diarrhea is checked a little the opium can be dropped and the astringent continued; but at every new fluid passage the attendants are instructed to give from 10 to 20 drops of opium. If there is a possibility that a loop of intestine too low down has been used by mistake, a secondary laparotomy should be done and conditions righted, or a wide enteroanastomosis made to enable the contents of the intestines to be mixed with the digestive juices more thoroughly. An artificial anus may prove of service if made in time. It is important also to learn the previous history of these patients before operating on the stomach. If a tendency to diarrhea exists, the patient should be supervised with exceptional care.

74. Functional Value of New Capsule After Decapsulation of Kidney.—Zaaijer has continued his experiment research on the effects of decapsulation of the kidney in rabbits. He found that decapsulation and scarification of the kidney are followed by the formation of a new capsule which ensured better circulation for the organ than is the case with the normal kidney. By the end of from four to six weeks both the arterial and especially the venous anastomoses were more numerous and effectual than in the normal capsule. There is usually more or less adhesion of the capsule observed in patients requiring decapsulation. Cutting these adhesions amounts to about the same as scarification of the organ in the rabbits. He is now engaged in research with decapsulation of the kidney in diseased animals and also in studying the conditions of the circulation in sound and diseased kidneys, from cadavers.

Münchener med. Wochenschrift, Munich.

- 77 (L.H. No. 46.) *Zur Technik der Lungen-Naht (suture). M. Tiegel.
- 78 Ueber die in die Plazenta enthaltenen Fermente. P. Bergell and E. Liepmann.
- 79 Ueber den Bau der *Sprochste pallida*. K. Herxheimer and Löser.
- 80 *Zur kombinierten Skopolamin-Morphin-Chloroform-Narkose. Roth.
- 81 Ueber Mesenterial-Zysten. H. Adler. Id. J. Hahn.

77. Suture of Lung or Other Soft Tissue.—Tiegel has been making a study of the best technic for suturing the lung. His experiments were made in the Sauerbruch under-pressure air chamber, and he shows that the suture in the lung must be solid to avoid after hemorrhage, and also air tight to prevent leaking of air with consequent pneumothorax. He applied air pressure to the lung after suturing it and found that very few sutures were able to fulfill these conditions. He finally devised a technic which answers the purpose perfectly, the suture standing a pressure of 40 mm. This was accomplished by running a skewer, made of magnesium, into the tissue, on each side of the wound, and suturing the lips of the wound together, with fine silk, the running suture embracing the skewers. The best results were obtained when the silk was dipped beforehand in a solution of iron chlorid, which aided in promoting coagulation and thus filling up the stitch holes. The same technic is applicable to the liver, spleen, pancreas, gravid uterus and the heart, and also for inflamed or degenerated tissues in the intestine or stomach, and for closing a gaping wound in the peritoneum. He has found the technic fully as satisfactory when suturing the liver after a wedge-shaped excision. Payr's tests of magnesium have demonstrated its harmlessness for the tissues and its rapid absorption when its task is completed. He uses the magnesium skewers to stick into angiomas, and has reported a number of cures by this means.

80. **Scopolamin-Morphin Anesthesia.**—Roith has collected 3,700 cases in which this form of anesthesia was used, and estimates that the number actually has reached 4,000. He discusses the 18 cases in which death occurred, and states that in some of them the anesthetic could not possibly have been responsible for the death. In others exceptionally large doses were given. He has used it in 230 cases, and has been favorably impressed with its superior advantages. He mentions a number of minor points in the technic, and remarks that the sole disadvantage of the method is that the solutions used must be made fresh every time. The Korff and Kümmel technics are perfectly harmless, he thinks, and any one can be sure of success by following their directions. Mishaps are due to disregard of the results of others' experience. There is no danger in using hyoscin (scopolamin) in small doses, and the small doses are equally as effective as the larger ones. Repeated small doses of from .3 to .6 mg. are preferred by the psychiatrists. He gives .3 mg. of hyoscin plus 1 mg. of morphin an hour and a half before the operation, following this with .4 mg. of hyoscin plus 1 mg. of morphin half an hour before the operation. Early in the morning or the evening before the operation he gives a very small dose of some sedative to very excitable patients. Control tests with atropin-morphin given in 200 cases in the same way, he states, showed the superiority of the scopolamin-morphin technic. He always plugs the ears of the patient with cotton.

Riforma Medica, Naples.

Last indexed page 166.

- 82 (XXI, No. 31). "I disturbi della sensibilità cutanea nel tumore di milza e nelle splenopatie in genere. A. Signorelli.
- 83 "La ricerca del bacillo di Eberth nelle urine e sua importanza per la diagnosi precoce. P. Malone.
- 84 Sulla presenza dello spirocheta Schaudinn-Hoffmann nelle ghiandole inguinali dei sifilitici secondari. A. Rizzo and A. Cipollina.
- 85 "Azione e valore terapeutico della macerazione renale. F. Arrullani.
- 86 (No. 32). Sulla elevazione subfebrile degli acilostomiaci. U. Gabbi.
- 87 Sulla cultura artificiale del bacillo di Hansen fuori dell'organismo umano. A. Ruggieri.
- 88 "La distensione dello stomaco e dell'intestino nella diagnosi delle affezioni dello addome. G. Arnone.
- 89 Sali di potassio e sali di sodio (salts). S. Ditefano.
- 90 Il siero antistafilococcico nella cura della tubercolosi polmonare. De Capoa.

82. The "Spleen Point."—Signorelli has found that the sensibility of the skin is altered in certain places whenever there is inflammation or other morbid process in the spleen. In case of acute tumefaction of the spleen or exacerbation of a chronic tumefaction, a zone of cutaneous hyperalgesia, he says, will be found corresponding to the fifth interspace on the left, near the left nipple. This is what he calls the "spleen point"; it may be a little to one side or above or below the nipple. In addition to this zone in front, there is frequently a corresponding zone at the fifth, sixth, seventh or eighth spinous process, and occasionally another in the side, corresponding to the sixth or seventh interspace on the median axillary line. The zones correspond to Head's sixth metameric segment, and throw light on the embryology and physiology of the spleen and aid in differentiating affections of this organ.

83. **Typhoid Bacilli in Urine.**—Maione found typhoid bacilli in the urine in 40 per cent. of his typhoid patients, but very rarely before the eighth day. In some instances, however, the bacilli were found in the urine three days before the agglutination test was positive. The Drigalski-Conradi technic reveals the presence of the bacilli in forty-eight hours.

85. **Raw Kidneys in Nephritis.**—Arrullani describes the particulars of 10 cases of nephritis treated with a maceration of fresh pigs' kidneys, according to Renault's method. (The technic was described in *THE JOURNAL*, page 340, of volume XLII, 1904.) Six of the patients were cured, 2 much improved, and 2 not benefited. The 2 failures occurred in cases of very serious chronic uræmia. The cases mentioned as being much improved were likewise very severe and chronic cases. The patients cured had the acute forms of nephritis with edema. The rapidity of the cure was astonishing in two instances. There can be no doubt, he thinks, that the maceration has a directly beneficial action on the parenchyma of the kidneys, promoting diuresis and elimination of chlorids and urea, the

effects of which are soon felt in the improved metabolism. It also acts on the blood pressure, reducing it to normal limits. No unpleasant by-effects were noticed in any of the cases. This treatment can be combined with ordinary measures without harm.

88. **Distension of the Stomach and of the Intestine in Diagnosis of Abdominal Affections.**—Arnone concludes this comprehensive article with a three-column summary of the various diagnostic points which he has been studying. He shows in a number of illustrations the changes in the shape, size and position of the stomach or intestines in case of a tumor in them or in any adjacent organ. The changes are characteristic, and have considerable differential value, especially when the effects of insufflation of the stomach or intestine are compared with normal findings.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE EDINBURGH STEREOSCOPIC ATLAS OF ANATOMY. Prepared under the auspices of the Department of Anatomy of the University of Edinburgh, by Professor J. K. Cunningham, M.D. (Edin. et Publ.), D.Sc., LL.D. (Glasg. et St. And.), D.C.L. (Oxon.). Edited by David Waterston, M.A., M.D., F.R.C.S.E., F.R.S.E., Lecturer Senior Demonstrator in the Department of Anatomy, Edinburgh University. In Five sections, 250 stereographs. Section 2.—Thorax. (The complete set with stereoscope, \$50.) Imperial Publishing Co., No. 27 East 22d St., New York.

A MANUAL OF MATERIAL MEDICA AND PHARMACOLOGY, comprising all Organic and Inorganic Drugs which are or have been official in the United States Pharmacopœia, together with Important Allied Substances and Useful Synthetics. Especially Designed for Students of Pharmacy and Medicine, as well as for Druggists, Pharmacists and Physicians. By D. M. R. Culbreth, Ph.G., M.D. Fourth Edition, Enlarged and Revised, with 487 Illustrations. Cloth. Pp. 976. Price, \$4.75. Philadelphia: J. B. Lippincott & Co., 1905.

A MANUAL AND ATLAS OF ORTHOPEDIC SURGERY, including the History, Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis and Treatment of Deformities. By J. K. Young, M.D. Illustrated with over Seven Hundred Photographs and Line Drawings, mostly from original sources. Half morocco. Pp. 942. Price, \$12.00. Philadelphia: P. Blakiston's Son & Co., 1905.

A TEXT-BOOK OF PHARMACOLOGY AND THERAPEUTICS, or the Action of Drugs in Health and Disease. By A. R. Cushny, M.A., M.D. Fourth Edition. Thoroughly Revised. Illustrated with 52 Engravings. Cloth. Pp. 752. Price, \$3.75 net. Philadelphia: Lea Brothers & Co., 1905.

MANAGEMENT OF A NERVE PATIENT. By A. T. Schofield, M.D., Author of "The Unconscious Mind," "The Force of Mind," "Unconscious Therapeutics," etc. Cloth. Pp. 267. Price, \$1.50. Philadelphia: P. Blakiston's Son & Co., 1905.

TRINARY ANALYSIS AND DIAGNOSIS. By Microscopical and Chemical Examination. By L. H. Heitzman, M.D. Second Revised and Enlarged Edition; 131 Illustrations. Cloth. Pp. 319. Price, \$2.50 net. New York: William Wood & Co.

DEPARTMENT OF COMMERCE AND LABOR BUREAU OF STATISTICS, No. 5. Series 1905-06. Monthly Summary of Commerce and Finance of the United States November, 1905. Paper. Washington: Government Printing Office, 1905.

FIFTY-EIGHTH ANNUAL REPORT OF THE TRUSTEES OF THE MASSACHUSETTS SCHOOL FOR THE FEEBLE-MINDED AT WALTHAM, for the Year ending Sept. 30, 1905. Paper. Pp. 46. Boston: Wright & Potter Printing Co., 1905.

A COMPEND OF DISEASES OF THE SKIN. By J. F. Schamberg, A.B., M.D. Fourth Edition, Revised and Enlarged, with 108 Illustrations. Cloth. Pp. 299. Price, \$1.00. Philadelphia: P. Blakiston's Son & Co., 1905.

THIRD ANNUAL REPORT OF THE BOARD OF GOVERNORS OF THE KNOXVILLE GENERAL HOSPITAL, Knoxville, Tenn., Jan. 1, 1906. Paper. Pp. 38. To the Board of Mayor and Aldermen of the City of Knoxville.

ANNUAL REPORT OF THE DEPARTMENT OF PUBLIC HEALTH FOR THE FISCAL YEAR Ending Feb. 28, 1905. Paper. Pp. 29. Colorado Springs, Colo.: Our West Printing and Stationery Co., 1905.

ESOSTOSI SOLITARIA DELL'OMEO DESTRO IN UN ALIENATO. By Dr. Ugo Viviani, medico del Manicomio di Arezzo. Two Illustrations. Pp. 15. Paper. Arezzo: Tip. Ettore Siniati, 1904.

BACTERIOLOGY OF PRATENTITS. By L. S. Dudgeon, M.R.C.P., and P. W. G. Sargent, M.A., M.B., B.C., F.R.C.S. Cloth. Pp. 243. Price, \$2.50 net. Chicago: W. T. Keener & Co., 1905.

TRANSACTIONS OF THE SOUTH ARIZONA STATE MEDICAL ASSOCIATION for the year 1905, held at Deadwood, S. D., July 5-7, 1905. Paper. Pp. 128. Published by the Association, 1905.

ANATOMY IN ABSTRACT. By S. L. McCurdy, A.M., M.D. Flexible Leather. Pp. 275. Price, \$1.00. Pittsburgh, Pa.: Published by the Medical Abstract Publishing Co., 1905.

DEVELOPMENTAL PATHOLOGY. By E. S. Talbot, M. S., D.D.S., LL.D. 265 Illustrations. First Edition. Cloth. Chicago: Published by the Author, 1905.

SURGICAL NURSING and the Principles of Surgery for Nurses. By R. Howard, M.B., M.S., F.R.C.S. Cloth. Pp. 818. Price, 6s. London: E. Arnold, 1905.

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Original Articles

LEPROSY IN THE PHILIPPINES, WITH AN ACCOUNT OF ITS TREATMENT WITH THE X-RAY.*

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As is generally known, leprosy is diffusely scattered throughout the entire Philippine archipelago, not being much more abundant in any one locality than in another. The actual number of cases is variously estimated at from 5,000 to 10,000. Whether the disease is increasing or decreasing at the present time can hardly as yet be even surmised, nevertheless we do know that in the neighborhood of Manila, where for several years an attempt has been made to segregate it in this hospital, we are constantly receiving new or previously unreported cases. The new admissions during the past three years since I have been in charge of the hospital, have been variable as to the apparent stage of the disease, but it is extremely rare to find a case in which the disease is limited to so small a localized region of the body, as to indicate recent local infection. On the other hand, a large proportion of new patients admitted to the hospital give an undoubted history of the disease dating back from one to ten years, from which fact I am sure that in practically all cases the disease could have been diagnosed earlier, had the patients been examined by an experienced physician. It is also quite probable that we are surrounded by, and more or less in constant contact with, numerous cases of leprosy in its early stages of development.

It is practically impossible to draw any reliable conclusions as to the exact duration of the disease in any given case on account of the general ignorance of the masses, with reference to its early recognition and differentiation from numerous other skin diseases so common here, as well as to their lack of fear of the disease and their consequent inclination to conceal its presence in order to avoid segregation or confinement. Also the point of inoculation or the source of infection can rarely, if ever, be determined on account of our inability to locate the cases at an early stage of the disease, or to ascertain the approximate time of infection. These difficulties are increased by the customs of the natives which dispose them to frequent change of residence and association, as well as by the fact that anywhere they happen to go they are liable to find one or more sources of infection in the immediate neighborhood.

While from these remarks it can be seen that the exact method by which this disease spreads is very doubt-

ful, still there have been a few facts noted among our cases which throw some light on the subject.

We find that for several years past there has been only one case where a husband and wife have been known to have the disease, and in this case the disease appeared at the same time in both, indicating a common origin rather than a transfer from one to the other.

Of numerous children born in the Philippines of leprous parents (seven in this hospital, three having both parents leprous, but not married), none have been known to suffer leprosy.

I have been able to locate five cases in which a parent and child have both had the disease, but the development occurred toward the end of the child's adolescence, appearing at about the same time in both parent and child, the child developing the disease first in three cases, and the parent first in two cases, thus indicating common origin and not transmission from parent to child.

We have had five families represented by two children; three families represented by three children; and one family represented by five children. In this latter family there were ten children, the other five with both parents remain free from the disease.

From these facts, I am inclined to believe that the disease is rarely, if ever, transmitted from parent to offspring, and is with difficulty transferred directly from one person to another, but there frequently exists a common source of infection to which the members of the same family may be subjected especially during early childhood.

For the purpose of the following comparative observations I have taken the histories of 239 patients, 238 of whom were in the hospital at the time when these statistics were prepared, December, 1904, while the other was admitted soon afterward and is included on account of the subsequent improvement and cure under x-ray treatment. As can be readily understood, many difficulties were encountered in obtaining accurate histories of these cases, the principal of which being the variety of languages spoken, Spanish, Tagalog, Ilocano, Visayan and Bicol being represented, and the sluggish mental condition of many of the patients due to their station in life and their long, hopeless confinement. In this work, as well as in the microscopic examinations of slides and the use of the x-ray apparatus, I have been efficiently assisted by Dr. Rizal Mercado, the house physician, and by Miss R. Mickle, one of our trained nurses, both of whom kindly volunteered their services.

With each case we carefully inquired into the history of the development of the disease, especially with reference to the time when the first symptoms appeared, the time spent in this hospital and the existence of the disease in relatives. Then an examination was made of the present condition of the body, noting the parts involved, the class or variety of the disease, whether hypertrophic, atrophic or mixed, the amount of disfigure-

* Read before the Manila Medical Society, 1905.

ment estimated in per cent. of disability and the percentage of vitality. Ordinarily, vitality and disability would vary inversely one with the other, but disability is here used to mean the disability caused by the maiming action of this particular disease, while vitality is used in its ordinary general sense.

After this procedure, microscopic slides were made of scrapings from the specific lesions and, in all cases found negative by the first slide, three additional slides were more carefully made and examined. If these slides were not positive, for the purpose of classification, we called the case bacteriologically negative, although in most cases we carried the work further for the purpose of reconfirming the negative examination.

In the classification of the varieties of this disease, I have used the terms hypertrophic and atrophic in place of the more ordinarily used terms tubercular or nodular and neurotic or anesthetic, as I find that these latter terms are liable to much confusion as well as being, in

The mixed variety is simply a combination of the other two, usually one form being apparently of much more recent origin than the other.

Of the 239 cases reported, 97 are hypertrophic, 47 atrophic, 92 mixed and 3 undetermined; one of the latter being probably atrophic and two not leprosy at all, but lupus vulgaris. In the entire number of patients the disease has existed to an extent to be recognized for an average period of 8.11 years, and the average period of their residence in this hospital has been 2.55 years. Seventy-seven of the patients have had the disease for 10 or more years, twelve for 20 or more years, one for 31 years and one for 41 years. Seven patients have been in this hospital for 10 or more years, two for 17 years and one for 18 years. Of the forty-seven atrophic cases, I find that the average time during which the patients have been known to have had the disease has been 12.28 years, while the average time in this hospital has been 4 years.



Fig. 1.—Case 9. C. de los S. This photograph was taken Nov. 9, 1904, and shows well-marked hypertrophic leprosy. She has improved slightly under treatment.



Fig. 2.—Case 8. M. M. This photograph was taken Nov. 7, 1904, and shows hypertrophic leprosy before treatment.

fact, misleading. Under the head of hypertrophic cases, we include cases showing tubercles and nodules or mass and plate-like increase of tissue, while under atrophic we include those cases showing scars and glossing of skin, anesthetic patches, wasting away of the fingers and toes, etc.; in other words, when hypertrophy exists we call the variety "hypertrophic," and when atrophy exists we call it "atrophic."

The hypertrophic forms develop most rapidly and are usually diagnosed earlier; they ulcerate freely and promptly and the lepra bacilli are easily found in great abundance in all cases by simply taking a scraping from any of the hypertrophied parts (Fig. 1). The atrophic forms develop more slowly, rarely, if ever, ulcerate; the bacilli are found with difficulty in scrapings and the patients display the greatest variety of deformities, with frequent loss of toes and fingers.

The average estimated disability or deformity for the entire 239 cases is 53 per cent.; twelve patients show no disability; ninety-six show less than 50 per cent. disability; thirty-seven show 50 per cent. disability and ninety-four show more than 50 per cent. disability.

The average vitality of the entire number is estimated at 68 per cent. There are five patients with 100 per cent. vitality, or practically normal; 158 with more than 50 per cent.; fifty-six with 50 per cent.; and twenty with less than 50 per cent. vitality.

On microscopic examination of scrapings from the leprotic lesions, I found 193 positive for the lepra bacilli by the first slide taken and 46 negative. Subsequently I made three slides from each of these 46 negative cases and found 20 of them positive, there remaining 26 permanently negative for lepra bacilli in scrapings from the skin. I have made numerous subsequent



Fig. 3.—Case 8. M. M. This photograph was taken Sept. 23, 1905, and shows marked reduction of leprotic deposits after x-ray treatment.



Fig. 5.—Case 5. D. P. This photograph was taken Jan. 19, 1905, and shows entire disappearance of leprotic deposit, only scar tissue remaining.



Fig. 4.—Case 5. D. P. This photograph was taken Nov. 7, 1904, and shows patient after disappearance of most of the leprotic deposit.



Fig. 6.—Case 12. A. M. This photograph was taken Jan. 19, 1905; x-ray treatment was begun Jan. 9, 1905, and marked improvement has already been noted. This photograph shows x-ray burn on the cheek.

examinations of many of these negative cases and continue to find them negative, but in a few patients who have since died, I have been able to demonstrate the bacilli in nerves which supply the atrophied regions of the body. It is interesting to note that all of these twenty-six permanently negative cases belong to the atrophic variety, except three. One of these three is classed as doubtful, but I am inclined to class it as atrophic, while the other two are probably lupus.

X-RAY TREATMENT.

The treatment of leprosy with x-rays was begun by me in this hospital in January, 1904.

In treating the patients, I have always selected the part of the body which presented the greatest amount of leprotic deposit and usually exposed it to the rays for ten minutes at a distance of from seven to ten inches. The distance and time of exposure were varied somewhat from time to time, and an effort was made to approach as near to the point of burning the skin as possible without actually doing so. In only two cases was the skin actually burned, and it is interesting to note that they are the first two patients herein reported as cured. During treatment, the patient never suffers and can only notice a slight tickling sensation over the area treated as if a slight wind was blowing on the skin. After two or three successive treatments, a blushing of the skin may or may not be noted, and usually a sensation of itching is experienced by the patient. Should superficial burns occur, treatment for the time should be suspended until tissue repair begins. These burns have shown little tendency to progress and have healed readily, leaving little or no scar.

Below will be found a tabulated list of thirteen patients treated during the past year. All these patients have been natives of the Philippines, and are numbered from 1 to 13 for easy reference:

| No. | Sex. | Age. | Duration of Disease in Years. | Number of Treatments. | Date of Treatment. | Result. |
|-----|------|------|-------------------------------|-----------------------|--|---------------|
| 1 | F. | 15 | 9 | 44 | Jan. 31, 1904. | Not improved. |
| 2 | M. | 8 | 1 | 13 | Jan. 23, 1905. Apr. 25, 1904. Nov. 21, 1904. | Not improved. |
| 3 | M. | 8 | 5 | 11 | Apr. 23, 1904. Nov. 21, 1904. | Improved. |
| 4 | F. | 10 | 3 | 12 | Apr. 22, 1904. Nov. 21, 1904. | Not improved. |
| 5 | M. | 37 | 1 | 14 | Apr. 11, 1904. | Cured. |
| 6 | F. | 12 | 5 | 40 | Sept. 8, 1904. Feb. 1, 1905. | Improved. |
| 7 | F. | 14 | 4 | 37 | Sept. 10, 1904. | Improved. |
| 8 | M. | 13 | 1 | 38 | Sept. 10, 1904. Jan. 23, 1905. | Improved. |
| 9 | F. | 12 | 7 | 14 | Oct. 25, 1904. Jan. 23, 1905. | Improved. |
| 10 | M. | 16 | 5 | 12 | Oct. 27, 1904. Jan. 20, 1905. | Improved. |
| 11 | M. | 36 | 18 | 15 | Oct. 27, 1905. Jan. 17, 1905. | Improved. |
| 12 | M. | 19 | 2 | 52 | Jan. 9, 1905. June 7, 1905. | Cured. |
| 13 | M. | 25 | 2 | 14 | May 8, 1905. June 7, 1905. | Cured. |

As will be seen by an examination of the table, three patients have been cured, seven improved and three not improved.

I am unable entirely to explain why Cases 1, 2 and 4 were not improved by the treatment, still in none of these cases did we have a large mass of leprotic tissue to which we could apply the rays. In Case 1 the patient had a few patches scattered over the face and body, and while the individual patches to which the rays were applied improved slightly, the disease apparently continued to progress in other parts of the body. In Cases 2 and 4 the patients had practically no localized patches,

and the treatment was stopped after a short unsuccessful trial.

In Cases 3, 6, 7, 9 and 10 the patients showed definite improvement with considerable decrease in leprotic deposit, the advance of the disease being apparently for the time checked. In Case 10 the patient showed marked decrease of facial hypertrophy, but at the same time a loss of general health, possibly due to an over dosage of necrotic elements.

Cases 8 and 11 were both unusually far advanced and the patients were badly disfigured; they both improved to a marked degree, not only in parts of the body exposed to the x-rays, but in distantly removed parts of the body which the rays did not reach. In Case 11 the man had enlarged and ulcerated ears, lumps on the face and enlarged, thickened and ulcerating hands, with loss of the ends of several fingers. After application of the rays to his hands, where the tissue showed the greatest hypertrophy, not only did his hands decrease in size and the skin clean off, but the ears became smaller, the ulceration healed and the skin of the face became more normal. In Case 8 the patient showed very unusual nodular developments over the face. With treatment, these nodules gradually disappeared to a very marked extent, as seen in Figure 3. The gradual improvement in this case seems to be progressing, if anything, more rapidly at this time, September, 1905, than at any previous time, although treatment has been suspended since January.

CASE 5.—D. M., male, native of medium size, aged 37, was admitted to hospital July 29, 1904. A clinical diagnosis was made of well-developed hypertrophic leprosy. On the day of admission duplicated slides were made from skin scrapings and were sent to the government laboratories; both were reported positive for lepra bacilli.

Examination.—On admission the patient appeared fairly well nourished. He talks Spanish unusually well and is much above the average in intelligence. He had been employed in the United States Quartermaster's Department as a laborer. The right side of his face showed marked thickening of the skin and superficial tissues, the entire surface being elevated from about one-half to three-quarters of an inch and of a deep purplish-red color. The thickening of tissues was so great that his right eye was practically closed and the right ear enlarged from two and a half to three times its normal size. On the point of the chin there was a nodular enlargement about the size of a horsechestnut. On the forehead, the left cheek, the chin and the neck were numerous small nodules about the size of a split English pea.

Treatment.—On August 11, x-ray treatment was begun, the application being the rays from a bifocal tube at a distance of ten inches for ten minutes.

Treatment as on August 11 was repeated on August 12, 13, 15, 16, 17, 18 and 23. On examination August 23, I found that the tumefaction of the face was markedly reduced and that the right eye could be more widely opened. Superficial ulceration or burns had appeared on the helix of the right ear and on the eminence of the right cheek, from which ran a sero-purulent fluid. Treatment was suspended for the time.

August 31: The superficial burns had somewhat increased in size since last treatment and a tendency to break down was noted in the nodules on the chin and on the side of the neck.

September 4: The burns had dried over and were covered with scabs or crusts. X-ray treatment was resumed.

September 9: There was still a superficial burn about the size of a twenty-five cent piece on the eminence of the right cheek. The ear, chin and neck were better. X-ray treatment was given on September 4, 7 and 8, but had now been discontinued.

September 22: The burns on cheek and chin alone remained and they were nearly well. The face and ear were much reduced in size and all the nodules heretofore noted and also two or three on arms appeared to be gradually disappearing. The large nodule on the chin was much reduced in size.

October 15: The patient had gradually improved. Most of the hypertrophy of face and ear had disappeared, leaving considerable scar tissue. The eye was wide open and the outer canthus was beginning to be drawn outward by scar tissue. The right ear was still somewhat enlarged, especially the lobule. Pus taken from the partly broken down nodule on the chin showed lepra bacilli.

November 7: Photograph taken November 7 (Fig. 4) shows the condition clearly. The right ear, especially its lobule, was still somewhat enlarged. The face showed some inflammatory and much scar tissue. The chin showed some of the small nodules, but the large one had practically disappeared.

December 15: Skin scraped from the cheek showed a few scattered lepra bacilli. Skin and serum taken from healed nodule on chin showed a few scattered, imperfectly stained, apparently beaded and broken-up lepra bacilli. Pus and serum from crust on the right ear showed no lepra bacilli. The patient was rapidly improving so far as his leprotic manifestations are concerned, but his general physical condition was not good and he seemed to be losing in general health.

Jan. 12, 1905: Three days previously a soft, indolent, fluctuating abscess appeared in the right groin just above Poupart's ligament, and, on being opened January 12, discharged about eight ounces of yellow, thick pus. Microscopic examination of this pus showed numerous streptococci, but no lepra bacilli.

January 19: Photograph taken January 19 (Fig. 5) shows plainly the improvement in face and ear.

February 2: Microscopic examination of skin and serum taken from the right cheek showed a very few scattered, beaded and apparently broken-up lepra bacilli, but no clumps. Specimens taken from several other parts of the body were negative.

July 1: The appearance of face and ear were normal so far as leprosy is concerned, but there was considerable white scar tissue scattered over this area. No part of the body showed any signs of existing leprosy. Microscopic examination of skin scrapings from different parts of the body, especially right side of face, nose and chin, were all negative. The general physical condition of patient deteriorated rapidly during the past six months and he was suffering from general anasarca and from anemia; he also had albumin in the urine.

July 11: Patient died. The cause of death was general debility following atrophy of liver, anemia and general anasarca.

Autopsy.—Autopsy held by Dr. Maximilian Herzog, pathologist of the government laboratories, the summary of whose autopsy report, with his full microscopic report, follows:

D. P., male, Filipino, 37 years of age. Autopsy held three hours after death showed: Fatty degeneration of myocardium and kidneys, with interstitial nephritis, advanced atrophic cirrhosis of liver, purulent abscess in the anterior abdominal wall just above Poupart's ligament, anemia and edema of brain, general anasarca and general profound anemia. The serous cavities and soft tissues all contained serous fluid in considerable amounts. There were old pale cicatrices of the right side of the face; the integument in many places was somewhat scaly, but nowhere were there seen formations such as we find in tubercular leprosy.

Microscopic Examination: Tissues were taken for microscopic examination from the following places and organs: Two pieces from the left side of face from the area which appeared somewhat depressed, pale and cicatricial in character, from the ear which formerly had presented a nodular tubercular appearance, from the kidneys, spleen, liver and heart and from several peripheral nerves. These tissues were fixed in Zenker's fluid, subsequently embedded in paraffin, sectioned and stained with hematoxylin-eosin and with Ziehl's carbol-fuchsin and methylene blue.

In the sections from the skin and those from the ear, which latter took in all of the tissues of the concha, the subcutaneous layers showed patches of a subacute, loose, inflammatory infiltration composed of lymphoid cells. In these areas, however, neither epithelioid nor giant cells were found. Likewise lepra bacilli could not be demonstrated. The liver presented

the histologic picture of a well-advanced cirrhosis. The increased interacinous connective tissue was mostly of the fusiform variety with a few small, round lymphoid cells here and there. Lepra bacilli were not demonstrated in the hepatic sections. An examination of the renal, splenic, cardiac and nerve sections likewise failed to show lepra bacilli.

In other words, neither the histologic nor the bacteriologic examination in this case furnished any evidence at all that the patient at the time of his death was suffering from leprosy, either cutaneous or internal. (Signed) Herzog.

CASE 12.—A. M., male, Filipino, aged 19, was admitted to the hospital Dec. 12, 1904. A clinical diagnosis of hypertrophic leprosy was made. The duration of the disease was said to be about two years.

Examination.—On admission the patient appeared well nourished and in good general health. He had numerous dark, reddish, elevated leprotic patches on the face, arms, legs, and more especially on the back. The individual patches appeared congested and puffed out and seemed to be about one-eighth of an inch higher than the surrounding skin. The fingers of both hands were drawn to a half-shut position, and there was slight contraction of the muscles of the legs so that his walking was impaired. On December 14, microscopic examination of skin scrapings from cheek showed lepra bacilli present.

Course of Disease.—On Jan. 9, 1905, x-ray treatment was begun; applications were made to the lesions on the right side of the face at a distance of eight inches for ten minutes.

The x-ray was applied on January 9, 10, 11 and 12. On January 12 a small blister was noted on the cheek about the center of the point of exposure.

January 19: A photograph was taken (Fig. 6); a blister on the cheek had gradually enlarged to the size of thumb nail and then scabbed over. X-ray treatment had been transferred to a larger blotch on the back which is oval in shape, about three and a half inches by two and a half inches in size, abruptly elevated one-eighth of an inch above surrounding parts and deep red in color. A portion of the spot treated on the face showed some fading of color and reduction of elevation. One spot on forehead not treated directly has been reduced from a very perceptible elevation.

January 31: This patient had been treated seven times up to date, viz.: January 9, 10, 11, 12, 19, 20, 21 and 23, and showed marked reduction of the cutaneous manifestations of leprosy, not only at the points treated, but to just as great an extent on parts of the body most distant from the points of application.

July 1: There had been a wonderful improvement in all of the leprotic manifestations of this patient during the past five months, during which time he had had seventeen applications of the x-ray, making a total of twenty-four applications. All the elevated, dark-colored spots on the face and body had disappeared and were replaced by slightly depressed, light-colored, scar-tissue-like spots, which appeared slightly striated and drawn as if by newly formed connective tissue.

The deformity of the fingers had disappeared from all except the little fingers and had markedly decreased in them. The defect of the muscles of legs had entirely disappeared and the patient walked naturally.

July 21: Three microscopic examinations were made, one from cheek and two from back; all were found negative.

July 25: Three microscopic examinations were made; one from the face, one from a scraping of the mucous membrane of the nose and one from the back; all were found negative.

July 27: Microscopic examinations were made of tissue from arms and cheek; all were negative.

August 3: Three microscopic examinations were made; all were negative. The patient was considered cured.

August 8: Four microscopic slides were made by Dr. M. Herzog and examined at the government laboratories; all were found negative.

August 16: Three slides made on this date and three on August 14 were all found negative.

September 30: The patient remained apparently well, and frequent microscopic slides made recently all proved negative for lepra bacilli (Fig. 7).

CASE 13.—B. M., male, Filipino, aged 25, was admitted to

hospital Feb. 21, 1905. Duration of the disease was about two years. The clinical diagnosis was atrophic and hypertrophic leprosy.

Examination.—On admission the patient appeared to be in fairly good general health and a little above the average in intelligence. He had a slightly elevated, dark leprotic patch on the upper lip, covering in the region of the mustache and extending slightly beyond, a patch the size of a silver twenty-five cent piece about the center of the left cheek, and one the same size on the anterior surface of right elbow. The posterior surface of the right elbow showed some anesthesia and the skin was glossy. There was beginning atrophy of the right little finger nail, and this finger was contracted to an angle of about thirty degrees, the next finger was bent to an angle of fifteen degrees and this entire area showed slight anesthesia. A microscopic examination of skin scrapings from the patch on upper lip showed lepra bacilli.

Course of the Disease.—On May 8, 1905, x-ray treatment was begun on the upper lip.

July 1: X-ray treatment had been given fourteen times: May 8, 9, 12, 13, 17, 19, 22, 24, 26, 29, 31, and on June 2, 5

doubtful acid-fast objects which appeared to be broken-up and degenerated lepra bacilli. Slides taken on August 11 and 16 have all been negative.

GENERAL REMARKS.

As may be seen from the above, there is absolutely no doubt that at least one patient (Case 5) with genuine leprosy has been cured by the application of x-rays. This case I have reported in considerable detail with every practicable form of confirmatory evidence in order to establish the fact as a basis for future work along this line. As may be noted, this case was clinically diagnosed not only by myself, but by numerous other physicians, the diagnosis was twice confirmed, by microscopic examinations made at the government laboratories, and on three successive occasions confirmed by myself microscopically. The treatment and gradual improvement was watched

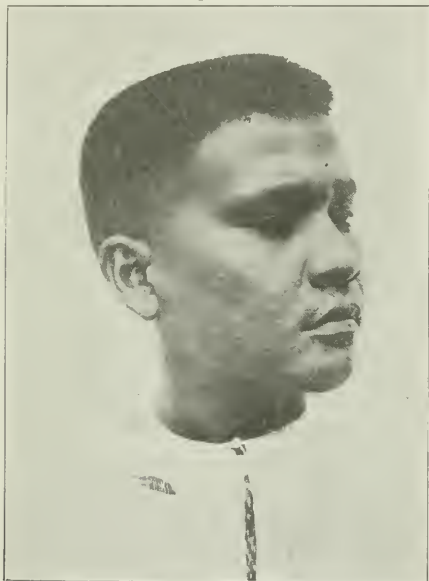


Fig. 7.—Case 12. A. M. This photograph was taken Sept. 23, 1905, and shows scar tissue where leprotic deposit formerly existed and entire disappearance of lepra bacilli.

and 9. The patient appeared practically well on July 1, only a slight discoloration remaining on the upper lip. Lepra bacilli could not be found there.

August 1: It was impossible definitely to outline the patch which formerly existed on the upper lip; not only had the infiltration entirely disappeared, but the discoloration practically all had been absorbed. It was difficult to locate the spot that formerly existed on the cheek, and the other manifestations had likewise decreased (Fig. 8).

On several occasions I have been unable to find lepra bacilli, and on account of the entire disappearance of deposits I have included this patient among those cured, although I am continuing treatment and am not satisfied of the permanency of the cure for two reasons: First, because the disappearance of symptoms has been too recent, and second, because in one of a number of slides taken August 3, from this patient I found several



Fig. 8.—Case 13. B. M. This photograph was taken Sept. 14, 1905, and shows absence of leprotic patch over upper lip and left cheek and disappearance of lepra bacilli after x-ray treatment. No photograph was taken before treatment.

by quite a number of physicians in Manila. Then we have the cure represented in a photograph and also confirmed by myself several times microscopically and finally confirmed both macroscopically and microscopically at the autopsy by the government laboratories. The only part of the record with which I am not satisfied is the photographic, as I should like to have had a photograph showing his condition on admission. The other two patients reported as cured are now in apparent good physical condition, and I hope that their future history may demonstrate the permanency of the cure.

HOW DOES THE X-RAY TREATMENT OPERATE?

I am inclined to believe that when a local lesion of leprosy is treated with x-ray, the organisms there localized are killed and their bodies absorbed by the system

thereby producing an immunity against the living organisms. This as may be seen would be practically analogous with the immunization of individuals against bubonic plague by injecting into them killed cultures of plague organisms. In our case we simply grow the culture of lepra bacilli in the human body as a culture medium and then kill them by the use of the x-rays.

In support of this theory, I cite the following facts:

First. The treatment of one leprous spot on a patient produces improvement in spots at a distance from the one actually treated.

Second. The cure in the distant spots seems to progress parallel to and to be just as complete as in the one treated.

Third. The best results seem to be obtained only when treatment is pushed to the point of killing or beginning to kill the tissues, which would also probably be to the point of killing the organisms.



Fig. 9.—Case 10. P. P. This photograph was taken Nov. 7, 1904, and shows a case of well-developed hypertrophic leprosy.



Fig. 10.—Case 10. P. P. This photograph was taken Sept. 15, 1905, and shows reduction of leprotic deposit with loss of physical health after x-ray treatment.

Fourth. Cases in which there are massive localized leprous deposits, as in Case 5, are most rapidly improved. As in these cases, we have an abundant culture on which to operate and thereby produce immunity more rapidly.

Fifth. In diffuse general involvement of slight degree or atrophic character where there are only a few scattered organisms we have had little success.

Sixth. In two well-advanced cases in which the amount of new leprotic tissue was excessively great, the improvement was marked and rapid, but followed by loss of general health and rapid physical decline (Figs 9 and 10). This may be an over dosage, so to speak.

LIMITATIONS AND DIFFICULTIES ENCOUNTERED IN THE USE OF THE X-RAY MACHINE.

Being so far away from the source of supplies, we have had much trouble in keeping a satisfactory supply of tubes and in having repairs made to our x-ray machine.

I have not as yet been able to find any one in or near Manila who really understands all the parts of an x-ray machine so that defects could be located and repaired without delay. The repair work has fallen mostly on myself, and while I am able to take the machine apart and frequently successfully to repair it, still it is often a process of try and see and often try again. The tubes frequently burn out or wear out, their internal resistance becoming too high and not infrequently the sparking power of the machine falls from ten inches to even three or four inches, thus rendering it useless. One time the batteries are at fault, next and most frequently the interrupter is at fault, then the Leyden apparatus is blamed, and finally the internal resistance of the tubes becomes too great. So I must admit that to use an x-ray machine for from twenty minutes to one hour a day over a period of several months and to get active effective results from it is not an easy matter.

In conclusion, I wish to express my gratitude to Major E. C. Carter, U. S. Army, our former Commissioner of Public Health, for the interest which he took in procuring the necessary apparatus and for the encouragement which he gave me during the progress of this work.

Tuberculosis.—Ch. Sangmann, in the reports of the sanatorium of Veleffjord for 1904 (*Archives Générales de Méd.*), declares that Flügge's theory that tuberculosis is disseminated by coughing is not supported by his observations. Out of 132 physicians who have served in the sanatorium from 1846 to 1882, all before the recognition of the infectious nature of consumption, only nine ever suffered from tuberculosis. From further data collected by Sangmann, including the figures from 69 sanatoria with three or four physicians and 66 physicians connected with laryngologic clinics, he has not been able to find a single case of infection acquired by a physician in the exercise of his profession.

MOSQUITO WORK IN RELATION TO YELLOW FEVER ON THE ISTHMUS OF PANAMA.*

W. C. GORGAS, M.D.

Colonel and Assistant Surgeon-General of the United States Army and Chief Sanitary Officer, Canal Zone.

ANCON, CANAL ZONE.

I shall confine myself more particularly to the question of yellow fever and malarial fever. While we have to deal with all tropical diseases on the Isthmus and to establish a health department such as any community of the same size in temperate zones would be obliged to have, these two diseases, yellow fever and malaria, were the great ones that had caused the principal mortality in the two great works before undertaken down there, namely, the building of the railroad and the attempted construction of the canal by the French. The conditions were much the same as had confronted us in Havana, with the exception that in Cuba we had for two months in the year cool weather during which mosquitoes bred scarcely at all; in Panama there is no difference of season except that between the wet and dry season, and mosquitoes breed as readily in January as in July. Another difference is that at Panama we have a country district of 50 miles in extent to guard against malaria troubles; in Havana we merely had the suburbs of the city to attend to in this respect.

During the French occupation the heavy mortality among their European employés had been a potent factor in the failure of the canal work. It is difficult for us to get statistics that represent exactly the losses under the French. Their work was done under the contract system, the canal line having been divided up into seventeen divisions and let to seventeen different contractors. These contractors were charged a dollar a day for every sick man to be taken care of in the hospitals of the French company. The tendency would be, therefore, when a man became sick for his employer to discharge him so that he would not have to bear the expense of his care. The French company were building a canal through the Columbian territory, just as the Pennsylvania Railroad built its track through Pennsylvania; they had no police control whatever of the territory along the canal. They had no means of telling how many of these employés of the contractors died along the line. All that they could know was that so many reported for work each day; what became of the others they had no means of telling. At their large hospital, Ancon, they kept very accurate statistics, and the number of deaths that occurred there can be safely quoted as entirely correct, but it leaves a very great limit of uncertainty as to what portion were treated in hospital and what proportion died along the line. The English consul, who was down there during the period of construction, is inclined to think that more deaths of employés occurred out of the hospital than in it, and he had very good opportunities for judging. Nine-tenths of the laborers were Jamaica negroes, English subjects, and looked to the English consul for care and protection. The consul tells me that he personally knows of a great many being found dead along the roadside while endeavoring to find their way to him in the City of Panama, and some even dying in his office. On the other hand, the old French superintendent of hospital, Dr. La Croisade, who is still with us, thinks that the hospital statistics represent most of the deaths.

It seems to me, both from what I can find out as common opinion on the Isthmus, and what would seem to me to be human nature under the circumstances, that it is a fair conclusion that the French statistics represent not more than half the mortality that actually occurred. And in quoting these statistics I will ask that this be borne in mind.

The United States Government took over the canal property in May, 1904, but for various reasons there was considerable delay in getting sanitary work fully started, and the authority for doing sanitary work in the towns of Colon and Panama was not granted till toward the latter part of February, 1905. We then built up much the same organization here that we had developed in Havana. All cases of yellow fever were required to be reported to the American health authorities, and in addition to this, all cases of fever of any kind occurring in an American were also required to be reported. It was a considerable advantage to us in Panama that the equipment of our hospital allowed us to give very much better nursing, care and medical attention to all patients than could be obtained elsewhere on the Isthmus. For this reason, Americans generally reported to the hospital when they had fever of any kind, and we usually got cases of yellow fever within the first day or two of the disease. This resulted favorably to the patient as well as to the sanitary authorities; while the general mortality was about 25 per cent. of all cases, the mortality of the Americans treated in our hospitals was not more than 10 per cent.

As soon as we took possession of the hospital, we had two wards thoroughly screened and equipped for keeping out mosquitoes, just as had been our wards in Havana. The suspected patient, when brought up, was placed in one of these wards. It is interesting to see what entire confidence all of our people soon acquired in the mosquito theory of the transmission of this disease. Ancon Hospital is beautifully situated on the side of the Ancon Mountain overlooking the City of Panama and the Pacific Ocean. It is pleasantly laid out in graded roads and paths beautified with tropical shrubbery of all kinds, and embowered in a grove of rubber trees and royal palms. Twenty years ago, under the French, it soon became infested with yellow fever, and every poor Frenchman who came in from whatever cause contracted yellow fever, and more than half of those who contracted this disease died. I was informed through the old superintendent who was in charge at the time, that in one day they lost from yellow fever three of their medical staff and in the same month nine of the same body. Of the 36 sisters whom they brought over as female nurses, 24 died of yellow fever. One of the chiefs of our supply department who came over in the early French days told me that he was one of 18 young French engineers who came over in one vessel; that in a month after their arrival all had died but himself. I am merely mentioning these details to show how different the circumstances are at present.

For nearly two years now we have constantly had yellow fever in these wards; the nurses and physicians are all non-immunes, yet not a single case of yellow fever has been contracted in this way. The nurses never seemed to consider that they were running any risk in being with yellow fever cases night and day in these screened wards, and the wives and families of the officers connected with the hospital lived about the grounds in all directions with the knowledge that yellow fever is constantly being brought into the grounds and treated in the buildings contiguous to them. I do not say this at all in criticism of the French. Under the same circum-

* Address delivered before the American Society of Tropical Medicine, Dec. 8, 1905.

stances twenty-four years ago I doubt if we could have done any better, but the knowledge acquired by Reed's board and Finley's persistent propaganda, have enabled us absolutely to exclude all probability of any contraction of the disease in our hospital. An American sick from any cause at Panama has no fear whatever of being treated in the bed next to that in which his companion is being treated for yellow fever. Dr. Carter and I live in the old ward used by the French for their officers. In this building, I suppose it is safe to say, more men have died from yellow fever than in any other building of the same bed capacity at present standing. We have our wives and children with us. Ten years ago I would have thought this the height of recklessness, but to-day, by taking precautions which are now recognized in yellow-fever work, we all look on ourselves almost as safe as we would be here in Philadelphia. In the yellow-fever wards the additional precaution is taken of putting each new patient in a wire cage just large enough to cover his bed. Here he is kept until the infectious period of the disease has been passed. Of course, in so important a matter as treating yellow fever in a general hospital, no possible chance of the spread of infection can be taken, so that in addition to every possible measure for keeping mosquitoes out of the ward and away from the yellow-fever patients, we also fumigate these wards every two weeks, so that if a mosquito should get in and bite a patient she would not have time to become herself infected. You will recollect that a period of time of from twelve to fifteen days has to elapse from the time that the female stegomyia bites the yellow-fever patient till she herself becomes infected and is able to convey the disease; therefore, if we fumigate every two weeks we would catch all mosquitoes before they had time to do harm.

The case having been reported in the city and the patient having been removed in a screened ambulance to the hospital, orders would be given from the central health office to the proper fumigating brigade to fumigate this house and all the contiguous houses, with the intention of killing the mosquitoes who gave the disease and also those that had bitten the yellow-fever patient, and if left alone would become dangerous in a couple of weeks. The stegomyia is a very domestic mosquito and generally does not leave the house where she is born and bred and does not stir much from the room where she has lived; probably the fumigation of the house itself would catch all infected mosquitoes, but as an additional precaution the contiguous houses were taken, so that if by accident an infected mosquito had drifted from her original locality, she would be caught. The fumigating squads were composed of an experienced foreman and twenty men. They carefully pasted the house just as one would if one were going to disinfect with formalin. The fumigating material generally used was sulphur, sulphur being decidedly the best mosquitoicide we have, but in many buildings, such as stores and the better class of residences, there are many articles that are seriously injured by sulphur. In such cases we see Persian insect powder, pyrethrum; but in the use of pyrethrum care has to be taken that the mosquitoes are swept up and destroyed immediately after the fumigation. If this precaution is not taken a few may revive and again become dangerous. The patient is not forced to go to the hospital if he does not so desire. If he elects to be treated at home, the central office is so informed and the carpenter squad, who have screens on hand prepared for this purpose, are ordered down and screen the patient in so that he is protected from mosquitoes and those that

are in the room can not get out. Only one exit is left the room, a guard is placed who keeps the key of the door and only allows those in and out who are authorized by the physician. The fumigation in the rest of the house is then finished and the screened room is fumigated when the case has terminated.

As I have just stated, the stegomyia is a very domestic mosquito. She is very cleanly in her habits and breeds principally in clean rain water. In Panama the population have depended principally on rain water for domestic purposes, so that every house had cisterns, water barrels and such receptacles for catching and storing rain water. These we had to cover so that mosquitoes could not have access to them; for this purpose the city was divided up into small districts with an inspector in charge of each district. This inspector is required to get around his district at least twice a week, and make a report on each building with regard to its condition as to mosquito breeding. All the cisterns and water containers in Panama have now been covered and in the water barrels spigots so placed that the covers do not have to be taken off when water is drawn. About the first of March, when the first inspections were made, in the neighborhood of 4,000 breeding places were reported. On the last of October, when the last inspection was reported just before I left Panama, less than 400 receptacles containing larvæ were recorded. This, I think, will give you a fair idea of the decrease in mosquitoes through the City of Panama.

In the City of Panama we found by count that 90 per cent. of the mosquitoes were stegomyia. This is another point in which we greatly differed from Havana. In Havana we found by count that only about 5 per cent. of the mosquitoes were stegomyia. This about covers the ground of the methods adopted for controlling yellow fever. Of course, you can see how very important it is for us to get hold of every case of yellow fever as it occurs; particularly is this the case at present, when it has about disappeared. The governor has offered a reward of \$100 for any case of yellow fever reported to the authorities. Between Panama and Colon there are some twenty villages running from 500 inhabitants up to 3,000; yellow fever in the last year has occurred at several of these villages. A queer thing about yellow fever is the fact that the natives in a locality where it frequently occurs are entirely immune, and not liable to contract a disease, so that in these small towns it is only the American employé who can have yellow fever. They usually live in frame buildings, well separated from the surrounding buildings, and it is a very simple thing to fumigate such buildings at once when a case occurs, and to get rid of the disease. We have not had a single instance of failure in disinfection in any of these small towns.

The results of this work have been the apparent elimination of yellow fever. In June, on the zone, we had 67 cases, in July 40 odd cases, in August about 27 cases, in September about 7 cases, in October 3 cases, and none in November and none so far in December. In the town of Colon our last case occurred July 23. Of course, it would be too early to say that yellow fever had been entirely eradicated from the Isthmus. This can not be affirmed with any certainty until the full life of a female stegomyia mosquito has been passed since the last case. In Havana, at Las Animas, we had a female stegomyia mosquito live in captivity for 150 days. So I think we ought to let at least two months pass without a case before we can say with any certainty that yellow fever has been eliminated. The same measures for the control

of yellow fever and the extermination of the stegomyia mosquito were taken at Colon and at the various places along the line of the canal. While yellow fever has a great moral effect on the force, and was more important from this point of view to us than any other disease, malaria was the disease that had always caused the greatest loss from disability, that is, in a large force of men more days were lost from work on account of malaria than probably from all other disease put together.

My paper has already extended to such lengths that I can not go into a detailed description of the measures taken against malaria. They were the same as those outlined at Havana, and that are now so generally in use in the United States, principally superficial ditching. The results have been as satisfactory as they were in Cuba. In October we had a force of 22,000 men on our pay roll; of this number 21 per thousand were sick daily. This is an exceptionally small sick rate, very much less than is the average for our army in the Philippines. I think it safe to say that we are now digging the canal with as little trouble from sickness as would be the case if a similar number of men were engaged in a similar project between Philadelphia and Baltimore, and I see no reason why this rate should not be continued or even improved on. Water supplies are being put in, sewage systems constructed, houses repaired and built, food supplies and cooking arrangements constantly improved.

MEDICAL FORGERIES.

S. D. VAN METER, M.D.
DENVER.

It is fortunate for society that most of us are not familiar with the many disheartening pages of criminology, because we experience sufficient disappointments early in life to shake the most optimistic faith in

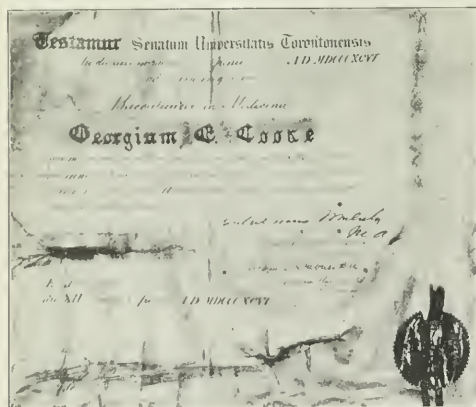


Fig. 1.—Altered diploma of George A. Elliott. Identification is unquestionable, as it bears the Colorado Registration Board's inspection mark on its reverse side. This document was hanging in Ryetzel's office when arrested in Chicago by the federal authorities.

human nature; but there are certain phases of moral perversion of which but little is known to the expert criminologist, much less to the general masses. Untrodden ground is always interesting, and especially so if publicity of the unknown discovered there can benefit mankind.

The study of the many medical forgeries and frauds that are perpetrated on the unsuspecting public throughout the world, but more especially in this country, where our laws regulating the practice of medicine are so ineffective, offers a field for investigation replete with examples of moral turpitude comparatively unknown to the medical profession and of which the general public has no conception. If such were not true public opinion relative to the suppression of charlatany would not be what it is to-day. When a traveler is relieved of his purse by the highwayman the people are up in arms and ready to mete out the death punishment without aid of court or jury. How different is the situation when those entrusted with the administration of our medical laws try to punish these robbers of the credulous sick!

The public is prone to assume, without investigation, that the medical boards are prompted by professional spite and jealousy in such prosecutions; and without the support of public sentiment the best law is seldom operative. It seems incredible that any one could be so

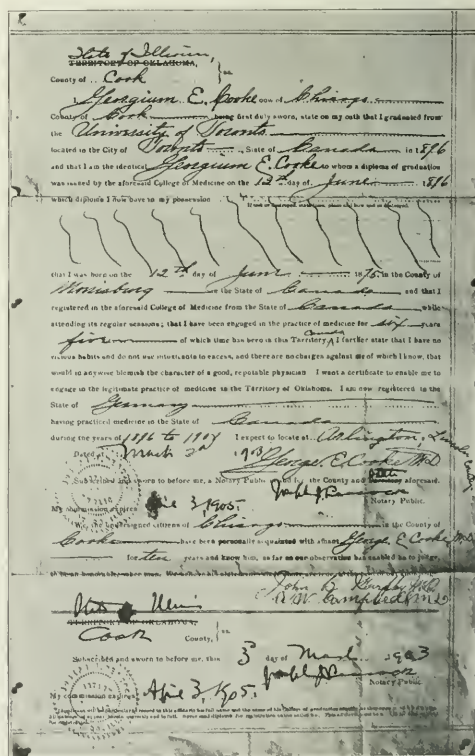


Fig. 2.—Forged application affidavit used by Ryetzel under the alias of Cooke to secure a license in Oklahoma. The signature of John B. Murphy is in the handwriting of Marietta Inman. Ryetzel's last wife.

thoughtless in the exercise of Nature's first law, self-preservation, not to use every effort possible to prevent the criminally inclined from entering a field where, when legally installed, he has the opportunity to deceive and prey on the ignorant and educated alike with but little fear of detection.

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I hereby voluntarily of my, Dec 11, 1903
own free will and accord cancel this
and waive all rights & privileges granted
thereunder the same having been
wrongfully & fraudulently obtained
by me
Mary Elta Inman.

M. Inman
J. Van Meter
C. W. Inman

Fig. 3.—Reproduction from the records of the Colorado Board of Medical Examiners, book B, page 222 showing the cancellation of the forged registration No. 3,865, of Mary Elta Inman. Note that the handwriting is the same as the forged signature of Dr. John B. Murphy in Ryetzel's Oklahoma application.



Fig. 8.—A. Edward Ryetzel as Dr. George A. Elliott when arrested for the murder of Sarah Vance, Oct. 29, 1902.

Geo. A. Elliott

Fig. 4.—Signature of the real Dr. George A. Elliott, of Leamington, Ontario.

Geo. Elliott M.D.

George E. Cooke M.D.

Fig. 5.—Ryetzel's signatures under the aliases of Elliott and Cooke. Note how well he has succeeded in copying the genuine signature of Dr. George Elliott.

A. Edward Ryetzel M.D., F.R.C.S.

Fig. 6.—Ryetzel's signature, showing his fondness for using unearned professional titles.



Fig. 7.—A. Edward Ryetzel as Charles Fox, convict No. 2865, Illinois State Reformatory, Aug. 4, 1897.

I have long entertained the opinion that if people had the faintest idea of the frauds being perpetrated by this class of criminals the existing public sentiment in relation to the enforcement of laws regulating the practice of medicine would be entirely changed. To this end a brief epitome of the following cases selected from those coming under my observation will, it is hoped, serve to illustrate the degeneracy of medical forgers, aid in bringing some of them to justice, and perhaps save a few unsuspecting mortals from their merciless clutches.

THE RYETZEL CASE.

In the spring of 1903 a man claiming to be George A. Elliott, M.D., University of Toronto, 1896, presented to the Colorado Medical Board for registration a genuine diploma of that school, name and date. The diploma was not questioned as to genuineness, and the board, after requiring the customary affidavit and payment of

fee, issued a temporary license. The authentication investigation of the applicant's credentials, while not conclusive, led us to believe that he was the person to whom the

diploma had been originally issued, and at the following meeting of the board he was granted a permanent license. He immediately opened an establishment in Denver which purported to be a private surgical hospital for women. The advertisements in the daily papers, however, at once revealed its true character. The Colorado medical statute had no provision for the revocation of a license except on the ground of the conviction of the licensee of conduct of a criminal nature, so that our board was powerless to revoke his license. We still supposed he was a man of ability, but one who had fallen from ethical practice.

In a short time he made application to join the Colorado State Eclectic Medical Society, and the committee on admission inquired at the office of the Colorado State Medical Board as to his credentials, graduation, etc. The fact that the University of Toronto was not an eclectic school immediately suggested that this man could not be the original Dr. Elliott. After a prolonged

search the real Dr. Elliott was located in Leamington, Ontario. Before we could get out papers for the arrest of his impersonator the latter was jailed on the charge of criminal operation on the person of a Miss Sarah Vance, the unskillful technic of which had caused her death. In his attempt to cover up this deed he frightened the girl's fiancé into suicide and tried to secure interment of the body by signing the burial certificate as one of death resulting from hemorrhage of the stomach due to gastric ulcer. He was allowed bail, which he promptly "jumped," and had it not been for the fact that the United States postal authorities had a case against him for sending immoral literature through the mails it is very probable he never would have been compelled to stand trial for this fiendish murder, which, according to one of his accomplices, was one of many.

Investigation of this impostor's record revealed that his right name was Albert Edward Rytzel, originally from Chicago; that he had served a sentence for larceny in the Illinois State Reformatory (Pontiac) as Charles Fox (No. 2865), from which institution he was paroled June 11, 1898, to D. K. Carter of Chicago. He reported once after being paroled, then ran away with \$40 and assumed the alias of Dr. Bennett.

Under this alias his record is not very complete. In 1900 he appeared in Kansas City, Kas., as Dr. George A. Elliott, where he conducted a place similar to his Denver institution. While in Kansas City a Swiss midwife, Adele Cornely-Cachoud, was supposed to be his wife. She came with him to Colorado, but his affections were soon transferred to one Mary Etta Inman. To get rid of the Cornely woman he induced her to send some immoral literature through the mails. As soon as she was arrested he arranged for her bond and then persuaded her to return to Switzerland. He was not shrewd enough in this scheme, as the federal authorities arrested him as her accessory.

After forfeiting bail in the Vance case he discovered that George E. Cooke, who was graduated from the University of Toronto in 1896, had qualified and located in Chicago, and later, like George A. Elliott, had returned to Canada. Rytzel then erased the name of Elliott from the University of Toronto diploma in his possession and substituted that of Cooke, assumed his fourth known alias, and commenced practicing in Chicago under the name of George E. Cooke, who the records in Springfield showed had been duly licensed. The postal authorities were too keen, however, and he was soon caught and turned over to the criminal court in Denver to stand trial for the criminal operation and murder in the Sarah Vance case. He was tried and convicted on the first charge, fined \$1,000 and sentenced to the penitentiary for three years at hard labor. When he has served this sentence he will have to stand trial on several other charges, and it is to be hoped that he will be kept for many years where he can not endanger the lives of the unwary.

As soon as the Cornely woman returned to Switzerland he married Mary Etta Inman, although Adele Cornely was at least his common-law wife. He caused to be published in *THE JOURNAL of the American Medical Association* of July 12, 1902, an announcement of his marriage to "Viola A. C. Cornely, both of Denver," notwithstanding that at the time she was on her way to Switzerland, and further that the records in Denver show that he was married to Miss Inman on July 18, 1902. It has been ascertained that his marriage to Adele Cornely was a mock ceremony and that he had also been married in Chicago to a Mary Kaurin in February, 1902.

He induced Miss Inman to make false representations to the Colorado License Board and to secure thereon a fraudulent certificate (No. 3865), which she was compelled to cancel, as is shown in the reproduction of such cancellation. While in Chicago under the alias of Cooke he made application to the Oklahoma State Medical Board, and had the undaunted nerve to use the name of so prominent a surgeon as John B. Murphy as one of his sponsors. It does not require the aid of an expert to see that the signature purporting to be Dr. Murphy's is in the same handwriting as the cancellation of Mary Etta Inman's registration.

The exceptionally good imitation of George A. Elliott's signature Rytzel succeeded in making is conclusive that he had in some manner secured a sample of the latter's handwriting as a copy. How he obtained the Elliott diploma is as yet unsolved, but if the story of Mary Etta Inman is to be believed, certain individuals holding positions of honor in their respective communities should feel a sharp prick of conscience when they read this article.

Rytzel's demeanor as a criminal before the bar of justice is one of coolness personified. Thief, forger, murderer and bigamist, fiend incarnate as he is, he is different from the ordinary criminal. Unquestionably he is a degenerate, a man who is most dangerous to himself and society, one who, if there is not sufficient evidence to cause his execution, should certainly be kept under restraint. His scrapbook, filled with clippings of his own and similar advertisements, is a rare collection, notwithstanding its worthlessness save to those engaged in the same unlawful occupation, as a book of reference for style and diction.

This résumé of Rytzel's known record is not complete, but it is sufficient at least to give a fair idea of the depravity of a man who, that he might satisfy his base desires, stopped at nothing and lived principally by the murder of innocents. With all his hardened conscience, the ordinary murderer would shrink from such deeds and blush for shame.

THE CORY CASE.

During the summer of 1900 a woman assuming the name of Dr. Emma W. Cory applied to the Colorado Medical Board for a license to practice medicine. As evidence of educational qualification she presented a certificate from the secretary of the medical department of the University of Michigan to the effect that one Emma W. Mooers had received the degree of doctor of medicine from that institution in 1884. She set forth in her application affidavit that her maiden name was Mooers; that she had married a man by the name of Cory, and that she had lost her diploma by fire. She was granted license (No. 3206) and began to practice under the name of Cory. Her subsequent actions, as is usually the case with this class of impostors, convinced the board that she was a fraud. However, suspicion without proof is worthless, and after considerable search for the original Dr. Mooers, we dropped the case.

Not long afterward Dr. (?) Cory chanced to meet Dr. Laura L. Leibhardt, a classmate of Dr. Mooers, and in the course of conversation inadvertently made the statement that she was graduated from the University of Michigan in the class of 1884 and that her maiden name was Emma Mooers. Dr. Leibhardt recognized that she was an impostor and reported her to the board. To make a clear case it was necessary to find the real Dr. Mooers. We renewed our search and located her in Waverley, Mass., where she was pathologist to the McLean Hospital.

At the preliminary trial Dr. (?) Cory held fast to her claim that she was the Emma W. Mooers who was graduated from the University of Michigan in 1884. When questioned as to how it happened that she was not lame, whereas the Emma Mooers known to Dr. Leibhardt was, she admitted that she had been lame, but claimed by a certain course of treatment to have been entirely cured. She was bound over to the district court, where she was convicted and sentenced to one year in state's prison. On account of her sex and her children the court allowed her to go on parole. Soon after the expiration of her sentence she embarked once more as a would-be disciple of the healing art, but this time as an Eddyite.

At the trial in the district court Dr. Mooers appeared as a witness, although it necessitated a trip of 5,000 miles, made possible by the aid of the medical faculty of her alma mater. It did not take the court and jury long to decide between the real and the impersonator—the one a lady of culture and refinement, the other a base, degraded criminal. It was subsequently learned that Dr. (?) Cory had impersonated Dr. Mooers in several other states and had succeeded in eluding the officers, making good her escape each time when hard pressed. These successes explained her boldness when arrested in Colorado. From her advertisements it was plain to be seen she was engaged in the same nefarious work as Rytzel.

THE WARREN CASE.

Unquestionably this case is one of the unique examples of medical forgery, or to be specific, graduation by proxy, on record. The star of this little drama is Dr. (?) Augustus H. Warren of Chicago. Owing to the defective medical statute he cannot be disturbed so long as he remains in that state, nor can the Illinois State Board of Health revoke his medical license, known to have been fraudulently obtained, if their present construction of the law is correct. He originally hailed from Indiana, Pa., where he was accused of arson to secure insurance money. From Pennsylvania he drifted west in the early eighties, and for several years was "barker" for a traveling medical faker. The opportunities this position offered for observation of the gullibility of the public in matters medical no doubt convinced him that a better field did not exist wherein he could obtain money under false pretenses than in that of quackery. To succeed, however, he must possess a medical diploma, and the story of how he obtained it reveals a talent for scheming worthy of use in a better cause.

The records of the Omaha Medical College show that in the spring of 1885 one Sidney H. Knowles was graduated from that institution. In the fall of that year he appeared in New York City under the alias of A. H. Warren, where he matriculated in the graduating class of the medical department of the University of New York as a graduate of the Omaha Medical College, 1885. At the time of this matriculation he gave his age as twenty-six, which compares with that given when he entered the Omaha Medical College in 1884. Inasmuch as the records of the Omaha Medical College show that no one by the name of Warren ever matriculated in that institution, it is conclusive that Dr. Knowles must have used his notice of graduation, or some similar credential, changed to the name of Warren, when he matriculated in the University of New York. He was graduated from that university in the spring of 1896 and turned his diploma over to Warren. We are informed that Warren stood the expenses of Knowles while in New York and gave him \$1,000 for the diploma. Rather a profitable winter's work, when a postgraduate course at one

of the best medical colleges in the country is considered. Knowles went west and practiced on his Omaha diploma. When last heard of he was in Bremerton, Wash., but like the history of all evil-doers, his life has been full of thorns. Verily, verily, "the way of the transgressor is hard"!

Warren succeeded in gaining legal standing as a physician in six states on the diploma issued by the University of New York to Knowles as A. H. Warren. Since passing out of my hands, however, it is not likely this diploma will be presented to another license board, inasmuch as the red-ink inscription on the face thereof would be decidedly detrimental to the chances of the applicant presenting it.

Warren used every scheme known to the charlatan in fleeing his victims, but his special method was to have an advance agent proclaim his coming as a renowned physician particularly skilled in the cure of cripples and incurables. He advertised not only "no cure, no pay," but declined to take any money until the cure was satisfactory to patient or guardian. By this means he could secure the promise of a larger fee, and in making his contracts he used an ingeniously devised note drawn so as to read that it became null and void if for any reason the signer was dissatisfied with the result in the case under treatment. This part of the contract was so cleverly arranged that it could be torn from the rest and leave a straight negotiable note. After securing as many such notes as he could in a community he would take them to a bank and dispose of them by allowing a liberal discount. So clever a man is he that in one rich farming district alone, with only two weeks work, he departed to pastures new with \$2,400 gathered in. It is needless to say he never returned or sent further recommendation as to administration of medicines he left, which on analysis proved to be principally common salt and water, with a little inert coloring matter added to disguise them.

THE HAGEN BURGER CASE.

Degeneracy with criminal inclination is dangerous enough when co-existent with the manners and facial expressions of a criminal, but when discovered in people of genteel appearance, pleasing address and good physiognomy it becomes a much greater danger to society. Such characters are occasionally seen in all classes of criminals, but nowhere in the annals of medical forgery can there be found a better example than in the person of a man who claims the name and titles of Dr. med. Gottfried Leonhard Hagen Burger. M.S., Ph.D., F.R.C.P.S. (King), of 867 Beacon Street, Boston.

This wonderful medical savant's history, so far as can be determined, does not, like most noted men, commence with the date and place of birth, parentage, etc., because it is impossible to trace it further back than the early eighties, when he was graduated from the American College of Veterinary Medicine of Brooklyn. After graduation he opened in that city a veterinary hospital, which he subsequently sold. He then took up the study of law, but soon chose medicine as the profession he would assume, and after a few months spent in visiting European clinics, we find him in Helena, Mont., claiming to be an M.D. from the University of Kiel, Germany. His career in Montana was of short duration, notwithstanding it was full of tragic and dramatic experiences. How he passed the examination and secured a license to practice in that state is difficult to understand when certain facts relative to his forged credentials and lack of educational and moral qualifications are considered. By whatever manner or means it was accomplished the

incident serves as an object lesson which proves that the mere possession of a diploma, without proper authentication and careful scrutiny, as a prerequisite to admission to state board examination is not all that advocates of such a statutory provision claim.

His career in Montana as a self-styled specialist in abdominal surgery came to a climax when he performed his first celiotomy on Mrs. A. J. Schumacher, the wife of a prominent mining engineer of Butte. She promptly died and her husband came near bringing Herr Hagen Burger's earthly career to a sudden and tragic end. It was not so ordered, however, and with aching bones and bandaged wounds he left the state between suns.

A few months later he made his debut in Colorado. His failure as an abdominal surgeon had veered him to another line of practice. At that time he was overflowing with personal proclamations of his skill and experience

he was on his way to New York to see about the manufacture of his pneumonia room, and should he decide to return to Denver he would then file his application and credentials.

It must be confessed that in spite of my self-esteem as a reader of human nature, this man, with his suave manner and general appearance, deceived me completely. I put him down as one of those pseudo-scientific cranks who think they are going to revolutionize the accepted theory and principles of practice. On his return he took particular care not to come near the office of the medical board, although he had the audacity to open an office in the leading hotel in Denver and send out a card to the medical profession (excepting the members of the medical board) announcing himself to be specially prepared to conduct all kinds of clinical examinations, and

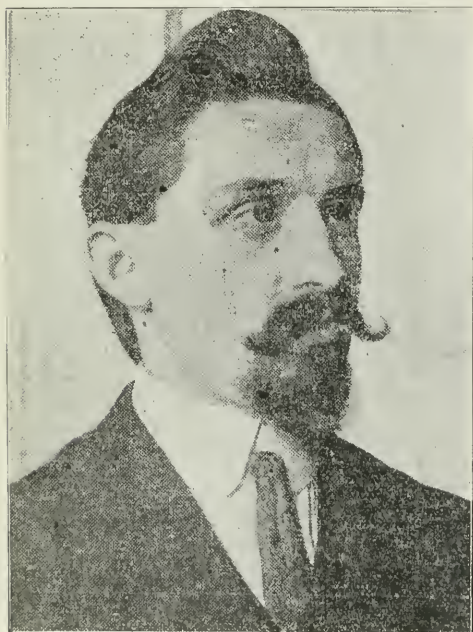


Fig. 9.—A. Edward Rytzel as Dr. George E. Cooke when arrested in Chicago by the United States postoffice authorities, June 6, 1903 (reproduction from a newspaper picture).

as a medical practitioner, disclaiming any predilection for the surgical side of the profession. His special hobby was a great invention of a room in which the atmospheric pressure could be controlled. By such a contrivance he proposed to procure for pneumonia patients in high altitudes an environment exactly the same as produced by the natural barometric conditions at sea level. He lost no time in calling on the secretary of the State Medical Board, ostensibly to inquire of the requirements for licensure, but in reality, like the ordinary bunco man, to size up the secretary, because, as was afterward discovered, he was thoroughly informed as to the provisions of the Colorado law. He claimed to be a graduate of Kiel and Wurzburg, but stated that as there was some uncertainty about his locating in Colorado, he would not make application for license; that

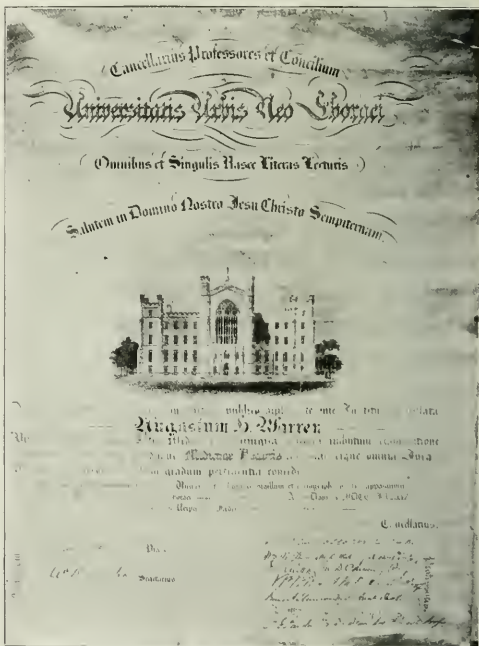


Fig. 10.—Reproduction of diploma issued by the University of New York to Sidney H. Knowles as Augustus H. Warren.

that he would limit his practice to the "diseases of the stomach, abdomen and chest." As evidence of his qualification he added the following:

- Late assistant with Chauta and Chrobak, Vienna.
- " " " Ewald, Boas and Baginsky, Berlin.
- " " " Leopold, Dresden.
- " " " Kehrer, Heidelberg.
- " " " Koch, Senator and Rosin Charity Clinic, Berlin.
- Late assistant with Leube and Maerstock, Wurzburg.
- " " " Fisher Col. Uni., New York City,
- C. P. and S.
- Late assistant with Cabot and Hewes, Harvard Laboratory, Boston.

The idea of being "Late Assistant with" eight prominent medical men from Berlin to New York is too inconsistent to need comment. The board's first knowl-

edge that he was practicing in Colorado came in the form of an inquiry from the city health officer asking if he was a licentiate in medicine in Colorado. He had been arrested for reporting a case of smallpox as typhoid fever. As he had not even filed an application for a license, we notified him that unless he immediately complied with the medical practice act he would have to answer a charge of practicing medicine without a license. His application was forthcoming, in which he made a sworn statement to the effect that he was a medical graduate of the University of Kiel, 1896, and an M.D., Ph.D., Wurzburg, 1887. In support of his affidavit he presented two documents, one from Wurzburg, purporting to grant the combined degree of doctor of medicine and surgery and doctor of philosophy; the other from Kiel, conferring the degree of doctor of medicine and surgery. As our statute allowed no recognition for a diploma conferring the combined degrees of Ph.D. and M.D., the Wurzburg diploma was returned to him, but we kept the Kiel document.



Fig. 11.—Reproduction of the diploma of Dr. Otto Tretow from the University of Kiel. Note the special type, the large white impress seal and the dean's signature in Latin script.

Owing to the general appearance of his credentials, which were poorly printed on inferior paper, our suspicions were aroused and special investigation made of his credentials. Through the kind assistance of Professor Helferich, dean of the medical department of the University of Kiel, Hon. Paul Gaston, United States consular agent of Kiel, and Professor Baumann, of the University of Wurzburg, we were able to establish the fact that both documents presented by this impostor were forgeries. That from Kiel, with the original from which it was copied, are here reproduced. The Colorado board naturally refused to grant him a license on such credentials and had him arraigned in the criminal court for offering false and forged evidence in applying for registration.

In addition to his general suavity, augmented by an

unfailing nerve, Hagen Burger possessed an exceptional gift of enlisting the aid and sympathy of the gentler sex. This accomplishment he used to advantage in securing bail. It enabled him to deceive the wife of one of the most prominent and honored members of the Colorado bar. This gentleman was induced to go on Hagen Burger's bond temporarily, but his liability proved to be permanent. The state was confronted with the difficulty of securing a witness competent to identify the genuine signature of Professor Werth, and Hagen Burger became confident he would be acquitted by our failure to get such witnesses. The law's delay was irksome and his opportunity to gull the Denver public was suspended by the pending charge.

On July 1, 1902, he made the bold move of appearing before the board for examination to show educational qualification entitling him to a license. Under our statute we could not, even had we desired, refuse to examine him, notwithstanding the abundant documentary

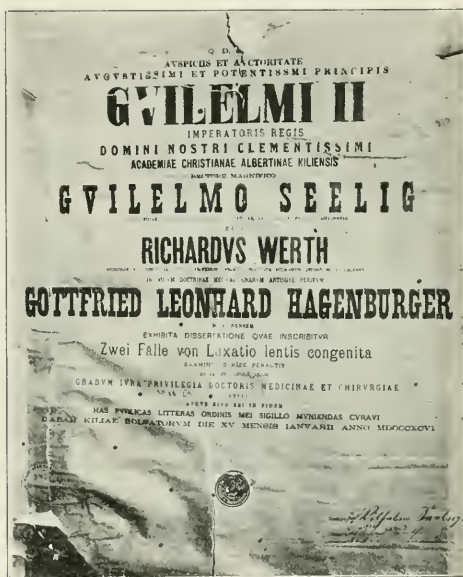


Fig. 12.—Reproduction of forged Kiel diploma by G. L. Hagen Burger. Comparison shows it to be an exact duplicate of Dr. Otto Tretow's as to date and title of thesis, but the paper, type, printing, seal and signatures are entirely different. The signature of Professor Seelig, the rector, appears with that of Professor Werth, in German script and in the same handwriting, while it is customary for only the dean to sign medical diplomas, and then always in Latin script.

evidence in our possession of his bad moral character. In filling out the customary examination blank he carefully avoided mentioning having studied at Wurzburg and Kiel, but claimed to have attended lectures at Heidelberg, Vienna, Dresden, Harvard University, New York Post-Graduate and New York Polyclinic. No record in any of these cities or at any of these institutions can be found where he regularly matriculated, although he attended the clinics in some of these cities, which, without previous preparation, did him about as much good in an educational way as the country bumpkin who went through college by walking in at the front

door and out the back the same morning. He was carefully watched during his examination and his papers liberally graded to prevent accusation of bias on the part of the board. His knowledge on the subjects of examination, however, as evidenced by his vague and indefinite answers, was so superficial and wanting in essentials we were compelled to refuse to grant him a license. His answers to ten practical questions in anatomy showed an absolute ignorance of the subject. In his "stabbing" attempts to name the muscles attached to the greater trochanter of the femur he only succeeded in mentioning two, and those by the name used in comparative anatomy, which he evidently recalled from his veterinary course of instruction. When notified of his failure to pass the required examination he forthwith began mandamus proceedings in the district court to force us to grant him a license on the grounds that the board was guilty of prejudice and partiality. The real motive in taking the examination and in instituting the mandamus suit was soon made clear by a proposition from his attorney to drop the suit, provided the court would *nolle* the criminal complaint.

Meeting the deserved disappointment in this move, and realizing that the board had been successful in securing three graduates of Kiel as competent witnesses to testify to Professor Werth's signature, Hagen Burger informed his bondsmen that he had come to the conclusion that what he had believed to have been genuine examinations by the Kiel and Wurzburg authorities were probably fraudulent schemes imposed on him by a band of counterfeiters to secure the examination fees; further, that if he could be allowed to go to Germany he could establish the fact that he had been so victimized. How such a flimsy transparency could have gained credence in the mind of so able a jurist as his bondsman is beyond understanding. Nevertheless he allowed this scamp to start on his journey, ostensibly to Kiel. He failed to get further than the Atlantic coast, and soon the report came back that he was under the care of several of Gotham's most eminent neurologists for an attack of nervous prostration of such gravity that it was probable death would take his case from the jurisdiction of the Colorado courts. The Grim Reaper was not so merciful, however, and we next hear of this impious wretch in Boston, at which time, judging from the character of the following advertisement from the *Boston Medical and Surgical Journal*, he had completely recovered from his attack of nervous prostration:

PRIVATE COURSE ON PHYSICAL AND CLINICAL DIAGNOSIS. Class limited to eight members. Six weeks individual instruction. Abundant Dispensary material. Price, \$20.

COURSE ON OPERATIVE GYNECOLOGY.

Six on the cadaver. Price, \$25.

Also preparation and quizzing for State Boards, Army, Navy, and Hospital Examinations.

Dr. Med., G. L. HAGEN BURGER, F. R. C. P.
(King.)

867 Beacon St., Boston.

At least his old-time effrontery and desire for unearned professional titles had reasserted themselves. Investigation at once revealed why he had become so bold. He had, by some means, succeeded in passing the Massachusetts medical board as an undergraduate, and thereby gained a legal standing in that state, as he had in Montana as a graduate of Kiel. With any knowledge of his cunning and fearlessness it is easy to understand how he succeeded in deceiving the Massachusetts board, but, so far as can be learned, they have taken no steps to remedy the error they made by granting this arch-medical impostor a license to practice medicine in the state and city whose very name is synonymous with

higher education. Through some agency he has circulated in Denver the story that he was teaching medicine in one of Boston's best institutions, where his scholarly attainments are recognized, in contrast to the lack of appreciation exhibited by the profession in Colorado. In view of the man's history we think this story pretty hard on Boston—at least Colorado can stand it.

Later it was discovered that he had been admitted to membership in the Massachusetts State Medical Society as a graduate of Queen's College, Kingston, Ontario, 1904. Investigation revealed that when he was reported to be under treatment in New York City for a shattered nervous system he was attending lectures at Queen's College, where he had matriculated in the senior class as a graduate of a German university, probably Wurzburg. The dean of Queen's College states that he failed on his first examination, but was passed on the second. Their senate is now conducting an investigation of the case, in which those of their faculty in charge of matriculation and examination of candidates for graduation were most ingloriously duped, and to do other than to revoke the diploma granted Hagen Burger by their college would gain that institution a most unenviable reputation with the medical boards throughout the world.

In studying Hagen Burger's character and deeds one can not help being impressed with his apparent total disregard for the consequences of his wrongdoings. This is so manifest that his sanity can well be questioned. There is so much method in his madness, however, that he should be made to feel the heavy hand of the law. Owing to the expense of extradition, and a most apparent disinclination on the part of the state's attorney to push the Colorado case against this scoundrel, it has been impossible for our board to do anything more toward his prosecution. The mandamus case against the board was dismissed when he discovered it would not accomplish his purpose. When such a man can do what he has, in the way of deceiving medical boards and the public, can any one advocate the lack of necessity for the most stringent laws regulating the practice of medicine? Certainly not, and it behooves the people that they lend every effort to assist in the enforcement and betterment of such statutes.

CONCLUSION.

The natural conclusion to my description of these examples of depravity would be an exposition of the means by which the people may protect themselves from the ravages of such medical impostors. It is possible to eradicate them and render their further appearance in society an impossibility, would the public conscience but awake and give heed to their outrages and resort to the strong arm of the state to control the practice of medicine. The establishment by law of a few sensible and obvious regulations for the government of those who hold themselves out to the public as qualified to heal the sick would eliminate from among us this class of criminals now plundering the credulous and dealing death to the feeble and disconsolate who innocently fall into their murderous hands in their aimless search for health. Here there is a grave duty to perform, and it rests heavily on the shoulders of the educated men and women throughout this broad country.

Specialism.—Dr. J. F. W. Whitbeck, in the *American Journal of Obstetrics*, says that specialism in medicine has been carried so far as to have almost caused the passing of the family physician, a condition which he deprecates.

This data does not deal with the days and nights to which we are accustomed. Most of it should be regarded as showing the conditions during a succession of twenty-four-hour periods making up one single day several months long, for such is the arctic summer. This happens because the earth's axis is never perpendicular to the plane of its orbit. Thus, on June 21 the north pole is tilted about one-fourth toward the sun, whose beams

conditions during such an Arctic summer. It is compiled from my records on the *S. S. Erik*, the auxiliary vessel of Commander Peary's present polar expedition, on which I went north for the third time to obtain certain information which perhaps may aid in making these lands accessible to the tuberculous. The vessel cruised according to her special purposes and there was no selection of places with regard to climatic conditions. The arctic waters were entered a month past the summer solstice, and so the chart but depicts conditions toward the close of the summer day.

The weather of the first week, in passing Newfoundland and Labrador, was worse than that usually met at this time of year in more southern waters. In contrast to it is the latter part of the return trip over the same route. This is in accordance with the well-known changes of fog in these regions.

It will be seen from the chart how a few days suffice to bring one into the regions of ceaseless sunshine, where for months a clear atmosphere is the rule and

life-giving stimulus of two days' sunshine thus forced into one, but the value of the light is enhanced, as is shown by the accompanying photographs. Figure 1 was taken at 12 p. m., a snapshot from the moving vessel, the diaphragm used being one proper for exposures in our latitudes during the afternoon, when the altitude of the sun is much greater. The nearest land and glaciers were 10 miles off.

Figure 2 is an example of the deceptive perspective created by the clear atmosphere under certain conditions of light. It is an instantaneous exposure with a one-fourth inch diaphragm taken at 9 a. m. The iceberg is about $1\frac{1}{2}$ miles off, the glacier front about a half mile farther on and the receding gorge is over a mile in length, though to the eye, as well as in the photograph, all objects appeared to be about the same distance off.

Being previously aware of the peculiar actinic power of the arctic sunlight, a pin-hole camera, without a lens, was prepared as a test. In Washington this required a three-minute exposure. In northern Greenland, under



Fig. 1.—Snapshot of land ten miles distant, taken in Arctic regions at 12:00 p. m.

poor weather the exception. Starting earlier, one would have not one month, but two or even three months of this summer day.

The lines in the marginal brackets, during which days the vessel remained at anchor in the same place, are blank for the simple reason that hour after hour there was nothing to record—no haze, no fog, no clouds, no wind, no darkness, nothing but a succession of hours of brilliant sunshine. The first series was at 76.5 degrees north latitude in North Star Bay, a small basin bending in from Worstenholm Sound, eight miles from where the latter debouches into the open sea. The second series was at 78.5 degrees north, just within the entrance of Etah Fjord, which is protected by high hills of warm rock on either side. The blank spaces of these days show the difference between the atmospheric conditions on the sea and when but a few miles distant from the coast line.

The chart shows that away from the open sea there was nothing to obtund the sunshine. Not only is the

what seemed to the eye to be equivalent conditions of light, one minute sufficed, and an exposure of two minutes blackened the film. Though the quantity of the light appeared to be the same, its quality was altered; there was an increase of the actinic rays, and it should be borne in mind that these rays are allied to those which influence metabolism. Much of this increase of actinic effect may be attributable to the clearness of the atmosphere; indeed, one may at times see plainly objects seventy-five or a hundred miles away, but other facts indicate that a further explanation must be sought.

The hypothesis is advanced that there is a different proportion of the component rays in the sunbeams as they approach the poles or approach the equator. In laboratory experimentation it is known that magnetic fields deflect some rays having the more rapid vibration periods, and the earth, acting as a magnetic field, may so influence the stream of approaching sun's rays that some will be deflected from their straight course and crowded together toward the Poles.

The prolonged absence of light and the recurring scarcity of food each winter would lead to the extinction of life in the far north were there not compensations given in this protracted light of extra potency. As it is, the vegetation does wonderfully well in its struggle for existence, the native animals are the largest of their kind, and countless fowl from the south select these places to hatch and rear their young. The Eskimo lose flesh and strength during the scarcities of the winter season, yet with the returning light they recuperate quickly, become again plethoric and, as do the animals, accumulate a surplus of fat to carry over into the next depressing winter.

In these lands there occurs naturally on a grand scale all that we may try to accomplish by artificial aids in treating slow diseases in which periods of retrogression are liable to occur. The management of the favorable stages in such diseases is directed toward regaining the vitality already consumed by the disease and also, when possible, providing a reserve of strength to safeguard against the next period of depression. In many parts of the Arctic such a stimulation is exhibited for the fourth part of each year in every event of life, and it may be made serviceable in increasing chances of regaining health.

Concerning the temperature records, it may be said that readings were taken at 8 a. m., noon, 4, 8 and 12 p. m., and the thermometers were shaded and sheltered twelve feet above the side of the vessel to eliminate, as far as possible, errors which might be caused by heat from the vessel. Check observations showed but minor alterations from this cause.

Air itself, that is, the mixture of oxygen and nitrogen, can not be heated; the sunlight in passing through warms only the admixture of other gases, watery vapor, dust, etc., and this determines the temperature of the atmosphere. As the Arctic air carries no dust and the percentage, i. e., the actual amount of contained moisture is small, it remains cool, even under the ceaseless sunshine. This gives it a bracing quality that is not felt as cold, for when out of doors one always experiences the temperatures given in the next column of the chart. These were taken at odd times when the sun could beat through the open door of the observatory directly on the instruments. These figures show why one wears neither overcoat nor gloves in the arctic summer and how one may sleep comfortably out of doors if so disposed. The Arctic summer is pleasant; it is not warm enough to enervate; it is just cool enough to freshen one and to invite an invigorating life.

The limited range of the daily fluctuations in temperature is accounted for by the heat which is radiated from the rocks being taken up by the miles of glacier ice. This thermostatic action insures uniformity of temperature; there are no decided barometric "lows" and storms are rare in summer.

In the bracketed series of days, the relative humidity,

instead of remaining above the seventies, went as low as 28.08. The prevailing light winds are from the icy interior, and the atmosphere loses its surcharge of moisture as haze or fog along the coast. Had it been possible to take the observations a half-mile inland or even in some of the deeper penetrating fjords, the maxima of humidity would have been much less than those shown in the chart.

A comparison of the relative humidity at each of the places where the steamer remained for some days, with observations of the U. S. Weather Bureau during the same month of August at cities in different sections of our country, stands as shown in table.

The atmosphere of these places in Greenland during the stay of the vessel was never as moist as during the night and morning hours in each of these cities; it was never as dry as it became in three of them during the heat of the day; the range of variation was decidedly less, and the actual amount of contained moisture was smaller.



Fig. 2.—Snapshot of iceberg one-half mile distant, glacier one mile distant and gorge of a mile in length, showing deceptive perspective caused by clear atmosphere in Arctic regions.

In this connection it may not be improper to consider the influence which sea air, which is the air of accessible parts of the Arctic, may have on the tuberculous. A comparison of the tuberculosis ratio of the army with that of the navy may be useful, as in both services the

| | Maximum Humidity. | | Minimum Humidity. | | Average Humidity. | |
|---------------------|-------------------|---------|-------------------|---------|-------------------|---------|
| | 8 a. m. | 8 p. m. | 8 a. m. | 8 p. m. | 8 a. m. | 8 p. m. |
| New York..... | 100 | 95 | 62 | 50 | 81.3 | 74.4 |
| Washington..... | 100 | 93 | 65 | 56 | 84.8 | 79.1 |
| Los Angeles..... | 100 | 80 | 52 | 23 | 88.1 | 62.1 |
| Denver..... | 90 | 40 | 41 | 13 | 66.1 | 37.1 |
| Phoenix..... | 88 | 50 | 43 | 15 | 59.0 | 25.2 |
| North Star Bay..... | 72 | 71 | 56 | 39 | 63.1 | 54.0 |
| Ethah..... | 81 | 70 | 40 | 35 | 57.6 | 52.4 |

men are equally hearty on taking up the special life. The sailor sleeps in ship's quarters, does not get fresh food when at sea, his exposure is more severe, his sleep, duty and relaxation are set by watches instead of being naturally regulated by night and day, and when ashore

he is exposed to the infection even while breathing dusty air, to which he is unaccustomed. Considering the chances of the two, the sailor should succumb more often than the soldier, yet there is about an equal tuberculosis rate in both services. It seems, therefore, that a life near or on the sea has some influence in at least holding off tuberculosis infection, and so after infection sea air should be preferable if it can be had where there are no decided fluctuations of temperature or a high humidity to produce dampness, catarrhal conditions, etc. Such is the air of these lands. In all respects as to comfort it is preferable to the air of excessively dry regions.

On this short trip the crew, though engaged at habitual work and having the same food as on other cruises elsewhere, and probably not so good as at home, made an average gain of ten pounds in weight.

Concerning the classification of each day as to its suitability for semi-invalids, I consulted Prof. N. Senn, who also undertook the journey to complete his investigations of disease among primitive races by a study of the Eskimo of northern Greenland. As the vessel was covering some 200 miles each day, sometimes near land and sometimes at sea, we had to consider the general characteristics of the whole twenty-four hours, paying particular attention to the usual waking hours. When the weather was such that a delicate person would feel uncomfortable, or the day one which we could not consider beneficial, it was classed as unsuitable or No. 4. When most of the day was good, but with some hours of dampness or wind, generally in the night hours, it was classed as indifferent or No. 3. Days which had the full sunlight obtunded by clouds or were slightly overcast were called favorable or No. 2. These days were in reality fine days and only classed as No. 2 in order to reserve a class for the superexcellent days, in Group 1, whose perfection could not be equaled elsewhere. At each of the two harbors in the north there was a succession of these "excellent" days; this series, it may be said from past experience, had been repeating itself for two months and continued for some weeks after we left.

In the arctic there is a significant absence of affections of the respiratory tract. The following statements from leaders of experience may be interesting: General Greeley, in referring to previously published statements of my own,¹ writes: "My experience regarding the contracting of colds, is practically the same as that mentioned in your article." Also, Mr. W. S. Champ says: "From my experience in the arctic I thoroughly agree with you in regard to the climatic advantages to be met with in the far north." When one is chilled in wet clothing the physiologic reaction may sometimes be manifested by relaxed tonicity and engorged nasal membranes, but this is fleeting; there are no pathologic conditions of catarrh and no fever; in short, one can not "take cold."

The arctic atmosphere holds no dust and is sterile so far as noxious germ life is concerned. Sparse molds and a few harmless bacteria exist, but the low temperature does not favor the development of pathogenic organisms, and the constant sunlight will forever keep these lands free of contamination by imported diseases.

The merits of this climate for the relief of chronic affections, particularly tuberculosis, are threefold:

First.—It holds absolutely nothing to add fuel to the existing flame. There is no dust to irritate tissues al-

ready struggling against a present mastery of the disease, no superadding of pus or other infections, no contracting of colds to invite a setback, nothing to depress vitality.

Second.—It holds every incentive to an increase of bodily vigor. Each and every chance and opportunity for a cure which is here sought for and obtained only singly or indifferently is there grouped together in full intensity without the necessary presence of any disadvantageous element.

Third.—As a result of this dual combination, a beginning tuberculous process may be checked in the shortest space of time, and not so much local damage will be done while waiting for the tide to turn and recovery to begin. This will lessen the chances of a new infection occurring after a cure.

Since I have broached this subject I have heard from no one acquainted with these lands who does not corroborate these views. Dr. F. S. Nash, surgeon, U. S. N., who has contributed a monograph on the arctic, in a personal letter, writes: "My position as one of the surgeons of the Greeley Relief Expedition under Admiral Schley and afterward as surgeon of the Northern Alaska Exploring Company gave me excellent opportunities for observing the conditions of which you write. . . . most heartily indorse your statements." Mr. H. L. Bridgeman, a traveler of wide experience who has been to the places where the foregoing records were taken, considers them eminently suitable for a summer sojourn by consumptives.

Prof. N. Senn, the latest and most deeply observant of medical writers on the Arctic,² briefly summarizes the whole situation when he says that Nature there bends such efforts toward prophylaxis as to leave no need for therapeutics.

These lands can be reached without difficulty or danger; the pioneer work has been done and the way is open. Concerning this Commander Peary, who knows every detail of the Arctic in its pitiless moods of winter and its smiles of summer, wrote last August at Etah: "Answering your inquiry in regard to bringing a ship to this region for a summer voyage, I beg to state that the experience of nearly fourteen consecutive summers enables me to say that there is nothing more arduous in a voyage to this region than in the voyages which are now undertaken each year by tourists to the North Cape and Spitzbergen."

In conclusion, these northern lands hold distinctive conditions which are precious. Here is a field for a benevolent enterprise, with more surety of practical results than are to be had elsewhere. This field, reported on and indorsed by professional men and others who know whereof they speak, is worthy the attention of those who could begin such an undertaking.

INFANTILE PSEUDOLEUKEMIC ANEMIA.

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This disease of infancy is one about which there has been a great deal of discussion among writers on diseases of the blood since von Jaksch, in 1889, first described the disease which now bears his name. Italian writers recognized and described peculiar forms of grave

1. *American Medicine*, vol. vii, No. xvii, April 23, 1904. *Washington Medical Annals*, vol. iii, No. v, Nov., 1904.

2. "Medical Affairs in the Heart of the Arctic," *The Journal A. M. A.*, 1905, vol. xiv, pp. 1564, 1647.

anemia in children as far back as 1880, which they placed in an intermediate position between leukemia and Hodgkin's disease. Some authorities, Ebstein, Fischl and Cabot, do not recognize it as a clinical entity, but classify all such cases as pernicious anemia, leukemia, or secondary anemia with leucocytosis.

This controversy arises primarily from the fact that in young children there is a tendency for the blood in all forms of severe anemia to retrogress to an embryonal form: added to this, there is a much more active response to chemotactic influences; and a general tendency of the spleen to become hypertrophied in all cachectic diseases of infancy. The lack of detailed laboratory and postmortem reports in the cases described by the early writers, together with the wide variations in their blood findings, have added to the confusion and made it almost impossible to agree on a classification. In recent years there have been very few cases reported. Glöckner, in 1898, described three cases which tally closely with the following one:*

Patient.—M. M., male, aged 15 months; one of twins; poor condition at birth, weight 4 pounds; had pertussis when 8 months old; twin brother died of marasmus; breast-fed 11 months; other foods, which were supplied by charitable institutions for a few weeks previous to admission, such as dextrinized barley and meat juices, were given irregularly. Parents extremely poor and ignorant; father alcoholic.

For the past month, the child had been gradually growing thinner, weaker, and more irritable. He was admitted to the Babies' Wards of the New York Postgraduate Hospital, May 29, 1905, weight 10 pounds 8 ounces, temperature 99.6, pulse 138, respiration 38. His general appearance was that of severe malnutrition, of the marasmic type, the anemia being a marked feature.

Examination.—(a) Head large, hair thin and dry, no bosses or craniotubes. Face showed marked loss of subcuticular fat, skin wrinkled and general wizened expression.

(b) Thorax was small; palpation and percussion negative; on auscultation no adventitious sounds were heard over either lung, and the breath sounds were of normal intensity, except over the upper lobes posteriorly, where the sounds were heard less distinctly. Apex beat was in fourth intercostal space, just outside the mammary line. Heart sounds regular, and of normal character.

(c) Abdomen was prominent; walls flaccid, due to loss of muscular tone; spleen was readily palpable, its anterior notched border extending two and one-half inches beyond the left costal margins. Lower border of liver was just palpable below the ribs.

(d) Extremities were very emaciated; muscles weak and flabby; epiphyseal cartilages not enlarged; feet and hands cold, indicating poor circulation.

(e) Glands in the axilla and groin were palpable, but soft and non-agglutinated.

Course of the Disease.—On admission the child was given the usual laxative, and placed on substitute feedings of dextrinized barley gruel, and beef juice. Later, cows' milk (modified) was added. The urine examination at this time gave the following results: Sp. gr. 1018; no albumin or sugar; urea 2 per cent. indican a trace; microscopically, a few epithelial elements.

Ten days after admission the patient developed symptoms of gastroenteritis. The stools became frequent and watery, of a greenish-yellow hue, and vomiting occurred, soon after taking food. The temperature, which till this time had been practically normal, suddenly rose to 104, with a corresponding increase in the pulse rate and respiration. These acute symptoms soon subsided; nevertheless, from this time on, the child failed steadily, in spite of everything that was done for him, the weekly weightings showing progressive losses of from two to eight ounces. At this time also the child developed a

very troublesome cough, which particularly disturbed his rest at night. Physical examination indicated slight dullness on percussion over the posterior aspect of both apices, with diminished breath sounds and increased vocal resonance.

The temperature curve showed daily variations of one to three degrees, the maximum being in the evenings until within a few days of his death, on July 17, during which period it remained either normal, or subnormal. A second urine examination made a few days before his death gave, sp. gr. 1022; albumin, moderate trace; sugar, none; urea, 2.2 per cent; indican, marked trace; microscopically, a few hyaline and finely granular casts.

The first blood examination was ordered on June 14, to eliminate, if possible, pneumonia or sepsis, as a cause of the sudden elevation of temperature that occurred at that period, and then it was that the blood dyscrasia underlying all these previously mentioned clinical manifestations, was first discovered. As a result, the child was given minimum doses of Fowler's solution, t. i. d., for two days, after which, on account of an exacerbation of bowel trouble, the drug was discontinued. It is worthy of note, however, that the following weekly weighing showed a gain of ten ounces. Three other examinations of the blood were made at intervals, the last one being but three days previous to death. For purposes of comparison the different blood findings are tabulated, as follows:

TABLE OF BLOOD FINDINGS.

| | June 14. | June 23. | July 3. | July 14. |
|-------------------------------------|-----------|-----------|-----------|-----------|
| Hemoglobin (Dare's), per cent. | 38 | 35 | 31 | 30 |
| Erythrocytes, | 3,120,000 | 2,920,000 | 2,740,000 | 2,720,000 |
| Leucocytes, | 14,400 | 18,000 | 19,540 | 16,200 |
| Erythroblasts, | 2,800 | 2,700 | 2,660 | 17,600 |
| Color index, | 603 | 593 | 563 | 549 |
| <i>Differential count:</i> | | | | |
| A.—of W. B. C. | | | | |
| Polymorphonuclear, per cent. | 18 | 20 | 36 | 21 |
| Small mononuclear, per cent. | 28 | 27 | 19 | 31 |
| Large mononuclear, per cent. | 42 | 41 | 28 | 35 |
| Transitional, per cent. | 1 | 1 | 1 | 1 |
| Eosinophile, per cent. | 2 | 3 | 6 | 3 |
| Myelocytes, per cent. | 9 | 8 | 10 | 9 |
| | 100 | 100 | 100 | 100 |
| B.—of nucleated R. B. C. | | | | |
| Normoblasts, per cent. | 6 | 8 | 26 | 43 |
| Megaloblasts, per cent. | 94 | 92 | 54 | 57 |
| | 100 | 100 | 100 | 100 |

The above percentages of the different forms of white blood corpuscles were obtained by finding the relative frequency with which each of them occurred in a count of 500 or more leucocytes, in a stained slide-preparation. The number of nucleated red cells to the cubic millimeter was determined by first counting all the nucleated elements found in the Turek counting chamber, and then deducting the number that represented the percentage of erythroblasts as found in a differential count of both varieties of nucleated blood cells.

From a study of the table the following facts will be noted: (1) A severe, thorough, not extreme, reduction in the red blood cells; (2) a constant, uniform, and well-marked leucocytosis, in which the mononuclears predominate; (3) a great number of nucleated erythrocytes, particularly of the megaloblastic variety. The tremendous increase of both varieties noted in the last count may be ascribed to an acute exacerbation of the blood changes preceding death; (4) a low color index; (5) constant presence of myelocytes—neutrophilic, basophilic and eosinophilic.

There were considerable variations in both the size, and staining of the erythrocytes. Poikilocytosis was marked, and karyokinetic figures were not infrequent. The accompanying illustration graphically represents a composite picture of the cellular changes.

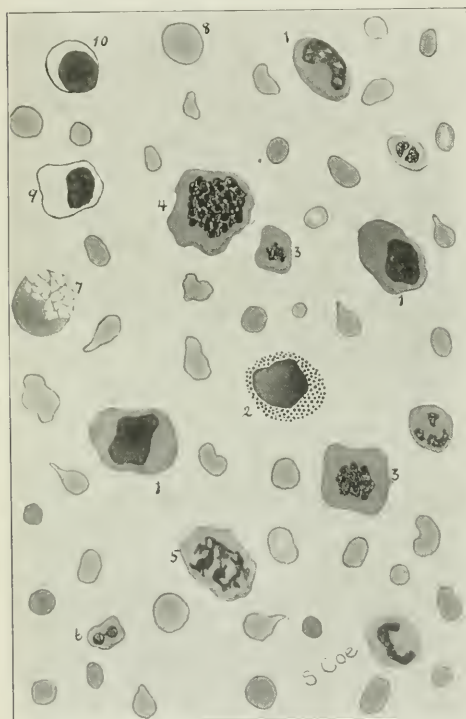
Postmortem Examination.—All the tissues and organs examined had one characteristic in common, extreme pallor and bloodlessness.

Spleen.—Greatly enlarged in all its dimensions, weight 91 gms., slaty-blue in color, very firm consistency. The cut surface did not bulge and the Malpighian corpuscles were indistinct. Microscopically the capsule showed a slight uniform thickening. The trabeculae were markedly hypertrophic,

* This case is reported by kind permission of Professor Callié, attending physician to Baby Wards, New York Post-Graduate Hospital, under whose care the patient was.

the fibrous elements being predominant; there were present, however, a few elongated, darkly stained nuclei, and a moderate amount of degenerated blood-coloring matter, between the fibers. The pulp reticulum was also greatly increased. In the pulp itself four changes were noted: (1) The presence of a large number of round cells, with oval nuclei, and a varying amount of protoplasm; (2) a great increase in eosinophilic cells, containing usually one or two dark-staining nuclei; (3) a deposit of degenerated, amorphous blood pigment in the intercellular spaces; (4) a great diminution in the usual number of erythrocytes. The Malpighian corpuscles did not appear to be affected to any appreciable degree.

The *Liver*,—was slightly increased in size, and normal in consistency; acini markings were indistinct; cut surface was smooth and very pale. Microscopically there was no deposit of iron pigment in the liver cells; there were no collections



Representation of the blood in infantile pseudoleukemic anemia, drawn from an eosin-hematoxylin preparation. 1. Myelocyte. 2. Eosinophilic myelocyte. 3. Megaloblast. 4. Chromatophilic megakaryoblast. 5. Karyokinetic megakaryoblast. 6. Normoblast. 7. Myelocytic hydrops of nucleus. 8. Megalocyte. 9. Large mononuclear leucocyte. 10. Small mononuclear leucocyte.

of round cells between them; a few eosinophile cells were present and degenerated hemoglobin was found in the intercellular spaces between the liver columns.

The *kidneys*,—the capsule was non-adherent; cut surface was pale and cloudy. Microscopically there was a cloudy swelling of the cells in the glomeruli and convoluted tubules. On looking closely, brown, amorphous granules of blood pigment were noted in the perivascular spaces.

The *stomach*,—was of normal size and texture. Mucosa, although very pale, showed no evidences of any hemorrhagic condition. Microscopically there was nothing of pathologic interest, except for the presence of a slight amount of amorphous pigment in the intercellular spaces. The other ab-

dominal organs,—the intestines and pancreas,—were not examined microscopically, as they showed no gross lesion.

Of the *thoracic viscera*, only the lungs were examined microscopically. The thymus was not enlarged. The heart was contracted, of normal size and consistency, but markedly anemic.

The *lungs*,—a strip of hypostatic congestion extended along the posterior aspect of both lungs, while at the apices there were small portions of non-aërated parenchyma. Microscopically, these portions of lung tissue were found to be areas of bronchopneumonia, with marked congestion of the small arteries and a desquamation of the alveolar-bronchial epithelium; the nucleated erythrocytes in the lumina of these vessels were very numerous. There was also a remarkable proliferation of the fibrous tissue in the trabeculae, and in the adventitia of the vessels, which extended into the alveolar framework. As in all other organs examined, there was noted a deposit of degenerated blood pigment in the intercellular spaces, especially in the congested areas. The pleura was slightly thickened over the sight of the pulmonary involvement, but showed no evidences of acute inflammatory changes.

Regarding the important causative factors in this disease, although much has been written of a speculative nature since von Jaksch's publication, we are still no nearer a solution of this problem. Rickets, chronic intestinal catarrh, syphilis and tuberculosis, have each played a part in certain of the cases reported, most commonly the first and second of these. An infectious origin was claimed by certain writers as early as 1880, but it has never gained wide acceptance.

The three conditions of the blood from which this disease must be differentiated are pernicious anemia, leukemia and secondary anemia with leucocytosis. The diagnosis rests on three factors (a) the clinical history, (b) morphology of the blood, (c) the pathologic changes in the viscera (Ewing).

Clinically, the points to be considered are the age of the patient, usually 1 to 4 years; the presence of rachitis or chronic intestinal catarrh, the enlarged spleen, the absence of any other assignable cause for leucocytosis, and the relatively favorable prognosis in this form of anemia.

In regard to the blood changes, the essential features are grave anemia, uniform and persistent leucocytosis, and lowered hemoglobin ratio. The erythrocytes are always markedly reduced in number, but seldom to the extent that occurs in pernicious anemia; the variation in size, shape and staining and the number of nucleated cells are marked, but not distinctive features in anemia infantum. The leucocytosis usually varies from 20,000 to 50,000, although much higher counts have been recorded. These latter cases, especially when associated with enlarged liver, must always be accepted with a great deal of hesitancy, unless the diagnosis be confirmed by the postmortem findings, being otherwise often indistinguishable from leukemia. In most of the cases in which differential counts have been made, the lymphocytes have predominated, and in some instances formed as high as 80 per cent. of the total number of white blood cells. The presence of myelocytes is a frequent though not absolutely essential feature; they do not, however, approach the proportions found in the myelogenous form of leukemia, the highest count recorded being 10 per cent., by Luzet.

As regards the tissue changes, their significance has not as yet been accurately determined. From an anatomic standpoint, however, they are sufficiently characteristic to justify the separate classification of these cases. The absence of iron deposits in the liver cells and of the characteristic lymphoid nodules in the vari-

ous organs are quite sufficient to preclude the placing of them under the heads of either of the two forms of primary blood dyscrasia mentioned above—pernicious anemia or leukemia.

While considering differential diagnosis, attention is drawn to the great similarity in the general appearances and clinical manifestations of these cases, to the ordinary severer forms of malnutrition. So striking is this outward resemblance that it is not surprising that there may be no suspicion of the real trouble, previous to the examination of the blood. Hence, in my opinion, it is highly important, both from the standpoint of the child and in the interests of scientific medicine, that, whenever possible, a complete and systematic blood examination should be made in every obscure and obstinate case of malnutrition, particularly if the physical signs indicate enlargement of the spleen.

The prognosis depends largely on two factors—the early diagnosis and the ability to procure proper treatment. In neglected cases the outlook is grave indeed.

The treatment, as in nearly every other disease of childhood, resolves itself primarily into a question of improving the hygienic surroundings of the patient, and carefully regulating the diet to suit the condition of the stomach and intestines. There is, however, one drug—arsenic—which, if not a specific, has been recommended most highly by the different writers on this subject. It should be administered in the form of Fowler's solution, starting with a minimum dose and gradually increasing to the limit of toleration.

THE LOCALIZATION OF THE HIGHER PSYCHIC FUNCTIONS,

WITH SPECIAL REFERENCE TO THE PREFRONTAL LOBE.*

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PHILADELPHIA.

Cerebral localization had several epochs during the nineteenth century. At its dawn the views of Gall had awakened interest not only in the scientific world, but in all the European centers of population. Gall had boldly advanced the idea that the brain was not only subdivided into centers of special function, but that these were indicated on the outside of the head by peculiar prominences and conformations. An essential element of his phrenology was the existence of cranial salients, recognizable by the skilled fingers of the examiner, and constituting the ectal correlatives of ental physiologic centers in the brain substance. The bumps of the phrenologist represented gyres and subgyres, in which resided, as in the compartments of an elaborately arranged house, the habitants of the soul or mind.

Gall, who was a worker as well as theorizer, eventually lost himself in mazes of his own creation, but he will at least be remembered as one who fastened the eyes of the world on the truth that all parts of the brain do not act together for a single purpose, and that a single

part of the brain is not sufficient for all the functions of the mind.

For nearly three-quarters of a century the advances made in our knowledge of cerebral localization were limited. The one great discovery before 1870 was that of the existence of a center for speech in the hinder part of the left third frontal convolution—the center of Broca.

As the result of the impetus given by Hughlings Jackson, in his suggestion that certain small areas of the cerebral cortex were representative of particular movements, the researches of Hitzig and Fritsch, of Ferrier, Charcot and others were given to the world between 1870 and 1880, and the existence of a cortical motor zone with many subareas or centers was soon almost universally recognized. Before long, visual, auditory and other sensory phenomena were found to have their cortical representation.

For nearly a quarter of a century attention was concentrated on the discovery of separate cortical centers, until Flechsig (1893), through his embryologic researches, demonstrated the importance of recognizing not only primordial centers of sense and of movement, but also the existence of cerebral association areas concerned with intermediate and higher psychic functions. Since the period inaugurated by Flechsig, the subject has evolved in two directions: 1, In the direction of a more exact delimitation of areas and centers concerned with primary functions; 2, in that of the recognition of subdivisions of Flechsig's posterior association area, the concrete concept area or the concrete memory field. The visual and auditory subdivisions of this concrete memory field have in particular received some exact subdivision through clinicopathologic, morphologic, anatomic and physiologic research. The views of the authors in regard to cortical localization in general have been indicated in diagrammatic schemes published by one of us.¹ It will be observed in studying these schemes that not only are lower and higher areas of vision and audition indicated, but also special areas for cutaneous and muscular sensibility and stereognostic conception.

Each sensory zone has contiguous to it a motor area or center, the main motor region being that which is closely related topographically, as it is functionally, to the areas of cutaneous and muscular sensibility.

We shall not go into any detailed consideration of these zones, subareas and centers. This glance at the history and the present status of cerebral localization is given in order to lead up to the particular subject of the present paper, which is concerned with the centers of the highest psychic functions. We hold to the view that the highest mental faculties or functions have their material representation in the prefrontal lobes of the brain, and especially in the left prefrontal lobe. Our concern will be to give the general data and reasons for this belief, supplementing the paper with a report of a case of tumor of the left prefrontal lobe recently observed.

Gall and his followers made an elaborate subdivision of the faculties of the mind as understood in their time. One mistake made by them was that they did not recognize the essential difference between a fundamental faculty or function of the brain and certain cerebral side

1. Mills, C. K.: "The Physiologic Areas and Centers of the Cerebral Cortex of Man with New Diagrammatic Schemes," Univ. of Penna. Med. Bulletin, May, 1904. Also: "Subdivisions of the Concrete Concept Area of the Human Cerebrum," Medical News, Nov. 5, 1905. Also: Mills, C. K. and Frazier, C. H.: "The Motor Area of the Human Cerebrum, Its Position and Subdivisions, with Some Discussion of the Surgery of this Area," Univ. of Penna. Med. Bulletin, July-August, 1905.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

* From the Department of Neurology and the Laboratory of Neuropathology, University of Pennsylvania.

attributes or epiphenomena. The ability to attend, to will, to judge, to compare, to reason and to exercise the imagination are fundamental psychic functions; the exhibition by an individual of pride, of vanity, of friendship, of combativeness, of piety, of filial love, of sexual passion or similar propensities, is not due to the operation of any single mental faculty or function. The former are the vocations, the latter the avocations of the mind. The former are represented by special centers associated by special tracts; the latter result from the action of one or several or many of the regions of the brain.

The evidence afforded by studies in human and comparative morphology and anatomy of the cerebral surface in favor of the view that the prefrontal lobe, and especially the left prefrontal lobe, is the seat of the highest mental faculties, is of much value. Already a considerable number of the brains of notable men presenting special fissural and gyral arrangement and development of the prefrontal region indicative of high or unusual endowment have been put on record. Reference need only be made to the classical cases of Gauss, Helmholtz and Grote and to the more recent studies of E. A. Spitzka on the brains of the two Seguins, Cope, Harrison Allen, Major Powell and others. If the anatomic and morphologic characteristics of such brains are placed side by side with those of criminals, paranoiacs, negroes and other human beings of low individual or racial development (as studied by Dr. Mills and others), the psychophysiologic importance of the prefrontal region becomes apparent. It might be remarked in passing that morphologic and anatomic studies do not always seem to give to the left prefrontal lobe the preponderance in higher mentality attributed to it by some. Spitzka, for instance, found in the brain of Major Powell a preponderant development of the mesal surface of the right frontal lobe. In studies of this kind a comparison should always carefully be made between the fissural and gyral characteristics of the prefrontal and parieto-temporo-occipital areas. A superior development of the latter is not always accompanied by an equally superior pattern of the former. In rare cases the former may largely outclass the latter.

Morphologic studies of the brains of imbeciles, such as have been made by Wilmarth and others, are corroborative of the view of the higher psychic functions of the prefrontal region. These brains are, as a rule, characterized by unusual simplicity in fissural and gyral arrangement.

The embryologic researches of Flechsig and the histologic investigations of Campbell show, among other things, the absence of projection cells and fibers in this portion of the brain. The latter speaks of the prefrontal region as the very last pallium to appear in the progress of phylogenesis. We may accept this statement and regard it as in accord with our views of the functions of this part of the brain. The last and the least organized portion of the nervous system is the most highly organized and most specially endowed.

Gross and microscopic examinations of the brains of general paretics support in some degree the thesis that the prefrontal portion of the cerebrum is the seat of its highest functions. It is probable that careful pathologic investigation of the brains in cases of dementia præcox will afford similar evidence.

Presuming that the prefrontal lobe is especially concerned with the highest intellectual functions, the question of whether or not this region is divided into sub-

areas and centers is one which is naturally suggested. In such a study we have not to guide us comparatively coarse and easily differentiated phenomena-like movements and disorders of cutaneous sensibility, or of the special senses.

The higher psychic faculties themselves are indeed usually so interblended in expression as to make a study of their relative maintenance, loss or increase in particular individuals, a matter requiring trained powers of observation and analysis, such as are not often possessed, or at least exercised, by those recording cases of disease, arrest of development or unusual endowment. It is possible that the clue to the subdivisions of the highest psychic region may be found by a consideration of the position and relations of the centers of known functions contiguous to the prefrontal lobe. Intermediate between this lobe and the area recognized as motor are situated centers concerned with speech and with writing. Broca's center is situated just anterior to the centers for articulation, enunciation and phonation, the subdivisions of the so-called face area. Speech is the chief instrument employed in reasoning and the psychic centers of ratiocination should be topographically closely related in position to the center of Broca. Writing administers to exactness in thinking and the centers of comparison and judgment may have their highest development contiguous to the graphic center. While in the main the motor centers, for the face, arm, trunk and leg are limited to the precentral convolution, the centers for movements of the head and eyes, and especially for movements of the eyes alone, are thrust toward and into the prefrontal lobe. Attention and volition have their most marked physical expression through vision and position of the head, and if centers for these mental faculties or processes are differentiated their most probable situation is in parts contiguous to centers for movements of the eyes and head.

One of the greatest difficulties of proving the localization of the highest intellectual processes has arisen from the fact that physicians, even those trained in neurology and psychiatry, frequently fail to note the mental symptoms carefully or describe them in such an uncertain manner as to make the records of little value. It is surprising, considering the richness and profusion of the clinicopathologic contributions to cerebral localization during the last two or three decades, how few of these have any notable value regarding the higher psychic functions. In our own language, the contributions of Phelps² are of especial value. An elaborate study of personal and other cases is made by Phelps, who arrives at the conclusion that the left prefrontal lobe is the seat of the highest mental processes. He says:

The large number of cases cited, with the analysis of their symptoms and lesions, are probably sufficient in themselves to form a basis for conclusions. They represent the personal observation and record of 800 cases of intracranial traumatism, of which more than 300 were subjected to either operative or postmortem inspection. Excluding those cases in which death had been preceded by primary and permanent unconsciousness, they were all germane to the present inquiry as showing either the presence of left frontal lesion where mental symptoms had been noted, or the absence of such symptoms where the lesion was situated in any other region of the brain.

Besides the series of traumatic cases compiled by Phelps, other collections of cases of prefrontal lesion have from time to time been published, as well as a con-

2. Phelps, Charles, *New York Med. Jour.*, Nov. 10, 1894, to Jan. 12, 1895; "Traumatic Injuries of the Brain," etc., *New York*, 1897, 1900; *Amer. Jour. of the Med. Sci.*, April, 1902.

siderable number of isolated cases either due to disease or injury. Some of these, like the crow-bar case, have so often been recalled that they are now well known to the profession at large. The inferences drawn from both the individual cases and the compilations have been conflicting, some holding that they prove nothing as regards the functions of this portion of the brain or only indicate that it is physiologically negative; on the other hand, a very considerable number of cases of lesions situated elsewhere than in the prefrontal lobes and giving symptoms indicative of the involvement of the higher psychic faculties, have been recorded. We believe, however, that the comparatively conflicting cases can be satisfactorily explained. In many instances the individuals whose cases are reported have been of a relatively low intellectual status, and as already intimated, physicians in general are not well equipped to put on record psychic symptoms in detail. Frequently the mental condition and symptoms, which are due to the irritative or distant effects of a cerebral lesion, especially when this is a tumor are not taken into account by the reporter. We believe that if each case of prefrontal disease and especially destructive disease of the left prefrontal lobe, is carefully studied it will be found that mental symptoms of a special character can always be recognized, and that these will be in the domain of the higher psychic activities.

E. Müller, in 1902, published three exhaustive papers on the frontal lobe, his chief object in these contributions being to present the question of the psychic functions of this portion of the brain. His frontal lobe practically coincides with the prefrontal lobe of the writer's—that portion of the brain in advance of the generally accepted motor region and of the graphic and motor speech centers. While he gives details of only one case of his own, he has collected from the literature no less than 164 cases of lesion or disturbance of this portion of the brain, these including tumors, concussion, injuries and other lesions.³

We have only space in this paper to give his most important conclusions, with brief references to one or two points of special interest in his studies, which were not only clinicopathologic, but included to some extent a consideration of facts of physiology, morphology and psychiatry. He asserts, as the result of his studies, that tumors of the frontal lobe need not always cause disturbance of the higher psychic functions, but admits that they do this frequently. He holds that psychic disorders of various sort may result from tumors situated in any portion of the brain. He believes, further, that the disorders of the higher intellectual functions which are so frequently noted in prefrontal lesions, are due, especially in the case of tumors, to the fact that these being in a region latent as regards physical symptoms, the cases remain a longer time under observation, and hence the mental disorders are more frequently studied. He contends that psychic symptoms in cases of brain tumor do not occur alone, but always in association with other symptoms. He does not believe that prefrontal tumors necessarily produce psychic symptoms of a special kind. He does not believe that morbid wittiness (Witzelsucht), which has been advanced by some German writers as a symptom especially depending on disease of the frontal lobes, is to be attributed to lesion or disturbance of this region, his analysis of cases seeming to show that it may occur from lesions in various parts of the brain. In 22

cases of tumors or other lesions involving both frontal lobes cited by him, this symptom was absent. We might remark in passing that although we have seen many cases of brain tumor, a number reaching into the hundreds, this symptom has been extremely rare in our experience.

Schuster,⁴ also in 1902, contributed a paper based on a study of no less than 775 cases of tumor. He found from his analysis that tumors of the callosum always gave mental symptoms; next in order came tumors of the frontal lobes, which gave the same symptoms in 80 per cent. of the cases; tumors of the temporal, parietal and occipital lobes gave psychic disorders in from 54 to 66 per cent., while tumors of the base gave these symptoms in only 25 per cent., and cerebellar tumors in 35 per cent.

Both Müller and Schuster agree that in the majority of instances the prevailing psychic disorders are disturbances of the sensorium, of orientation and of consciousness, the last showing themselves chiefly in hebetude or stupor.

Von Monakow,⁵ in a paper published in 1904, refers to the statistics of Müller, Schuster and others, and discusses the subject from a physiologic point of view, concluding that the physiologic evidence is insufficient to prove that the psychic functions are especially located in the prefrontal portion of the brain. He believes that psychic disturbance may occur from tumors situated anywhere in the cranial cavity. He also agrees with Müller and Schuster that tumors of the prefrontal area need not cause disturbance of the higher psychic functions.

The papers of Müller, Schuster and Von Monakow, like many others of less elaboration written on this subject, are defective in their discussion of the subject, in that clear distinctions are not made as to the character of the psychic disturbances caused by tumors located in various parts of the brain. The chief sources of fallacy would seem to be (1) that sufficient stress is not laid on the fact that owing to the painful and exhausting character of brain tumors, mental disturbances in the broad sense may occur because of the irritation and exhaustion produced by these lesions; (2) it is not clearly brought out that tumors of the posterior association area or concrete memory field of the brain will necessarily cause some disturbances of mentality, especially those in the domain of orientation and in the sensorial field; (3) that tumors anywhere situated may cause mental disorders simply through the disturbance or impairment of association which must result; (4) sufficiently close attention is not paid to the particular point that the psychic disorders caused by prefrontal tumors are especially those of the higher intellectual functions, and that in many of the cases studied the normal mental status of the individual is not properly taken into account; and (5) the fact is not recognized that in tumors situated in one of the prefrontal regions, especially in the right, the individual's intellectual faculties may be largely preserved because of the integrity of the corresponding region of the other side.

We can only arrive at satisfactory conclusions by the closest and most thorough clinicopathologic or clinico-surgical studies of prefrontal tumors.

The following case recently observed is one of unusual interest because of the strict limitation of the lesion to the prefrontal lobe as defined in this paper,

3. Deutsche Zeitschrift für Nervenheilkunde, vol. 21, 22, 1902; Allgemeine Zeitschrift für Psychiatrie, vol. 59, 1902.

4. Schuster, Psychische Störungen bei Hirntumoren, Stuttgart, 1902.

5. Von Monakow, Ergebnisse der Physiologie, vol. 3, No. 2, 1904.

namely, that part of the cerebral hemisphere which is situated laterally and mesally cephalad of a line drawn vertically through the pre-Sylvian fissure, and on the inferior surface of the brain is cephalad of the Sylvian fossa:

X. Y., 71 years old, was a well-known physician who had, up to within a few months of his death, pursued his profession successfully, at the same time taking a moderate part in the management of other business interests.

About two months before his death he was first seen by Dr. Mills, who had been consulted by his son regarding him some weeks previously. His symptoms at this time were all mental, being chiefly exhibited in defects of memory and judgment.

A careful examination was not made at this time, as it was the desire of his family not to have him recognize the fact that his condition was being made the subject of investigation. He had not any paralytic or sensory symptoms, however, and, so far as could be determined by the examination that was made, none in the domain of his special senses. Unfortunately, an ophthalmoscopic examination was not made. His symptoms appeared at the time to correspond to those frequently seen in cases of cerebral arteriosclerosis.

He had frequently put his hand to the left side of his head, as if suffering from uncomfortable sensations, but he did not call attention to any pain or distress in his head by speaking of it.

Shortly after this he was noticed to have a shuffling gait, and later he was unable to convey food to his mouth with any certainty. Soon after he began to have muscular tremors in



Fig. 1.—Photograph showing the tumor as viewed in front, laterally and at the base. *a*, upper limit of the tumor; *b*, recent hemorrhage; *c*, the line of the longitudinal section through the cerebrum.

his hands and legs, much like those seen in paralysis agitans. At first they were on the left side only, but toward the end involved the right side also. They were at first partially under control, and by an effort of will he could stop them; later he could not, and they occurred also during sleep.

About six weeks before his death he had occasional turns of vomiting for about a week; a week later one or two more. These were the only attacks of vomiting he had during the whole course of his disease.

About two weeks before his death the patient suddenly became unconscious, this condition lasting for three days. He then rallied and could be aroused during part of the day and answer questions. The comatose condition gradually returned and he died very quietly with no convulsions or any unusual symptoms.

At our request the patient's son, an unusually observant and well-equipped physician, sent us a description of his symptoms from the time when they were first noted by members of his family. The patient died April 19, 1905. Attention was not particularly directed to any evidence of mental failure until December, 1904, although his son stated that on looking back he felt sure it began much earlier. In the summer of 1903 he seemed to have lost, to some extent, his grasp as a

physician, he having at this period taken charge of his son's practice during the latter's absence on a vacation.

In the summer and fall of 1904 it was observed that he was no longer attentive to the care of his house, he having formerly been particular in this respect. At the table he became more careless, as in carving and carrying food to his mouth. He was indifferent as to what occurred, as when he dropped food on the table or in his lap.

His loss of memory seemed to develop rather suddenly about Dec. 1, 1904. Memory for recent events failed first; he soon forgot his recent patients and would ride about hunting those he had not seen for years. He even made charges in his books to patients who had been dead for years. He never seemed to lose himself, and in his drives about the country within a month of his death he always seemed to know where he was.

A gradual loss of judgment and comparison had occurred after the fall of 1904. When, for instance, his son consulted him about some business matters which he had known all about better than any one else he answered that he did not know and that so and so had better be consulted. A slightly

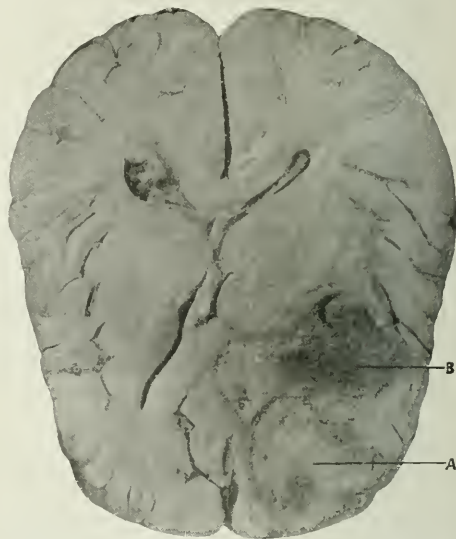


Fig. 2.—Longitudinal section of the cerebrum showing the extent of the tumor in section and also the position and extent of the recent hemorrhage posterior to the tumor; *a*, the tumor; *b*, the hemorrhage.

delusional state developed. This was mostly with reference to medical work. He had an idea that he was very busy, that he was sent for to various places, and he would hurry around to do what he thought was his work. He would stop at all sorts of places, hunting the persons who were sick. In the evening he would try to tell where he had been, but got hopelessly confused. Once he thought for a number of evenings in succession that he had theater tickets and must get ready to go, although scarcely in his life had he been to the theater. On account of his wife's deafness he was in the habit of giving her verbal reports of sermons. During the few months preceding the development of marked symptoms she noticed his accounts were becoming confused, and that he could not give a clear idea of what was said.

Another quite early symptom was change in disposition. He would sit at meals without saying anything, and became exceedingly mild and gentle. His ordinary greeting became unnaturally cordial.

No marked change occurred in writing until about December, 1904, when it became decidedly more careless. Spelling was not affected, although he frequently used a wrong word even a month or two earlier. During December his letters became confused and careless. He would start with an idea and then

become bewildered, and would repeat the same words and phrases several times.

The necropsy was made about twenty-four hours after death. As the body had been carefully injected with formalin, on removing the calvarium the brain in general was found to be in an unusually good state of preservation. On attempting to remove the brain from the skull the anterior pole of the left hemisphere was found to be adherent to the skull, necessitating careful dissection of the adhesions at this point. A small quantity of blood was seen oozing from the left Sylvian fissure at its anterior inferior extremity. It was evident while the brain was still in position that an abnormal mass was present in the left prefrontal region, the brain substance, the membranes and the lesion present not being separable.

The lesion was found to be a prefrontal tumor, which was fleshy in color, hard in consistence and well-defined from the surrounding tissue. Studied from its lateral aspect, the tumor was absolutely prefrontal, occupying the anterior third of the first frontal gyre, the anterior fourth of the second and slightly less of the third. It occupied practically the entire orbital surface and on the mesal aspect the entire area cephalad and ventral of the knee of the callosum; it also involved the callosum itself, the mass projecting toward the other hemisphere. A good idea of the lateral and the anterior position of the tumor is given by the photograph (Fig. 1).

A horizontal section of the entire brain made just below the level of the callosum showed that the growth involved the entire subcortex and cortex of the first and second frontal gyres, but only the orbital portion of the cortex of the third frontal, laterally the outskirts of the growth only reaching to within three-eighths of an inch of the cortex. The tumor extended backward so as to involve the anterior extremities of the caudatum and internal capsule, as shown in the photograph (Fig. 2).

Caudad of the tumor in the Sylvian fissure, a fresh hemorrhage was found, this having destroyed in large part the insula. The nerve cells of the cortex, as shown by the Betz cells in the paracentral lobule, were in a fair state of preservation. Here and there was found a diseased cell, but these were not numerous. In these cells the nuclei were found in the periphery and the chromophilic elements stained diffusely. The pia was of normal thickness. The arteries throughout the entire brain were markedly sclerotic; in fact, they were so much so that at the base of the brain the anterior cerebral arteries pressed upon the optic chiasm, causing the optic nerve on each side to assume a semi-lunar shape. On cross-section the optic nerves showed a slight amount of degeneration. Sections taken from different parts of the cortex and from the oblongata did not show any alterations.

DISCUSSION.

DR. H. A. TOMLINSON, St. Peter, Minn., said that from his own experience in the study of the brains of the defective and demented he could confirm the conclusions presented in the paper. In the defective the most constant variation has been toward imperfect development of the frontal convolutions and the tendency toward perpendicular fissuration, while in the demented there is the shrinkage of the frontal lobes antero-posteriorly and the atrophy of the frontal lobes in front of the precentral fissure. It seems to him that the preponderance of the left prefrontal lobe in the intellectual functions is due to the same causes that influence the motor convolutions. The larger number of impulses that have to be related, inhibited or directed come from the left side of the brain, and especially from the centers of expression on that side. In left-handed persons the converse of this relation will probably be found to be very nearly constant, but not entirely so, because left-handed people are apt to be ambidextrous. Microscopically, the most marked degenerative changes are found in these same areas in dementia and in the associated areas that have to do with expression. His experience has furnished him with what seems to him to be ample negative proof of the truth of Dr. Mills' conclusions.

DR. WILLIAM HOUSE, Portland, Ore., said that these cases are comparatively frequent and he is unwilling to believe that Dr. Mills' recent observations were limited to the one very interesting case presented. Within the past year Dr. House has

seen not less than three cases of lesion of the prefrontal lobes. The first was a bullet wound which had punctured the right side of the brain about the junction of the second and third convolutions, passing through to the opposite occipital region and destroying a considerable area of the frontal cortex. The man lived eighteen months without exhibiting any symptoms, mental or physical, traceable to the wound. This case tends to oppose the contention of the authors of the paper. At the same time in another case in which he was unable to locate the growth during life, although limiting it to the right side, the chief somatic symptoms were weakness of the left side of the body, with increased left patellar reflex. Cerebration was slow and confused, and, in addition, there was loss of expression on the right side of the face, which when at rest presented a singularly blank appearance. The lesion proved to be a cyst of the right prefrontal lobe, and in presenting the specimen before the local society Dr. House called special attention to this evidence of psychic involvement, as it seemed to him that it should have been valuable in localizing the growth. In the third case, the necropsy revealed a large, probably carcinomatous tumor of the left prefrontal lobe. The symptoms included marked mental disturbance, loss of memory, slow cerebration, and confusion. Curiously enough, there seemed at times to be loss of hearing, and at other times marked acuteness, so much so that the patient could hear a whispered conversation in the next room, which he would recall and repeat twenty-four hours later. Dr. House also mentioned a fourth case, seen eight years ago at the Manhattan State Hospital, New York City, in a negro. The most marked mental symptom was a tendency to use large and often meaningless words, which may have been due, in part, to racial predilection. The diagnosis was paresis. The postmortem revealed a huge sarcoma, practically replacing both frontal lobes. Dr. House has seen fifty-four necropsies in paresis and has uniformly observed that in those cases which were markedly of the mental, rather than of the tabetic type, the pathologic process was always most pronounced in the frontal regions. It seems to him there can be no question of the importance of the frontal or prefrontal regions in the performance of the higher psychic functions, but he is at a loss to give a reason why involvement of the right prefrontal lobe, as noted in one of his cases, was accompanied by unusual mental symptoms, while an equally great involvement in another case was accompanied by none at all. He is convinced that careful study of these cases in time must yield definite information whereby neurologists will be able to distinguish lesions of the frontal lobes from those in the other blind regions. In reply to a question Dr. House said that in the case in which the face was involved there was neither a muscular nor an emotional paralysis in the ordinary sense of that word. The impression of blankness was present only when the face was completely at rest and disappeared when the man smiled or moved the muscles of the face.

DELAYED CHLOROFORM POISONING AND ALLIED CONDITIONS.

A NOTE ON THE CAUSE OF THE ANATOMIC AND CLINICAL CHANGES OBSERVED.*

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During the past two years surgeons have been aroused to the importance and frequency of delayed chloroform poisoning, and the literature of the subject has received a number of important additions. This has been so thoroughly discussed in the recent article by Bevan and Favill¹ that it is unnecessary to go into the details of the matter here, beyond mentioning a few of the salient features. The condition rarely results from ether narcosis, but follows chloroform narcosis in probably no insignificant proportion, if we include all the non-fatal

* Presented before the Chicago Pathological Society.

1. JOURNAL A. M. A., 1905, xiv, pp. 691 and 754.

intoxications following operations under chloroform. A period of 10 to 150 hours elapses between the time of anesthesia and the appearance of the symptoms, generally between twenty-four and forty-eight hours. The symptoms are those of a profound toxemia, and in the urine are found organic acids and sometimes amido acids (leucin and tyrosin). At autopsy the anatomical changes are striking, most prominent being degenerative changes in the liver, these changes consisting of vacuolization, swelling, fatty changes within the cells, often much necrosis with evidences of absorption of the necrotic cells. The other parenchymatous organs share in these changes to varying degree, the kidneys usually standing next to the liver in amount of degeneration.

The manner in which chloroform brings about these changes has been one of the many problems of this subject. Are toxic substances that injure the liver and kidney generated elsewhere, or are toxic substances produced in the liver by its disintegration, which then poison the more vital organs? Is it an "acid intoxication" by the organic acids found in the urine, such as occurs in diabetic coma, or are these acids of merely secondary importance? What is the relation of chloroform poisoning to the numerous other conditions that resemble it closely both clinically and anatomically; namely, acute yellow atrophy, phosphorus poisoning, puerperal eclampsia, and many septicemias?

Through recent studies of the chemistry and biology of the cell we have learned certain facts, which, I believe, give us a clear insight into the essential changes underlying the group of toxic disorders above mentioned, and in none of them is the application more direct and clear than in chloroform poisoning. As the facts already at hand seem sufficient to furnish the necessary data for the hypothesis about to be advanced, I venture to state it without at present producing any personally-acquired experimental proof.

Every tissue cell contains a number of enzymes, by the action of which a large proportion of its metabolic processes are carried on. There are enzymes that bring about oxidations; enzymes that maintain the equilibrium between glycogen and sugar; lipase which splits fats and probably also synthesizes them, and also ferments which split up proteids much as trypsin does, although with certain minor differences. The above enzymes we know are in the cells; there are others known that are not so thoroughly studied, and probably there are still many others that are yet to be distinguished. The sum of the action of these enzymes, with perhaps the addition of certain simple chemical reactions between the substances they produce, constitutes the metabolic activity of the cell. If any one set of these actions is prevented the metabolic activity is greatly altered, perhaps with serious consequences.

We know, for example, that when the cell does not receive food, and therefore can not meet its splitting processes by synthesis of new tissue elements, the result is a splitting of the cell structure by its own ferments, e. g., bacteria placed in distilled water undergo self-digestion, or autolysis. Similarly, if we stop in any other way the synthetic processes and still leave the proteid-splitting enzymes in an active condition, these enzymes will digest the cells. Hence if we were to poison the cells with a substance that stopped all the other life processes except the autolytic action, the cell corpses would be disintegrated by their own enzymes.

Now, chloroform happens to be, *par excellence*, just such a selective poison. It is a "protoplasmic poison," if we may use the term, which does not to any extent im-

pede the action of the autolytic enzymes. If we add chloroform to a culture of bacteria the bacterial cells are killed, in that they are unable to multiply or to move about or to take up food and grow, but the proteolytic enzymes within them are still active and unimpaired, and these continue their proteid-splitting action. During life this proteolysis is being met constantly by synthesis, so that the changes balance one another; under chloroform the synthesis ceases while the proteolysis goes on, hence the process is all in one direction and the cell digests itself until its structure is destroyed and its proteids have been broken up into simple nitrogenous substances, such as leucin, tyrosin and ammonia compounds. Just the same thing happens if, instead of bacteria, we have under chloroform a piece of liver tissue, or an emulsion of liver cells; synthesis is impossible because there is no nutriment brought to the cells, and proteolysis goes on, the liver-cell proteids being digested into simple soluble substances.

In chloroform poisoning the process, I believe, is exactly the same. Chloroform is a protoplasmic poison, killing bacteria and unicellular animal organisms when in sufficient strength, merely inhibiting their activities when not concentrated. Its poisonous action is perhaps largely independent of its anesthetic property, which latter seems to be related more to its solvent effect on the abundant lecithin and cholesterol content of the nervous tissues. If the chloroform content of the blood is sufficient certain of the cells are poisoned to such an extent that their synthetic activities cease, while proteolysis goes on. The cells then undergo disintegrative changes as a result, and the products of this disintegration, which are to a greater or less degree poisonous, enter the circulation. Added to these are the toxic substances that accumulate because of the impaired function of the degenerated liver and kidney.

Just what elements of the cell are selectively inhibited or destroyed by the chloroform cannot be definitely decided on the evidence at hand, but I believe that the oxidative ferments are chiefly involved. If the oxidases in a cell were destroyed or inhibited we should expect to get just the changes that we observe in chloroform poisoning. The lipase would act without the normal balancing by oxidative destruction of fatty acid and glycerin, and so we should expect fatty changes, which are prominent features of chloroform poisoning. Synthetic changes seem largely to depend on oxidations and the correlated reductions, hence they would cease; the splitting of proteids would not be balanced by synthesis, and autolysis would occur. Oxidation of products of splitting would cease, and we should look for organic acids to appear in the urine, as is the case in chloroform poisoning.²

The corroborative evidence of the autolytic nature of chloroform poisoning is abundant. First and foremost is its close relation to acute yellow atrophy of the liver and acute phosphorus poisoning, in both of which, as Salkowski, Jacoby and others have shown, most of the changes in the liver are due to autolysis. The only specimens of postoperative chloroform poisoning that I have studied, a typical case since reported by Bayard Holmes,³ presented such a striking resemblance to acute yellow atrophy that the possibility of this diagnosis was considered for some time. In chloroform poisoning leucin and tyrosin have frequently been found in the urine,

2. Although some experimental investigation of the effects of poisons on oxidizing ferments has been attempted, the means at hand for measuring the activity of these ferments are too unreliable to permit of any definite conclusions.

3. Holmes: "Appendicitis," 1904, p. 214.

the cases then usually being reported as "acute yellow atrophy following operation," and these amido acids are undoubtedly the product of autolysis of the liver. If the urine had been examined more often chemically, instead of merely microscopically, there is little question that these and other amido acids would have been found quite constantly, as they are in acute yellow atrophy and phosphorus poisoning. Furthermore, in a case of chloroform poisoning resembling clinically acute yellow atrophy, Taylor⁴ found 4 grams of leucin, 2.2 grams of tyrosin and 2.3 grams of arginin (nitrate) in the liver.

The appearance of organic acids in the blood and urine in chloroform poisoning, which is so prominent that some cases have been reported as "acid intoxication following chloroform anesthesia," agrees fully with our hypothesis, for Magnus-Levy⁵ has found that such acids are constantly produced in livers that undergo autolysis outside the body under chloroform or other similar antiseptics. Their appearance is probably due to lack of oxidation, which under normal conditions of metabolism destroys them. Since Wiener⁶ has shown that autolysis occurs much more rapidly when the reaction is slightly acid than when it is neutral or alkaline, the presence of these acids is probably an important factor in the autolysis of the liver cells in which they are formed.

The relative harmlessness of ether agrees also with relatively slight poisonous properties; its anesthetic property is, as with chloroform, probably related to its solvent effect on the lipoids of the nervous tissues.

The predisposing causes of chloroform poisoning, as given by Bevan and Favill, also point to reduced oxidation as a prominent factor; e. g., diabetes, hemorrhage, wasting diseases, etc. The preventive influence that oxygen is supposed to exert is also referable to the same condition.

That children seem more often affected, "the younger the more susceptible," may be correlated with Schlesinger's⁷ observation that the autolytic power of the liver is greatest in young children.

Presumably the liver is most affected because it is the site of the most active autolysis and oxidative processes of the body.

The latent period between the time of the administration of the chloroform and the onset of the symptoms agrees with numerous observations to the effect that there is a latent period between the time an organ is removed from the body and the beginning of its autolysis, to which must be added the time required for the accumulation of toxic materials in sufficient quantity to cause symptoms.

SUMMARY.

Chloroform poisoning, in common with a number of closely-related conditions characterized by intoxication and marked changes in the liver (acute yellow atrophy, phosphorus poisoning, certain septicemias, and some cases of puerperal eclampsia) probably all depend on the effect on the liver of poisons that destroy the synthetic functions of the liver cells without destroying their autolytic ferments. Autolysis of the liver cells follows, with resulting alterations in the liver structure, and the appearance of products of autolysis (amido acids and various other organic acids) in the blood and urine. It is probable that in chloroform and in phosphorus poisoning, at least, it is the oxidizing enzymes that are particularly involved, accounting for the marked fatty changes that are present in these conditions.

CHORIONEPITHELIOMATOUS PROLIFERATIONS IN TERATOMATA.

ESPECIALLY IN THOSE OF THE TESTICLE; WITH THREE NEW CASES.*

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(Continued from page 256.)

3. HYDATIDIFORM PROLIFERATIONS IN TERATOMATA.

CASES IN THE MALE.

The preceding cases, many of them consisting of testicle tumors in which chorionepitheliomatous proliferation with teratomatous elements are demonstrable, are sufficiently numerous, similar and well authenticated to be accepted as a distinct and recognized variety of tumor. Schlagenhauser has, in addition, described what he considers a modification of these neoplasms, which bear a similar relation to chorionepithelioma of the testicle that hydatid moles bear to chorionepithelioma of the uterus. This author has personally reviewed the case reported by Karl Breus⁷² in 1878, and re-examined the material, also collecting five cases from the literature. All these cases have certain features in common. A primary testicle tumor is present in all; in most of them the testicle tumor is evidently a teratoma; in one only (Breus' case) do parts of the metastases resemble chorionepitheliomatous tissue. In all, metastatic extension into the large veins has taken place, usually reaching as far as the heart. The intravascular growths show, macroscopically at least, a striking resemblance to hydatid mole. If this resemblance is to be accepted as more than a merely superficial similarity, the microscopic findings must coincide with the picture seen in hydatidiform degeneration of the chorion, particularly in regard to the appearance and behavior of the ectodermic covering. In order to discuss this question, which has certain important theoretic features, a review of these cases is necessary, but as both Schlagenhauser and Risel give a full review and no new cases have been added, a condensed account will suffice.

Although not the first in point of time, it is well to consider Breus⁷² case, as reviewed by Schlagenhauser, before the others.

The autopsy showed a large testicle tumor in a man of 40. The tumor in addition to sarcomatous and carcinomatous portions contained cysts of diverse structure. The cord had attained the size of a thumb. Its dilated varicose veins were filled with narrow strands which could be traced into the internal spermatic vein and from it into the inferior vena cava, where the strand was 1.5 cm. in diameter, and had numerous club-shaped appendages.

In the lungs many large and small metastases were noted, the new growths being composed chiefly of syncytial forms with occasional scattered Langhans cells. According to Schlagenhauser the nodules should be regarded as villous emboli. Small branches of the pulmonary artery contained thrombi similar to those to be described below. In the left auricle, starting from the fossa ovalis, was a slimy, grapelike vegetation comparable to an hydatid growth. The small transparent masses had a more opaque center. In the right heart a similar picture was noted, but here the mass was directly continuous with a strand of the thickness of a finger, projecting into the inferior vena cava and forming a skein which filled the entire chamber and projected through the open foramen and into the left heart. The intravascular growths as-

4. Univ. of Calif. Public. (Pathology), 1904, vol. 1, p. 43.

5. Hofmeister's Beitr., 1902, 2, p. 261.

6. Centr. f. Physiol., 1905, vol. xix, 349.

7. Hofmeister's Beitr., 1903, vol. iv, 87.

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sumed a complicated glove-like form composed of myxomatous and fibrous tissue covered by an epithelium which resembled both the Langhans and syncytial type. Within the grape were cysts clothed with cubical and cylindrical epithelium.

His conclusions are:

1. The primary tumor is a teratoma.
2. The grape-like vegetations are in part equal histologically to an hydatid mole.
3. The lung metastases are the result of villous emboli, and where the epithelial covering has proliferated, a chorionepitheliomatous tissue has been formed.

Summing up, he considers this case and the four others yet to be discussed as teratomata in which an hydatid-like proliferation within the vessel has taken place because the fetal membranes or their rudiments have undergone an intravascular hydatidiform degeneration. To account for this change occurring not in the primary but only in the intravascular portions of the growth, Schlagenhauser assumes that the ectodermal elements are here in a physiologically favorable condition, as, in a normal pregnancy, the fetal ectoderm physiologically has the property of invading the blood vessels. In the blood spaces the syncytial masses predominate, for it is their chief function to supply nourishment to the rest of the cells by osmotic processes.

Waldeyer⁷⁷ reported his case as a myxo-chondro-sarcoma. In the spermatic cord hyaline, worm-like structures, attached by pedicles to the vessel walls, occupied the veins. The covering epithelium of these "hydatids" was continuous with that of the vessel walls and in spots was "heaped up" as if to form new pedicles.

Silberstein's⁷⁸ case showed intravascular structures similar to those in the case of Schlagenhauser. The myxomatous groundwork of the grapelike formations contained cysts lined with epithelium. The testicle tumor probably was a teratoma.

The testicle tumor described by Kanthack and Pigg⁷⁹ was evidently teratomatous. The enormous glandular metastases contained many cysts. In the great venous trunks and heart the hydatid-like growths were composed of fairly firm fibrous tissue and enclosed epithelial lined cysts.

MacCallum,⁷⁶ according to Risel⁸⁰ (p. 135), no longer regards the tumor he reported a lymph-endothelioma of the testis. The primary tumor may possibly belong among teratomata with very unequal development of the fetal layers. The widely distributed intravascular growths (re-examined by Risel) show a myxomatous groundwork, a cellular covering, continuous with that of the vessels, and cystic structures within the grape. Nowhere is chorionepitheliomatous tissue in evidence.

DISCUSSION BASED ON THE PRECEDING CASES.

Of all the cases, Breus-Schlagenhauser's should be most seriously considered. More important than the main intravascular growths are the small villous thrombi from which he directly traces chorionepitheliomatous nodules. If these findings are accepted, they would correspond exactly to the pictures seen in the metastases of a malignant hydatid mole. Risel⁸⁰ (page 132) objects to a genetic or even morphologic identity with these structures, claiming—undoubtedly with justice—that simple myxomata (two cases of Marchand) can assume hydatid-like forms within the large blood vessels through purely mechanical causes; but this fact would not necessarily exclude the possible occurrence of true hydatids under similar conditions. A stronger argument against the claims of Schlagenhauser is the presence of minute cysts, and not sharply circumscribed cell complexes, within the grape-like masses, and also the fibrous, more often than myxomatous, stroma, which

lends weight to the assumption that these intravascular metastases have no greater specific significance than the teratomatous metastases in Steiner's or Hansemann's cases. Schlagenhauser represents the epithelium covering the villi, in his case, as of both the type of Langhans' and syncytial cells. The mention of a "heaping up" of the covering epithelium (Waldeyer) might be regarded as the plasmodial buds seen on normal villi. I am unwilling to assume as positive a stand against Schlagenhauser as that taken by Risel, especially as the case of Pick, immediately to be discussed, must also be considered; but, on the whole, the burden of proof still rests against the assumption that hydatid growth occurs in teratomata.

If we accept Schlagenhauser's view, the theoretical deductions justified in regard to the genesis are not far-reaching. To assume that the presence of degenerated fetal membranes would point to a derivation from an impregnated pole cell instead of from a blastomere is not warranted, as was pointed out by Pick, Steiner, etc. If subsequent observations confirm the findings of true hydatidlike growths it will merely afford another proof of the specific nature of the ectodermal growth, which shows so many characteristics, both physiologic and morphologic, of the chorionepithelium of pregnancy.

HYDATID DEGENERATION IN A TERATOMA OF THE FEMALE.

The most interesting and also most convincing case bearing on this subject and corresponding to a non-malignant hydatid in a teratoma, is the one described by Pick,⁷⁷ but in this instance also a reasonable amount of doubt remains, and further confirmation will be required to set the question at rest.

On opening the abdomen of a woman of 30, who was operated on for ectopic gestation, in addition to the tube, which contained a few chorionic villi, a dermoid was discovered. The dermoid was typical of its kind; but within a subsidary cyst of some size and completely separated from the rest of the growth as well as from the ectopic sac, were numerous hydatid bodies, which in both their gross and microscopic morphology corresponded to intrauterine hydatidiform degeneration of the chorion.

In discussing this case, Pick believes that the origin of the hydatid from the tubal pregnancy can be absolutely excluded. The growth is separated everywhere by a fibrous cyst wall; the formation is old; the tubal pregnancy recent. He regards it as a part of the original dermoid "anlage," a closed portion of the membrana chorii, the cyst as a portion of the intravillous space filled with serous fluid instead of blood. This case, in Pick's opinion, confirms Schlagenhauser's thesis, except that the question of a pole cell vs. blastomeric origin can not be decided by this or similar observations. What it does show is that Marchand's view, that a congenital anlage arises at the earliest formative stage, is correct.

With Risel, I hold that this case is open to some doubt. If the early tubal pregnancy had not produced the hydatid formations, this by no means excludes an origin from a previous pregnancy, or unnoticed abortion, by a blood channel later obliterated. It may be objected that a limitation of such metastases to one spot, and, at that, to such an inaccessible one as the center of a dermoid cyst, is inconceivable. I will acknowledge that it is unlikely, impossible it is not. Further evidence is necessary finally to settle this question.

4. CHORIONEPITHELIOMATOUS PROLIFERATION IN TERATOMATA ELSEWHERE THAN IN THE GENERATIVE GLANDS.

The chorioneplitheliomatous proliferations so far dealt with have all, with the exception of Boestrom's case and perhaps my third case, had their origin from the generative glands. Boestrom has not, as far as I know, conclusively shown that the testes were normal, and, as no teratoma of the brain was found, the case is therefore incomplete and can not be classified with any certainty. Bearing the genesis of these tumors in mind, we might expect to find a chorioneplithelioma wherever teratomata occur, as first suggested by Schlagenhauer, and a few observations on record fulfill this expectation.

The case mentioned by Albrecht,⁸ in which the epithelium lining the branching ducts in a teratoma of the liver closely resembled chorioneplithelium, is reported with too little detail to permit the forming of a serious judgment. Judged, however, by what this author says, his assumptions are not justified.

The most convincing and unique case of chorioneplitheliomatous proliferation outside of the generative organs (except that of Djewitzki, which will be next considered and in which no teratoma was found), is Ritchie's.⁷⁹ This case was also examined by Teacher,¹⁰ who vouches for the chorioneplitheliomatous nature of the growth.

In a man 24 years of age, who died of a malignant tumor of the anterior mediastinum, a large neoplastic mass was found jutting from the root of the left lung. The mass was partly cystic and partly solid. The large cyst contained the usual dermoid constituents—hair, sebaceous glands, epidermoid structures, muscle, etc.—and was in direct continuity with the solid part of the growth. The solid portions proved typical chorioneplithelioma. The numerous small nodules scattered throughout the lung were of identical composition.

The description is that of a true chorioneplithelioma from a teratoma. The illustrations of this paper bear out this contention. As good a judge as Teacher agrees with the findings. The teratoid nature of the growth is apparent even if ectoderm was not found. This case appears conclusive and incontrovertible evidence in favor of the occurrence of chorioneplithelioma elsewhere than in the generative glands.

Djewitzki⁸⁰ reports a case of chorioneplithelioma of the bladder, which also appears convincing, but has not quite the value of the previous case.

A virgin, 75 years of age (menopause twenty years previous), was cured for hemorrhage. The curettings showing hypertrophic endometritis due to fibromyomata. Death from cardiac failure permitted an autopsy. At this was found metastases in the lungs, bronchial glands, spleen and sigmoid, arising from a small nodular tumor situated immediately beneath the mucous membrane of the bladder. All the tumors were typical chorioneplitheliomata; no teratoma was found. The uterus contained only the fibroids previously diagnosed.

Djewitzki scouts the idea of a teratoma with overgrowth of the other constituents by the chorionectoderm. As a possible genesis, he suggests carrying along some of the cloacal ectodermic cells by the Wolffian duct. Another alternative he offers is the reversion to an embryonal type, or *entdifferenzierung* of the bladder epithelium.

The extreme age of the patient makes any connection with a possible concealed or denied pregnancy unlikely. A latent period of twenty or more years has previously been unknown. That the author has overlooked teratomatous constituents in his examination of the tumor is possible, or that such tissues were obliterated is also

conceivable. I am inclined to regard this case, with the slight reservation already mentioned, as another instance of chorioneplithelioma in the relation of consanguinity (in the sense of L. Pick) to its host. The extremely long latent period of nearly seventy-five years is in strong contrast with the usual course noted in tumors, which are classified as congenital.

5. A DETAILED DISCUSSION OF THE MORPHOLOGY AND OF THE THEORETICAL BASIS OF CHORIONEPITHELIOMATOUS TUMORS.

HISTOGENESIS.

The foregoing has shown that a certain number of tumors of the testicle, also a tumor of the mediastinum, and one of the bladder, which bear a close resemblance to the chorioneplithelioma of the female, are on record. Since Schlagenhauer published his views on the significance of these growths they have been classified as chorioneplitheliomata. Where in direct connection with a teratoma and where the typical characteristics of the growth are well developed, but little difficulty will arise in recognizing their nature. Their recognition will become correspondingly difficult when teratomatous constituents can not be demonstrated (as in my first case), and where, through unknown causes, deviations from the so-called typical type of Marchand appear. In such cases it would be desirable to have one or more distinctive or pathognomonic characteristics in mind to decide the question; and we now must try to determine whether such exist.

As has just been stated, the embryonal nature of the tissue can often be shown by its occurrence in a teratoma. Its ectodermal origin has been conclusively proven in a number of cases—in Pick's ovarian teratoma in a girl of 9 years, in Risel's case, in both of which the syncytium was in direct continuity with neuroepithelium, and in my own Case 2, in which the cells of Langhans type were continuous with the epidermis, and then diffusely invaded the stroma, gradually, but without a break, merging into the papillary and atypical type of chorioneplithelioma. This continuity proves merely that we are dealing with an embryonal ectodermic tissue, but does not show that the cells are specifically chorioneplithelium. To look for such highly specialized characteristics as the hair found in the epidermis, or the nerve cells found among the brain substance of embryos, would be futile, for the chorioneplithelium is a primitive tissue, and normally never reaches a higher stage of development.

SYNCYTIUM, ITS VALUE AS A DISTINGUISHING MARK.

At one time it was supposed that the syncytium would prove a sufficiently specific structure to assure the diagnosis, but subsequent observations have inclined some authors to doubt this. In the first place, the term syncytium has been very loosely employed. According to Bonnet,⁸¹ multinuclear protoplasmic masses should be divided into plasmodia, masses which have not yet undergone subdivision; syncytia, composed of a fusion of pre-existing separate cells; and symplasma, or cells which are undergoing a degenerative process during which, at a certain stage, a real or apparent fusion exists. In pathologic material we are unable to decide whether we are dealing with the first or the second, and as far as chorioneplithelioma is concerned, this is of no significance if we accept Marchand's view that syncytium and Langhans' cells are merely an expression of various functional activities of the villous covering; we even do not know which is the first to appear in the human

embryo. Symplasma should be recognized by the degenerative changes, most readily appreciated in the nuclei, where they take the form of fragmentation, pyknosis, etc.

The most typical syncytium has a deeply staining homogeneous protoplasm, with well-preserved and numerous nuclei, vacuoles often containing red blood cells, and, under favorable conditions, a ciliated margin (Pick, Wlassow, etc.). Syncytial formations have been found in various inflammatory conditions, such as pneumonia and nephritis (Aschoff⁸²), in carcinomata and endothelioma (Recklinghausen⁸²), in adenocarcinomata gigantocellulare of the liver (Babes⁸³), in the uterine mucosa in ectopic gestation (Schmidt⁸⁴), etc., which seems to rob them of much of their specific or diagnostic value. Another possible source of error has been pointed out by Sternberg,⁸⁵ who showed that material preserved in formal-Müller lost some of the sharp cell outline, and consequently could simulate syncytium; but this artefact would still be unable to account for typical arrangement, etc. A careful study of thin sections stained by various methods will often show a tissue to be composed of discrete cells, which in thick sections or to cursory examination will appear fused and syncytial. Whether the syncytia or giant cells described by these various authors really ever so exactly correspond to or simulate the syncytium of true chorionepithelioma, with its cytologically distinctive marks (vacuolization, ciliary margin, etc.), I hesitate to affirm.

I have a tumor of the arm from a man of 77, which is a polymorphous-celled carcinoma composed of large, often polynuclear cells, which resemble syncytium, but yet do not answer to all the characteristics which should be considered necessary. Such a tumor should not be classed as a chorionepithelioma, but, on the other hand, should also not be used as a possible proof against the specific nature of syncytial formations.

DOUBTFUL TUMORS.

The tumor of the liver described by Marx⁸⁶ gives the impression of being a chorionepithelioma; whether primary or secondary must be left undecided; that of Michel certainly must be considered of chorionepitheliomatous nature (or chorionectodermal, to employ the nomenclature of Pick, who subjects it to a convincing critique⁸⁷). Neither of these articles offers any evidence against the doctrine of chorionepithelium in teratomata.

Sternberg⁸⁸ recently reported a tumor of the testicle in a man of 26, which caused metastases in the liver, lungs and retroperitoneal glands. Both tumor and metastases were composed of light cubical cells about the capillary blood vessels, and of syncytial masses in close connection with the vascular endothelium. He classifies this tumor as a sarcoma in the sense of Malassez and Monod with vasoformative function, without supplying any new facts, except that he claims to have found syncytium arising from the maternal endothelium in young human embryos. Sternberg concludes that many, if not all, so-called chorionepitheliomata in teratomata are sarcoma or endothelioma. In the discussion which followed no additional facts were brought out. It will be of interest to see whether the promised fuller report will prove more convincing.⁸⁹

CHARACTERISTICS OF THE NORMAL TROPHOBLAST.

But for the sake of excluding all sources of error, let us set aside syncytium as a pathognomonic structure. We then fall back on certain general or group characteristics to distinguish the chorionepithelium. It is true that the further the tumor tissue departs from its normal prototype the more difficult and questionable will its recognition become. It is by a careful study of the normal covering of the villi and of the chorionepitheliomata

of the female, in direct connection with pregnancy, that we can alone hope to recognize the similar tumors, independent of gestation, arising from a teratomatous growth.

The normal trophoblast shows three varieties of cell forms—the Langhans type or zellschicht, the so-called chorionic wandering cells, and large plasmodial or syncytial bodies. Even in the chorion of pregnancy these constituents vary in their numerical relations and arrangements, not only during different stages of pregnancy, but also in individual cases. These variations become more marked as we turn to the pathologic formations, such as hydatids and chorionepitheliomata. The normal trophoblast shows certain physiologic properties (morphologically recognizable), which distinguish it from other normal tissue (unless we except the single instance of the erosive action of the osteoclast during normal bone processes), in that it invades the structures of the uterus and erodes them. This invasion, though physiologic, corresponds exactly to the invasion of malignant tumors, although usually, unlike these growths, it reaches a definite end. But in the malignant neoplasms of pregnancy—hydatid and chorionepithelioma—the process goes further, boundless and destructive proliferation results, with ultimate harm to the whole organism. This erosive action of the normal chorionectoderm follows along certain well-defined lines. The cell columns invade the decidua and also muscular tissues after the type of a carcinoma, or more diffusely so as to simulate sarcoma, sending the active chorionic wandering cells far into the structures of the host. These cells appear attracted by the blood vessels, erode their coats, creep along beneath the vascular endothelium, finally entering the lumen and causing perivascular hemorrhages. As the rapid increase in number of cells is not accompanied by a corresponding, in fact, by any, formation of new vessels, the tissues would at once be subject to lack of nutrition and consequent necrosis, were not some osmotic or other transfer of nutritional substances possible. This osmotic function would seem to be attended to by the large syncytial sheets or surfaces which, according to Bonnet, not only where in direct contact with blood, but also when more distantly removed, show a hemoglobin contents, in distinction to the other trophoblastic cells, which show such blood pigment only at their edges, where postmortem diffusion might account for it. Hofbauer⁹⁰ has actually shown the loosely combined iron in the basal layer of the syncytium, and has followed it into the stroma of the villus.

In the pathologic forms already referred to, necroses form a large part of the tumors, as the vascular supply, especially in the metastases, is often insufficient; wherever, however, the blood supply is abundant and readily reached, as in the liver and lungs, the metastases show well-developed and prominent syncytial forms. In addition to the characteristics so far brought forward, the chorionectoderm appears to exercise a destructive (lytic, if I may call it so) action on neighboring cells independent of pressure necrosis, and accompanied by the extensive formation of fibrin, which last may very possibly be traced to the hemorrhages.

To recapitulate, the normal trophoblast is composed of three cell forms, which proliferate rapidly, invade the blood vessels, cause hemorrhages, necrosis and fibrin formation, and having fulfilled their function during gestation show no further malignant properties. These same cells appear in the malignant growths of pregnancy, evince the same properties, but fail to stop be-

fore causing harm to the host. Once having entered the blood vessels, rapid and fatal metastases occur, metastases often faithfully copying the primary growth. Such tumors, whether they assume the typical or atypical form of Marchand, are recognized and accepted when in direct connection with pregnancy, partly because of this relationship, partly because they so faithfully copy the normal trophoblast. Were we to analyze each cell, nothing more characteristic would be arrived at than the analysis of a single cell taken, let us say, from a carcinoma or from a sarcoma. Again, no one property here mentioned is strictly limited to this form of growth. Sarcomata are often hemorrhagic, carcinomata metastasize through the blood vessels (Goldmann,⁹¹ etc.).

Such properties as the glycogen contents of the Langhans cells are shared by many varieties of growths, although Lubarsch⁹² is inclined to consider it a sign, though not a sure one, of the embryonal derivation of a tumor. Attempts to use the size, by actual measurement, of a cell or its nucleus, as a means of comparison or identification, are, of course, of uncertain value.

"TYPICAL" AND "ATYPICAL" FORMS OF MARCHAND.

The description given by Marchand of the two main types of tumor found in connection with pregnancy is so excellent and applies so well to chorionepithelioma in teratoma, that I will quote it in full.

"Those cases are typical in which the characteristics of the chorionepithelium which appear in the first period of gestation are represented, with no or but slight variation. They show well developed, continuous syncytial masses of the form of irregular, multinuclear strands and branching protoplasmic processes, and with more or less well developed and numerous transparent polyhedral cells of the structure of the zellschicht. Whether the Langhans cells can be wholly absent, as has been described in some cases, I am by no means certain. If they are not found in some spots, that is no proof that they are completely wanting."

"Those cases are atypical in which everywhere, or at least almost everywhere, the chorionepithelium has lost its peculiar normal grouping, and occurs only as isolated cells, which may show various forms. The cell masses which form the surface and inner layers of the decidua serotina (basalis) in hydatid mole may be taken as an example or pattern of these forms. The cells rarely show the habitus of the delicate, transparent membranous and sharply circumscribed zellschicht elements, with regular, oval nuclei, frequent mitoses and glycogenic cell protoplasm. More often their habitus is that of compact, more deeply staining and very irregularly shaped cells, with nuclei varying greatly in size, sometimes attaining enormous proportions and showing intense and often equal staining properties, which allow the recognition of their syncytial character. These elements may form multinuclear aggregates, but in many cases no large syncytial masses develop. Transitions between the two chief varieties may occur if, here and there, larger syncytia are formed."

VARIATIONS FROM MARCHAND'S TYPES ENCOUNTERED IN TERATOMATA.

Further on in the same article, but without emphasizing this point as markedly, Marchand says: "Tumors of the chorionepithelium may show certain resemblance with ordinary carcinomatous tumors." In the testicle particularly, this large alveolar type may predominate, the chorionepitheliomatous type cropping out at some small spot or first becoming manifest in the metastases. The testicle tumors described by Ribbert⁹³ (p. 619) impressed Pick as probably chorionepithelioma, and their further study might show typical formations. The growth described by Askanazy⁹⁴ and my own Case 2 vary still further from the accepted types of chorionepithelioma, as the Langhans cells line cystic and papilliferous configurations hardly even suggestive of the group under

discussion, but betraying their true nature by entirely typical spots which are in direct continuity with the papillary formations. Lately, Pick⁹⁵ has reported a case of carcinoma of the liver in a female, which he claims is a true chorionepithelioma because of its morphologic characteristics. His explanation is based on the theory that this apparently simple tumor is a teratoma with its other tissues undeveloped. Although far from denying the possible truth of his conclusions, the proof offered in this or in similar observations, if more should be forthcoming, is very weak unless we accept the group characteristics previously discussed as sufficiently convincing, even when unaccompanied by a demonstrable teratomatous origin. It is also tempting to generalize and use such a case as an argument for the embryonal derivation of all tumors (or the converse, as an emphatic proof against their parasitic origin, as Pick has done).

IS CHORIONEPITHELIOMA A "SPECIFIC" TUMOR?

There is another possible aspect of the discussion to which I turn with great hesitation, as it involves not only the debatable question of metaplasia, but also the "specificity" of chorionepitheliomatous tissue. We have seen that syncytium and Langhans cells, or at least structures morphologically their equivalent, in direct continuity with unequivocally ectodermal tissues, have been noted by Pick, Risel and myself. Pick and Risel both regard this fact as a proof that the anlage from distinct fetal membranes, such as Schlagenhauser has assumed, is not a requisite. Why not generalize still further, as Lubarsch⁹⁴ has done, and consider it merely as an evidence of a metaplastic change of any embryonal ectodermic structure, which under certain unrecognized conditions is capable of producing this variety of tumor tissue, just as in response to other stimuli it undergoes carcinomatous changes or degeneration (Taufier,⁹⁴ Yamagawa⁹⁵). By this view we would regard the chorionepithelioma as a secondary malignant degeneration of a teratoma, or, where no teratoma is found, a degeneration of the tumor "*Keim*," which gives rise to chorionepithelioma or carcinoma, depending on the nature of the stimulus. Against this view only one valid argument can be advanced, but it is of almost overwhelming force, and that is the coincident metastasizing of other teratomatous constituents. To explain the composite metastases various hypotheses have been offered (see above), the most plausible being the carrying into the circulation of tumor cells which are closely related to, or the equivalent of, blastomeres, and therefore able to differentiate into all three embryonic layers. As in the resulting composite metastasis, the chorionepithelium is again the only actively "malignant tissue," we must assume that the stimulus causing this excessive proliferation is general and evenly distributed within the organism so as to act on the newly formed metastasis at this new site, which is unlikely; or that the blastomeric metastasizing cell contains among its other potentialities that of forming chorionepithelium, which therefore again attains the dignity of a specific tissue.

It would seem, therefore, that this way of regarding the question, and it is not as an advocate of either metaplasia or anaplasia that it has been suggested by me, but merely as a possible train of reasoning, offers no further light on the subject and, in fact, leads us back directly to the other hypothesis. It does, therefore, strengthen, in a negative way, the conception of chorionepithelium as a specific type of tissue, as an integral part of the teratoma, and not merely as an accidental conglomeration of cells, which bear a superficial resem-

blance to the trophoblast through some vagary of growth. Of still greater and, in fact, of decisive value would be a convincing case of hydatid proliferation in a chorion-epithelioma; for if the chorioneplitheliomatous tissue is shown to undergo the same degeneration as the tissues of the true chorion in pregnancy, no one could deny its exact and specific equivalency. As yet the case of Breuss-Schlagenhauser is the only one which approaches this requirement, and as long as these hydatid-like forms are still under suspicion of being a merely accidental imitation due to physical forces, it can not be used in evidence.

6. CLINICAL ASPECT AND SYMPTOMS OF CHORION-EPITHELIOMA OF THE TESTICLE.

Of the 22 above-cited cases, including my own, the 4 cases of Wlassow are without any clinical data. Schlagenhauser's has but very scanty observations; Schmorl's Case 2 at the time it was reported was too recent to be of service. Likewise my own Case 2. In Steinhaus' case and my Case 1, the subsequent course could not be ascertained; consequently, only 13 cases can be utilized in trying to present the course of this variety of tumor. Boestrom's case and my Case 3, respectively, presented the symptoms of a tumor of the brain and tumor of the mediastinum, without a primary neoplasm of the testis being convincingly excluded.

The youngest patient was 16 years of age, the oldest 43; but the great majority were found in young adults in the early twenties. As the local testicle symptoms were absent or at most consisted of enlargement of one testis with very slight pain, the patients more often presented themselves on account of abdominal symptoms due to the metastases, and when all hope of a radical cure had passed.

The average duration of the disease can not be accurately determined, for the patients were unable to state when the testicular enlargement had begun, or in some cases this enlargement was never sufficient to attract attention. The longest duration was that of my Case 1, in which the testicle had been appreciably increased in size for two years. Probably the usual course will be found to be less than twelve months. Trauma was repeatedly followed by a sudden increase in size and the appearance of the metastases.

The symptoms varied greatly, but, except for such local discomfort due to the testicle tumor, which in a few cases reached the dimensions of a child's head, were confined chiefly to the abdomen and lungs. The retroperitoneal glands along the iliac fossa, and those situated higher up along the aorta, caused intestinal and stomach pressure symptoms. In one case only was jaundice noted; in several others the liver palpated, greatly enlarged and nodular. A transient edema of the leg followed operation in the case described by Carnot and Marie. Cough, dyspnea, blood-streaked or bloody expectoration were almost constant terminal symptoms, readily accounted for by the frequency of the lung metastases. The high fever in my Case 3 was probably due to necrotic mediastinal and lung tumor masses; in Scott and Longscope's patient the symptoms on admission were those of a tubercular pleurisy. The involvement of the kidneys was never manifested clinically. Riesel's Case 2 had a transverse lesion of the cord due to the pressure of the metastatic tumor tissue. Toward the end, loss of weight and general cachexia were prominent symptoms in all.

Clinically, chorioneplitheliomata of the testicle, therefore, show no very distinctive course. Like other malig-

nant tumors of these organs, they are rapidly fatal; metastases, both in near and in distant organs, occur early and usually are too far advanced when first seen by the surgeon to permit of a radical cure.

7. SUMMARY OF OBSERVATIONS AND DEDUCTIONS BASED ON THEM.

1. In the female, direct continuity of malignant and non-malignant hydatids and of true chorioneplitheliomata with the epithelial covering of the fetal villus has been repeatedly observed, thus proving these tumors to be composed of fetal ectoderm.

2. A similar continuity of tissues has been noted in the covering of deported villi, which acted as the starting point of metastases, arising from hydatids or chorioneplitheliomata. This affords additional proof that the metastases are likewise derived from the fetal ectoderm.

3. Theoretical considerations point to the similarity of the embryologic processes which produce the normal fetus and the embryoma or teratoma. The theory of Marchand and Bonnet traces the origin of these growths from impregnated pole cells or early blastomeres, which are liberated from the cell complex, remain latent for a longer or shorter period, and then, in response to as yet unknown stimuli, resume their growth with the still inherent property of forming all the structures found in the normal embryo.

4. The resulting tumors, genetically the twin of their host, may be highly complex, imitating the normal embryo in a startling fashion; or very simple, so that they afford but little clue to their teratomatous origin (single tooth, thyroid tissue, etc.). Transitions between the complex (embryoms, teratomata, dermoids) and simpler forms (bidermoids, mixed tumors, etc.) can be traced (Bonnet). Such teratomatous growths have been found in the ovary, testis, retroperitoneal space, mediastinum, brain, sacral region, etc.

5. Among the tissues found in these tumors, ectodermal structures often take a leading part. Neuroepithelium, skin and chorioneplithelium have been found in direct continuity surrounded by the most diverse tissues. Wherever teratomata occur chorioneplithelium may be looked for (though, of course, it does not occur in the majority of cases).

6. Consequently, these ectodermal structures are of equal significance, and it becomes unnecessary to assume a separate anlage of fetal membranes to account for the presence of chorionectoderm.

7. To the chorionectoderm, in teratomata, one must also accord a distinct and specific significance, like that accorded to a special tissue such as skin or brain substance, because in most of the recorded cases it shows all of the characteristics of the trophoblast of pregnancy. These characteristics are not only morphologic (the three types of cell forms—Langhans cells, syncytium, chorionic wandering cells—absence of vessels, etc.), but also physiologic (vaso-destruction, fibrin formation, glycogen production).

8. As in the chorioneplitheliomatous tumors in direct connection with pregnancy, the chorionectoderm in teratoid tumors also assumes atypical forms, which render its recognition difficult, and perhaps, in some cases, impossible.

9. These atypical forms may present a tissue similar to the so-called atypical form of Marchand, or, as the result of an excessive growth of Langhans cells, a more diffuse alveolar carcinomatous, papillary, cystic, or perithelial arrangement may be found.

10. The true nature of these atypical forms of tumors

can be recognized by discovering teratomatous constituents and typically chorionepitheliomatous portions, in direct continuity with, or in gradual but unbroken transitions to, the less characteristic parts.

The foregoing chain of evidence is not weakened by the arguments advanced by certain authors. Granted that synectium is not confined to chorionepithelium alone (although typically foamy synectium with vaso-destructive tendency and ciliary margin has not been found elsewhere), the recognition of chorionepithelium is not based on any single morphologic fact! True to its prototype in normal gestation, the chorionepithelium evinces a high proliferative activity, shown not only in the primary tumor, in the simple metastases, but appearing also in the composite teratomatous metastases, in which it again forms the "malignant" element.

To expect the chorionepithelium to differentiate into higher tissues, like the other tissues dating from "the earliest anlage" of the teratoma, is as reasonable as to look for a similar differentiation of the placental tissues, which are also examples of cells derived from "the earliest anlage," and which nevertheless retain their early embryonal characteristics throughout the long period of gestation.

In order to interpret the close connection of the chorionepithelial tissues as a "vasoformative" function and to derive their genesis from the endothelium of the blood vessels (as was done by Malassez and now again by Sternberg), it is necessary to ignore their direct continuity with certain undoubtedly ectodermic structures, such as epidermis or neuroepithelium.

I wish to thank Prof. T. M. Prudden for placing the resources of his laboratory at my disposal, and also for much interest and advice during the progress of this study. I am greatly indebted to Prof. F. C. Wood for the material of my two testicle cases, and for much aid and many helpful suggestions. Dr. Ludwig Pick (of Berlin) has very kindly given me valuable advice and criticism through several private communications, for which I take this occasion to thank him.

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REFERENCES.

1. Maier, R.: "Ueber Geschwulstbildung mit dem Bau des Deciduumgewebes." *Virch. Arch.*, vol. lxxvii, 1876, p. 55.
2. Singer, M.: "Ueber Sarcoma uteri deciduocellulare u. andere deciduale Geschwülste." *Arch. f. Gyn.*, vol. xlv, 1893, p. 89.
3. Pfeffer, V.: "Ueber eine eigenthümliche Geschwulstform des Uterus fundus (Deciduum malignum)." *Prag. Med. Wochts.*, vol. xv, 1880, No. 26, p. 327.
4. Chlir: "Ueber drei Fälle von primärem Carcinom im Fundus u. Corpus des Uterus." *Medizinische Jahrbücher, Vienna*, 1877, p. 364.
5. Marchand, F.: "Ueber die sogenannten 'deciduales' Geschwülste im Anschluss an normale Geburt, Abort, Blasenmole u. Extrauterinwucherung." *Monatsch. f. Geb. u. Gyn.*, vol. I, 1895, pp. 419 and 515.
6. Marchand, F.: "Ueber das maligne Chorion-Epithelom nebst Mittheilung von 2 neuen Fällen." *Zeitschr. f. Geb. u. Gyn.*, vol. xxxix, 1898, p. 173.
7. Marchand, F.: "Beobachtungen an jungen menschlichen Eiern." *Anatom. Anz.*, vol. xli, 1903, p. 217.
8. Spuler, R.: "Beiträge zur Histologie der Blasenmole." *Zeitschr. f. Geb. u. Gyn.*, vol. xl, No. 1.
9. Ruge, C.: "Bemerkungen zur frühesten menschlichen Placentation nach Hubert Peters." *Monatsch. f. Geb. u. Gyn.*, vol. ix, No. 1, p. 29.
10. Peacher, J. H.: "Chorionepithelioma and the Occurrence of Chorionepitheliomatous and Hydatidiform Structures in Teratomata: A Pathological and Clinical Study." *Jour. of Obst. and Gyn. of British Empire*, vol. iv, 1903, July, No. 1, p. 2.
11. Virchow, R.: "Die krankhaften Geschwülste," vol. I, 1863: "Myxoma der Placenta," p. 405.
12. Marchand, F.: "Ueber den Bau der Blasenmole." *Zeitschr. f. Geb. u. Gyn.*, vol. xxxii, 1895, p. 405.
13. Salowij, A., Krzyżakowski, J.: "Beitrag zur Chorionepitheliom- und Blasenmolenfrage. Ein neuer Fall von einer bösartigen (destruirenden) Blasenmole." *Monatsch. f. Geb. u. Gyn.*, vol. xli, 1904, p. 15.
14. Pick, L.: "Von der gut- und bösartigen metastasirenden Blasenmole." *Berl. klin. Wochts.*, 1897, Nos. 48 and 50, pp. 1069 and 1097.
15. Schlägenhauser, F.: "Zwei Fälle von Tumoren des Chorion-epithels." *Wien. Klin. Wochts.*, 1899, No. 18, p. 486.
16. Neumann, J.: "Beitrag zur Kenntniss der Blasenmole u. des 'malignen Deciduum.'" *Monatsch. f. Geb. u. Gyn.*, vol. 6, Nos. 1, 2, p. 17 and 157.
17. Gottschalk, S.: "Das Sarcom der Chorionzotten, nebst Bemerkungen über das Wesen der bösartigen Geschwülste im Allgemeinen." *Arch. f. Gyn.*, vol. xlv, 1894, p. 1.
18. Ruge, C.: "Diskussion zu Velt's Vortrag 'Ueber malignes Deciduum.'" *Zeitschr. f. Geb. u. Gyn.*, vol. xxxviii, 1898, No. 3, p. 531.
19. Pels-Leusden, F.: "Ueber die serotinalen Riesenzellen u. ihre Beziehungen zur Regeneration der epithelialen Elemente des Uterus u. der Placentarstelle." *Zeitschr. f. Geb. u. Gyn.*, vol. xxxvi, 1897, p. 1.
20. v. Velits, D.: "Ueber histologische Indicien des Chorionepithelioma 'benignum.'" *Zeitschr. f. Geb. u. Gyn.*, vol. li, 1904, p. 301.
21. Hürmann, K.: "Zur Frage der Bösartigkeit und über Spontanheilung von Chorionepitheliom." *Hegar's Beiträge*, vol. viii, 1904, p. 418; (Gleibt es histologische Indicien für das Chorionepithelioma 'benignum?'" *Zeitschr. f. Geb. u. Gyn.*, vol. liv, 1905, p. 343.
22. Gebhard, C.: "Ueber das sogenannte 'Syncytioma malignum.'" *Zeitschr. f. Geb. u. Gyn.*, vol. xxxvii, 1897, p. 503.
23. Apfelestedt und Aschoff, L.: "Ueber bösartige Tumoren der Chorionzotten." *Arch. f. Gyn.*, vol. I, 1896, No. 3, p. 511.
24. Velt, J.: "Ueber Deotation von Chorionzotten." *Zeitschr. f. Geb. u. Gyn.*, vol. xlv, 1904, p. 466.
25. Schmorl, G.: "Ueber das Stielstück embolisch verschleppter Placentarzellen." *Verhandl. d. deut. path. Gesells.*, 1904, Breslau, Sept. 18-21, p. 39, also *Centralbl. f. Gyn.*, 1905, No. 5, p. 129.
26. Schmorl, G.: "Verhandl. d. deut. Naturf. u. Aerzte, Braunschweig," vol. li, 1897, part li, pp. 21 and 111.
27. Fildes, F.: "Primary Chorio-Epithelioma Malignum Outside of the Placental Site, with Report of a Case." *Journal A. M. A.*, vol. xliii, No. 19, p. 1351.
28. Seltz, L.: "Die Lutealzinwucherung in atretischen Follikeln—Eine physiologische Erscheinung während der Schwangerschaft. Vorläufige Mittheilung." *Centralbl. f. Gyn.*, 1905, No. 4, p. 257.
29. Fathelan, S.: "Zur Frage der Ovarialveränderungen bei syncytiellen Tumoren u. Blasenmolen." *Centralbl. f. Gyn.*, 1905, No. 13, p. 388.
30. Risel, W.: "Ueber das maligne Chorionepithelom u. über die analogen Wucherungen in Hodentumoren." *Leipzig*, 1903, Case 5, p. 85.
31. Holzappel: "Chorionepithelioma malignum." *Centralbl. f. Gyn.*, 1901, No. lxi, p. 1139, Ref. v. d. Nat. Versam. zu Hamburg.
32. Ribbert: "Geschwulstlehre." *Bonn*, 1904, p. 645.
33. Pick, L.: "Diskussion zu den Vorträgen ueber die Aetiologie des Carcinoms." *Berlin. Klin. Wochts.*, 1905, No. 13.
34. Marchand, F.: "Ueber Geschwucherung u. Geschwulstbildung mit Rücksicht auf die parasitäre Etologie des Carcinoms." *Deut. med. Wochts.*, 1902, Nos. 29 and 40.
35. Velt, J.: "Vortrag über malignes Deciduum." *Zeits. f. Geb. u. Gyn.*, vol. xxxviii, 1898, No. 3, pp. 508-531.
36. Pfannenstiel, J.: "Zur Frage des Syncytioms u. des Deciduum malignum." *Centralbl. f. Gyn.*, vol. xxii, 1898, No. 23, p. 601.
37. Leutenach, J., in O. Lubarsch's "Zur Lehre von den Geschwülsten u. Infektionskrankheiten," Wiesbaden, 1899: "Ueber die Schicksale verlagener u. embolisierter Gewebestelle im tierischen Körper," pp. 42 and 52.
38. Lubarsch, O.: "Zur Lehre von der Parenchymzellenembolie." *Fortschr. d. Med.*, vol. xi, 1893, pp. 805 and 845.
39. Maschnow, A.: "Zur Lehre von den Parenchymzellen Embolie der Lungenarterien." *Virch. Arch.*, vol. cii, No. 2, p. 297.
40. Alchell: "Ueber die Blasenmole." *Sitzungsbericht d. Physik. Med. Soc. in Erlangen*, No. 33, 1901, p. 25 (see Risel).
41. Vassmer, W.: "Beitrag zur Anatomie u. Aetologie der tubaren Eileitertumoren, nebst Mittheilung eines Falles von vaginaler Chorionepitheliometastase bei Tubenschwangerschaft." *Fath. Anat. Arbeiten*, Festschr. f. Orth. Berlin, 1903, p. 237 (see p. 209).
42. Birch-Hirschfeld, A., and Gärtner, S.: "Ueber das Verhalten implantierter embryonaler Zellen im erwachsenem Thierkörper," *Ziegler's Beiträge*, 1899, vol. xvi, No. 1, p. 132.
43. Bock: "Mole hydatidiforme chez un enfant de 12½ ans." *Bullet. de la Soc. Belge de Gyn. et Obst.*, 1899-1900, p. 113.
44. Metcalf, O.: "Die Metaplasien u. ihre Bedeutung für die Geschwulst-Lehre." *Arch. an. d. path. anat. u. Abh.*, 9. kgl. Hygien. Inst. zu Posen, Virchow's Festschr., Wiesbaden, 1901, p. 230.
45. Pick, L.: "Das Epithelioma chorioectodermale." *Berlin. klin. Wochts.*, 1904, Nos. 7 and 8.
46. Michel, F.: "Ein Karzinom des Eierstocks mit chorionepitheliomatösen Bildungen." *Centralbl. f. Gyn.*, vol. xxix, 1905, No. 14, p. 422.
47. Pick, L.: "Zur Lehre vom Epithelioma chorioectodermale (Eine Antwort auf den Aufsatz Michel's in No. 14 d. Bl.)." *Centralbl. f. Gyn.*, vol. xxix, 1905, No. 18, p. 545.
48. Wilms, M.: "Die teratoiden Geschwülste des Hodens: mit Einschluss der sog. Cystiden u. Enchondromen." *Ziegler's Beiträge*, vol. xix, 1898, No. 2, p. 233.
49. Bonnet, R.: "Zur Aetologie der Embryome." *Monatsch. f. Geb. u. Gyn.*, vol. xlii, 1901, p. 148.
50. Trautn, R.: "Ueber Transplantationen von Embryonalgeweben ins Ovarium u. die Bildung von Paracystiden." *Centralbl. f. allg. Path. u. path. Anat.*, vol. xlii, 1902, No. 2, p. 46.
51. Ekborn, G.: "Die Dermoidzysten des Mediastinum anticum." *Arch. f. klin. Chir.*, vol. li, 1895, p. 107.
52. Bonnet, R.: "Gleibt es bei Wirbellosen Parthenogenese?" (*Anhang: Embryome*, p. 861), *Merkel-Bonnet Ergebn.*, vol. ix, 1899, p. 820.
53. Ziegler: "Ein Beitrag zur Kenntniss der Dermole u. Teratomata." *Ziegler's Beiträge*, vol. xxxi, 1902, (Case 11, pp. 459 and 475).

- Dr. C. Sternberg has appeared in the Zeltschr. f. Histochemie, Leipzig, 1905, vol. xxvi, No. 4, p. 103 (Ein pathologischer Fall von Chorionepitheliom mit Blutgefäßmetastasen). As the author has formulated an attack on the doctrine of syncytium, it is not surprising that he has formulated a formulated attack on the doctrine of syncytium. The author has formulated a formulated attack on the doctrine of syncytium. The author has formulated a formulated attack on the doctrine of syncytium.

CHRONIC ACETANILID POISONING

WITH REPORT OF A CASE DUE TO ABSORPTION OF THE
DRUG FROM AN ULCER OF THE LEG.*

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It is well known that an overdose of acetanilid may produce alarming or even fatal results and that with an average dose the same untoward symptoms may follow in one who, because of idiosyncrasy, is peculiarly sensitive to the influence of the drug. There are few physicians who have used the remedy at all extensively who have not at times seen more or less pronounced cyanosis, feeble pulse, subnormal temperature, sweating, yawning, nausea, vertigo, perhaps syncope or marked symptoms of collapse, follow its administration.

The literature abounds in reports of acute toxic symptoms after acetanilid. Some of these doses have been small, 1.5 to 5 grains, yet, on the other hand, large doses have been borne with impunity. I have known 30 grains at a dose to be given for the relief of pain, this amount being often repeated, yet no unpleasant results followed. Harte¹ reports 30 grains (450 grains) as having been taken without a fatal result. Elmquist² saw a woman who had taken 8 grams (120 grains) with suicidal intent. Though the stomach was not washed out until two hours after the ingestion of the drug, recovery followed, and there were, in fact, at no time any very alarming symptoms.

While these acute dangers attending the use of acetanilid are recognized by the profession, and even to a limited extent by the intelligent layman, it is not so well known that the long-continued use of acetanilid is attended by fairly definite poisonous effects and that idiosyncrasies exist analogous to those seen in acute poisonings, accounting for the fact that some individuals are unable to tolerate an oft-repeated dose of the drug that is easily borne by another. Chronic poisoning may escape detection because the symptoms in some instances are not pronounced; their onset, too, is often very gradual, even insidious; they mimic the manifestations of other diseases or are partly obscured by symptoms of the primary disease for which the drug was taken, so that it is often no easy matter for the physician to recognize the existence of toxic effects. And especially is it difficult when he is unaware of the fact that the patient is taking the drug or when, as so often happens, the patient persistently denies the existence of any drug habit.

It is fitting, therefore, to call attention to the clinical features attending the chronic use of this drug, so that they may be better known, and it seems an opportune time to review the subject of chronic acetanilid poisoning, for several cases have recently been reported, and the committee on chemistry of the Council on Pharmacy and Chemistry of the American Medical Association has just told us of the large number of patent and proprietary remedies containing this drug. The spread of such knowledge as that contained in this admirable report, as well as the knowledge as to the symptoms and dangers of chronic poisoning, ought to make physicians and laymen more cautious in the handling of the remedy

and help kill its wholesale and indiscriminate use in the many nostrums now on the market.

In the present paper we shall first report a case of chronic poisoning by acetanilid, the drug being absorbed from an ulcer of the leg, in this respect the case being unique. The results of a study of the blood and urine will then be detailed, as well as some animal experiments. Lastly, the attempt will be made to draw from the study of this and other reported cases a clinical picture of this condition and to show how a study of acetanilid poisoning may possibly throw light on other forms of disease attended by somewhat similar changes in the blood, urine and spleen.

REPORT OF THE CASE.

Epitome of the Case.—A woman, aged 50 years, for seven years applies acetanilid to a large chronic varicose ulcer of the leg. She has had more or less general nervousness, mental depression, weakness, dyspnea, cyanosis, palpitation, and is found cyanotic. Stopping the use of the drug causes maniacal excitement and gives proof of her being addicted to its use. The liver and especially the spleen are enlarged. The blood shows a moderate degree of secondary anemia. There is no hemoglobinemia or methemoglobinemia. Urine, dark in color, shows paramidiphenol and increase in ethereal sulphates. There is no albumin, sugar or casts, and no methemoglobin. Animals after being given acetanilid for a long time show only slight blood changes; splenic changes also slight, though in one dog an appreciable increase in the amount of connective tissue. Patient recovers after gradual withdrawal of the drug.

History.—Mrs. A. W., American, aged 50 years, widow, cook by occupation. Family history negative. Patient did not have any of the diseases of childhood. There is no history of venereal or other infectious disease. Menstruation was regular until two years ago, when the flow ceased. Patient was married at 23; never pregnant. With the exception of trouble with the left leg, the patient was in good health up to five years ago.

Present Illness.—From early girlhood the veins of the legs were prominent, particularly on standing. At 20 years of age one of the veins of the left leg ruptured, bled profusely, and later the leg became ulcerated and this ulcer has never completely healed. Ten years ago the ulcer was skin-grafted, with no permanent benefit. For the past eight years the ulcer has involved the entire circumference of the leg and has remained unchanged in size and symptoms. For the past seven years the patient has applied daily a powder to the ulcer for the relief of pain. This powder was obtained from a veterinary at a cost of \$2 per pound, a pound lasting about one month. Four years ago there was some pain in the right heel and ankle of a rheumatic character, but no swelling or redness of this or any other joint.

For five years the patient has had attacks at intervals of about six months, characterized by weakness, shortness of breath, hot flashes, with sensations of fever over the body, sweating and mental depression. After a few weeks of rest the symptoms have disappeared and she has felt as well as usual. Fifteen months ago one of these attacks came on, from which the patient has not recovered as before. Rest in the country improved the general condition somewhat, but recently the weakness, shortness of breath and pallor have increased.

On admission to the hospital she complains of weakness, hot flashes over the face and body, sweating, dyspnea on exertion, mental depression, pain and discomfort from the ulcer of the left leg. The appetite is good, bowels are regular. There are no headaches or vertigo.

General Examination.—The patient is a rather large, middle-aged woman, of medium height, weight about 170 pounds. General appearance anemic. The face and hands are of a dusky, slightly icteric tint. Lips and finger-nails are bluish. Musculature is flabby. Mental condition good.

The pupils react rather sluggishly to light, but normally to

* Read, by invitation, at the meeting of the County Medical Society, Philadelphia, Jan. 10, 1905. The report of this meeting, with the discussion, appears on page 379 of this issue.

1. Harte: *Petersburg. Wochenschr.*, 1890, No. 8.

2. Elmquist: *Höspitalstidende*, 1904.

accommodation. The sclera have a slightly icteric tint. The teeth are all but one absent, tongue slightly coated.

The chest is well formed and expands normally on inspiration. The breasts are large and pendulous. The heart is enlarged, the left border of dullness lying 4 cm. to the left of the left mamillary line, the right border at the right sternal margin. A systolic blowing murmur is heard at the apex, transmitted to the left and upward over the precordium. Sounds at the base are impure, but there are no definite murmurs. Pulse 100, rather weak. Temperature 98.6. Lungs negative.

The abdomen is prominent, the walls thick and flabby. There is a small partially-reducible umbilical hernia, and also a reducible right inguinal hernia. The liver is palpable 4 cm. below the right costal arch and slightly tender; its upper border of dullness is at the fifth interspace in the mamillary line. The spleen is palpable, as a rather firm, elongated and flattened mass. It is easily movable and is apparently about three or four times its normal size. The pelvic organs are normal. The entire circumference of the middle two-thirds of the left leg is occupied by an ulcer involving the whole thickness of the skin. The floor of the ulcer is irregular, covered with grayish necrotic material having a foul odor. The edges are sharply defined and thickened. The skin distal to the ulcer is indurated and edematous. There is slight hemorrhage from the ulcerated surface on removing the dressings. A small piece of tissue excised from the margin of the ulcer showed microscopically the histologic changes characteristic of chronic inflammation. The veins of the right leg as well as of the left show a number of varicosities.

The axillary, inguinal, cervical and epitrochlear glands are not enlarged.

Blood Examination.—Red corpuscles, 3,528,000; white corpuscles, 12,000; hemoglobin, 40 per cent.; color index, 0.57. In the fresh specimen the red cells were about normal in size and shape, although there were a few rather small cells present. Smears stained with Ehrlich's triacid stain showed a slight poikilocytosis, but no nucleated red cells. A differential count of 250 leucocytes gave 9.6 per cent. small mononuclear, 4.8 per cent. large mononuclear, indented nucleus and unclassifiable; 84.6 per cent. polynuclear neutrophils.

Urinary Findings.—On admission the urine was clear, dark amber in color, acid, specific gravity 1022, no albumin, no sugar; no blood-pigments nor bile-pigments were found, although with nitric acid a dark color ring appeared, resembling that found in urine after the administration of coal-tar products. There were no casts nor red cells, but a few leucocytes were present.

Ophthalmoscopic Examination.—Some time after admission an examination of the eyes showed no retinal changes.

Diagnosis.—The dyspnea and cyanosis seemed out of proportion to the cardiac and pulmonary findings and the powder used for so long on the ulcer was examined as a possible cause. The powder, of the nature of which the patient was ignorant, was tested as to solubility, chemical reactions and melting point, and found to correspond in all respects to acetanilid. Further tests revealed no admixture of other common drugs or alkaloids.

A few days after admission the application of the acetanilid to the ulcer was stopped. This was followed within twelve hours by symptoms of extreme nervousness and excitement bordering on the maniacal, and the patient complained bitterly of pain in the affected leg, so that it was found necessary to restore the drug for the time and to restrict the amount gradually. Acetanilid from the drug room was applied on several occasions in place of the powder brought in by the patient, with the same effects. Coincident with the withdrawal of the acetanilid a gradual improvement in the condition of the blood was observed.

Further Blood Examinations.—Soon after admission, before any reduction in the amount of acetanilid, examination showed red corpuscles 3,864,000 and 60 per cent. hemoglobin. The blood was dark, but at no time showed any marked brown or chocolate tinge. Five examinations for methemoglobin were made with negative results. There was no hemoglobinemia.

The coagulability was slightly decreased. There was a moderate poikilocytosis observable in the fresh specimen. In the stained specimen there were a number of microcytes, an occasional macrocyte; and one nucleated form (normoblast) was found in counting 250 whites. Polychromatophilia was moderate. The leucocyte count was 9,900. A differential count of 250 gave 13.6 per cent. small mononuclear, 5.6 per cent. large mononuclear, 0.8 per cent. mononuclear neutrophils and 78.8 per cent. polynuclear neutrophils.

Two weeks after the entire withdrawal of acetanilid the blood count was 5,500,000 reds, 5,100 whites, 69 per cent. hemoglobin, coagulability normal, no poikilocytosis, though the red cells averaged somewhat smaller than normal.

The patient has remained in apparently good health, has gained about fifty pounds in weight, color is normal, heart action normal aside from the persistence of a slight systolic murmur, spleen and liver reduced in size. The last blood count showed the red cells 5,580,000, whites 11,800, hemoglobin 100 per cent. The slow healing of the ulcer with skin grafts; the deformity from cicatrices declared by the surgeon, Dr. J. B. Murphy, to be irremediable, led finally to the advice to have the limb amputated. This was successfully done above the knee and an artificial leg can now be worn.

DETAILS OF URINARY FINDINGS.

As already noted, the urine presented a number of interesting characteristics in color, amount and chemical constituents. Daily twenty-four-hour specimens were examined for a period of three months from the date of admission, during which time the amount of acetanilid applied to the ulcer was gradually decreased and the effect on the urine, blood and general condition of the patient noted. On admission the patient was applying from $\frac{1}{2}$ to 1 ounce of acetanilid crystals to the ulcer daily.

Amount.—The total urine in twenty-four hours varied from 1,300 to 2,800 c.c., average about 1,800 c.c., with an average specific gravity of 1.015.

Color.—The color of the urine when passed was dark reddish amber, at times resembling port wine, becoming gradually darker on standing, until after several days the specimen was brownish black, indistinguishable in color from a concentrated solution of Bismarck brown. Fresh specimens were repeatedly examined for blood, hematin, hematomorphyrin, indican and the bile-pigments with negative results. Fehling's solution (Haines' modification) was not reduced. Cover-glass preparations of bacteria, such as *B. coli communis* and *B. typhosus*, took a light brown stain when immersed in the urine for an hour. Celloidin sections of various tissues showed a diffuse brown staining of the connective tissue when treated for a short time with urine that had been allowed to stand in the light for a few days. An aqueous solution obtained by carefully evaporating the ether extract of the pigment from the urine gave the color reactions of paramidophenol; the alkaline solution became violet on exposure. With bleaching powder there was produced a violet color, changing to green.

The color of the urine became gradually lighter and the quantity smaller as the acetanilid was decreased until, on its entire withdrawal, the urine was light yellow, remaining unchanged in color on standing, with an average total urine in twenty-four hours of 1,300 c.c.

Paramidophenol.—Specimens of the urine were tested for the presence of acetanilid in the form of paramidophenol, as follows: 100 c.c. of urine were evaporated to 80 c.c., boiled with 8 c.c. of concentrated HCl for three minutes and, after cooling, shaken out with ether. The residue obtained by evaporation of the ethereal extract was dissolved in 10 c.c. of water and 3 c.c. of 5 per cent. carbolic acid added. On the addition of calcium hypochlorite solution, a reddish color appeared, which on adding ammonia became blue. This is the indophenol reaction showing the presence of paramidophenol.

Total Sulphates.—The total, ethereal and mineral (free) sulphates was estimated as follows: 100 c.c. of filtered urine were treated with 5 c.c. of concentrated hydrochloric acid and

3. Allen: "Commercial Organic Analysis," vol. III, part I, p. 213.

4. Webster and Koch: "A Laboratory Manual of Physiological Chemistry," p. 65.

boiled for fifteen minutes. While boiling, the sulphates were precipitated by the addition of 2 c.c. of saturated barium chlorid solution. The precipitate, after settling from the warm solution, was removed quantitatively to a filter of known ash, washed till no trace of chlorids appeared in the wash water, dried at 100 C., ignited in a platinum crucible till the weight remained constant, and weighed.

Ethereal Sulphates.—(Salkowski's method), 200 c.c. of filtered urine were treated with an equal volume of barium solution (two volumes of saturated barium hydrate solution and one volume of saturated barium chlorid solution) and filtered through a dry filter; 100 c.c. of the filtrate, containing the ethereal sulphates, were treated as above for total sulphates, except that 10 c.c. of hydrochloric acid were added before boiling.

Mineral Sulphates.—(Found by taking the difference between total and ethereal sulphates.) Several direct determinations of free sulphates, and of the ethereal sulphates from the residual filtrate were made as a control to the above, but this latter method was found subject to slightly greater error and was hence discarded. The results are computed in terms SO_4 .

DETAILS OF TREATMENT AND COURSE.

Throughout the period of these observations (November 20 to February 3) the patient was on general ward diet of fairly constant average composition, the appetite was fair, bowels regular. No coal-tar preparations aside from acetanilid were given, and no other medicine except necessary laxatives, and after the withdrawal of the acetanilid occasional small doses of codein.

URINALYSIS TABLE.

| Date. | Medication in 24 hrs. | Total Urine, 24 hrs.; c.c. | Sp. Gr. | Color. | Sulphates Estimated in Terms of SO_4 . | | | Paramidophenol in Ur. Albumin. | | Haine's Solution Reduced. |
|---------|---|-------------------------------|---------|--|--|--------------------------------|---|-----------------------------------|---|------------------------------|
| | | | | | Total Sulphates, Gms. | Ethereal Sulphates, Gms. | Mineral (free) Sul- phates, Gms. | + | 0 | |
| Nov. 24 | Acetanilid, six drams locally to ulcer. | 1800 | 1014 | Clear reddish amber. | .792 | .756 | .036 | + | 0 | |
| Dec. 9. | Acetanilid, three drams locally to ulcer. | 2300 | 1011 | Clear amber, slightly lighter than previ- ous. | .805 | .777 | .028 | + | 0 | |
| Dec. 14 | Acetanilid, three drams locally to ulcer. Sod. sulph., two drs. by mouth. | 1800 | 1015 | Light amber | 1.186 | .668 | 0.518 | + | 0 | |
| Dec. 23 | Acetanilid, one dram locally to ulcer. Sod. sulph., two drs. by mouth. | 1900 | 1013 | Light orange yellow | .. | .. | .. | + | 0 | |
| Dec. 29 | Package of ace- tanilid found at bedside; one half ounce applied twice to leg. Sod. sulph., two drs. by mouth. | 1500 | 1015 | Dark amber | .. | .. | .. | .. | 0 | |
| Jan. 23 | Acetanilid en- tirely with- drawn since Jan 1. Sod. sulph., two drs. by mouth. | 2800 | 1013 | Light yellow | 2.626 | .218 | 2.227 | * | † | 0 |
| Jan. 26 | Sod. sulph., two drs. by mouth. | 1400 | 1019 | Yellow... | 1.971 | .138 | 1.833 | .. | 0 | |
| Jan. 29 | Sod. sulph., two drs. by mouth. | 1800 | 1013 | Light yellow | 1.828 | .148 | 1.680 | .. | 0 | |
| Feb. 1. | Sod. sulph., two drs.; acetanilid, thirty gr. by mouth (five gr. q. 4 h.). | 2000 | 1013 | Dark yellow | 1.686 | .592 | 1.094 | .. | 0 | |
| Feb. 3. | Same as above. | 1700 | 1018 | Dark yellow | 3.292 | .475 | 2.817 | † | 0 | |

* None found in treating 100 c.c. urine.

† Trace serum albumin

† Extract of 20 c.c. gives good test.

On November 24 the patient was receiving 3 vi of acetanilid applied locally to the ulcer in doses of 3 ii three times a day, somewhat less than she was accustomed to use on admis-

sion to the hospital. The urine was clear reddish amber in color, increased above normal in quantity, but contained no albumin nor sugar. Tests for acetanilid (in form of paramidophenol) were positive. The total sulphates in twenty-four hours were found to be 0.792 gm., of which 0.756 gm. were ethereal sulphates and only 0.036 gm. free sulphates. A few days later, December 9, the acetanilid was reduced to 3iii in twenty-four hours applied to ulcer. Paramidophenol present in urine as before. The total sulphates at this time amounted to 0.805 gm., of which 0.777 gm. were ethereal and 0.028 gm. free. In view of the remarkably low values for free sulphates it was thought that the long continued elimination of ethereal sulphates might have created a poverty of sulphates in the body. On December 12, accordingly, for both therapeutic and experimental reasons, sodium sulphate was given by mouth in doses of 3 ii daily, the other conditions of food and acetanilid remaining unchanged. On December 14 the urine was somewhat lighter in color, the quantity and specific gravity about the same as before. The total sulphates were 1.186 gm., of which 0.668 gm. were ethereal and 0.518 gm. free.

By December 23 the acetanilid had been reduced to 3 i applied locally to the ulcer; sodium sulphate 3 ii was given daily by mouth. The urine was light orange in color and still gave a good test for paramidophenol. The general condition of the patient had steadily improved. There was still some cyanosis, but no dyspnea; heart regular, 72 to 80 per minute, temperature normal. A few days later (December 29) the general cyanosis increased, the lips and finger-nails became blue and the patient fainted on attempting to sit up in bed. The pulse was much weaker and increased to from 84 to 100 per minute, temperature subnormal. The urine was dark amber, resembling that passed on admission. After some search there was found at the bedside a package of acetanilid, of which the patient admitted applying about one ounce during the night to relieve pain.

The acetanilid was entirely withdrawn on January 1, the cyanosis disappeared and the patient began to gain steadily in weight.

On January 23 the urine was light yellow, 2,800 c.c. in twenty-four hours, specific gravity 1013, with trace of serum albumin, no sugar. The total sulphates were 2.626 gm., of which 0.218 gm. was ethereal and 2.227 gm. free sulphates, being approximately the relation of ethereal to mineral sulphates in a normal individual. Two more determinations of sulphates (the patient still receiving 3 ii of sodium sulphate by mouth) showed at the first examination total sulphates 1.971 gm., ethereal sulphates 0.138 gm., free sulphates 1.833 gm., and at the second examination total sulphates 1.828 gm., ethereal sulphates 0.148 gm. and free sulphates 1.680 gm., respectively. Examinations of the urine for paramidophenol were negative.

The patient was then given acetanilid gr. v every four hours, making gr. xxx in twenty-four hours, for three days. After twenty-four hours the pulse showed 56 to 60, temperature 96.4 to 96.8, but no other marked symptoms until the third day, when the patient began to complain of epigastric distress, nausea, difficulty in breathing, tingling in the fingers, extreme nervousness. Lips and finger-nails became cyanotic. Pulse variable, 56 to 80 per minute, weak. Temperature subnormal, 96.4. The urine was dark yellow in color and gave a distinct reaction for paramidophenol with 20 c.c. Two determinations of the sulphates showed respectively total sulphates 1.686 gm. and 3.292 gm., ethereal sulphates 0.592 gm. and 0.475 gm., free sulphates 1.094 gm. and 2.817 gm. These numerous tests show conclusively the distinct increase in the elimination of the ethereal sulphates that follows the ingestion of acetanilid.

ANIMAL EXPERIMENTS.

The effect of prolonged dosage with acetanilid was studied experimentally in a number of animals, the particular object being to see whether any effect would be produced on the spleen.

Guinea-Pigs.—To each of two guinea-pigs was given a suspension of one-half grain of acetanilid in olive oil daily for a period of four weeks. The first pig died at the end of four

weeks. Autopsy showed an extreme tuberculous involvement of the lungs. The spleen and other organs were normal in size and appearance. The second pig increased steadily in weight and showed no symptoms whatever. At the end of four weeks the dose was increased to 1 grain per day, and two weeks later increased to 2 grains per day. This dose corresponded to about $1\frac{1}{2}$ grains of acetanilid per kilo. of weight, or 105 grains a day for a man 70 kilo. in weight, and was continued for five weeks more without producing any symptom. The animal almost doubled in weight during the treatment.

A third pig weighing 475 gm. was given gr. i of acetanilid daily for four weeks, then gr. ii for six weeks more. In this animal the weight decreased gradually and at death the pig weighed 275 gm. At autopsy the heart was found dilated, filled with blood. The liver, spleen and kidneys were rather darker than normal, but otherwise showed no changes. The stomach, intestines and lungs were normal.

Rabbits.—Two rabbits were given gr. i per kilo. of body weight daily for six weeks, then gr. ii per kilo., with no symptoms and steady gain in weight until they succumbed to a disease epidemic in the animal house at the end of two and six weeks respectively. Autopsy showed no characteristic changes in the organs.

Dog.—A young adult dog weighing 12 kilos. was given gr. x of acetanilid daily for ten weeks without producing any symptoms. The general condition of the animal was better at the end of this time than that of his companions. The dose was now increased to gr. xx daily by mouth. The first symptoms appeared after three days in sluggishness and loss of appetite. The dog began to lose weight rapidly and became very weak. On the twelfth day there was inability to support the body on the hind legs, due, apparently, to weakness, as there was no real paralysis present. A small purpuric area 2 cm. in diameter was present on one flank. No hemorrhages in the mouth or elsewhere. Examination of fresh and stained specimens of the blood showed the red corpuscles rather pale, but otherwise normal in shape, size and staining reactions. No nucleated forms were found. On the thirteenth day the dog had a series of convulsions of short duration and died the following night.

At the autopsy the animal was found greatly emaciated. There were several purpuric areas over the flanks. The heart was dilated with blood, but showed no pathologic changes. The spleen weighed 13 gm., was moderately soft and flabby, capsule smooth but somewhat wrinkled, grayish red in color, and on section was dry and showed some relative increase in connective tissue. The stomach was hyperemic externally and contained a small amount of dark fluid and a few straws. The mucous membrane was hyperemic, but otherwise normal. The lungs, liver, peritoneum, intestines, kidneys and meninges showed no changes.

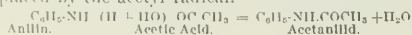
Microscopic sections of the spleen showed a marked increase in connective tissue with relative decrease in the spleen pulp. The stomach showed slight hyperemia. The other organs showed no microscopic changes.

REMARKS ON THE EXPERIMENTS.

The failure to obtain the picture of a marked secondary anemia in these animal experiments is worthy of note. Stengel had similar results in his animals, and Dr. Warthin of Ann Arbor informs me that in experimental poisoning by acetanilid extreme cyanosis, weakness and death were easily produced, but the degenerate red corpuscles, normoblasts, poikilocytes, etc., of high-grade anemia were not found. The failure to find uniform blood changes in human beings in this form of intoxication, as well as in the lower animals, must for the present remain unexplained except on the vague ground of idiosyncrasy.

GENERAL COMMENTS ON ACETANILID POISONING.

Acetanilid, as its name implies is anilin $C_6H_5NH_2$ in which one of the hydrogens of the amid group is replaced by the acetyl radical.



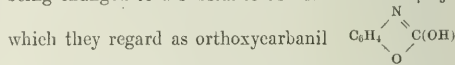
Its activity is probably due to the formation of simple derivatives of paramidophenol in the tissues. A rapid formation of paramidophenol,



produces destructive blood changes and tendency to collapse, while the antipyretic effects pass off very rapidly.⁵

Paramidophenol has been found in the urine of patients who have taken any considerable amount of acetanilid, whenever it has been sought for, since Fr. Müller⁶ in 1887 called attention to its presence in the urine in a case of poisoning by anilin.

Jaffe and Hilbert⁷ found in the herbivora (rabbits) that the acetyl group was oxidized to paramidophenol and appeared as such in the urine, while in carnivora (dogs) only a part appears as paramidophenol, the rest being changed to a substance of the formula $C_7H_5NO_2$,



The substances into which acetanilid is changed are joined with sulphuric or glycuronic acids (e. g., paramidophenol-ethereal sulphate). The glycuronic acid is believed to account for the levorotatory property of the urine noticed in some cases.

Cahn and Hepp,⁸ who first drew attention to acetanilid as an antipyretic, believed that some acetanilid appeared unchanged in the urine, at least in dogs. Others, e. g., Möhrner,⁹ have failed to find unaltered acetanilid in urine. Müller⁶ and others, since his paper was published, have found the ethereal sulphates of the urine increased, while the preformed mineral sulphates are lessened. This is so in our case, as is well shown by the table. It is interesting to note, in our case, too, the increase of mineral sulphates on giving sodium sulphate.

CLINICAL SYMPTOMS OF CHRONIC ACETANILID POISONING.

Manner of Acquisition of the Habit.—The acetanilid habit, which is apt to be accompanied by poisonous symptoms, is fixed on a patient who takes the drug for the relief of pain; the habit is rarely acquired from the giving of a remedy for its antipyretic effects. The analgesic properties of the drug are well known, and it is a common constituent of headache powders,¹⁰ its cheapness making it preferred by the manufacturer of the proprietary or patent medicine to the other coal-tar derivatives. The habit is particularly apt to become a fixed one in the neurotic and hysterical. But strong-minded individuals, sufferers from real, genuine pain, as in chronic inflammations, sciatica, rheumatism, arthritis deformans, tabes, migraine, tuberculosis of bone, ulcer of the stomach, etc., may become dependent on it for the relief of pain and the securing of sleep. Larger or more frequent doses then become necessary and the sudden withdrawal of the drug is followed by exacerbations of pain, sleeplessness and restlessness, such as are seen in the morphin habitué who has his accustomed opiate removed. We tried the sudden withdrawal of

5. Cushing: "Textbook of Pharmacology," 2d edition, p. 365; also von Mering: *Therap. Monatshefte*, 1893, p. 577, and Hlinsberg and Treupel: *Archiv. f. exp. Path. u. Pharm.*, vol. xxviii, p. 216.

6. Fr. Müller: *Deutsche. Med. Woch.*, 1887, No. 1.

7. Jaffe and Hilbert: *Zetschr. f. Physiolog. Chemie.*, xii, p. 295.

8. Cahn and Hepp: *Berlin. Klin. Woch.*, 1887, No. 1.

9. Möhrner: *Zetschr. f. Phys. Chemie*, xiii, p. 12.

10. See report of Committee on Chemistry of the Council on Pharmacy and Chemistry, American Medical Association, *The Journal*, June 3, 1905, p. 1791.

the drug several times in the case of our patient and there developed a condition bordering on mania. There were great restlessness, anxiety, sleeplessness, crying, complaint of pain in the leg, threats of suicide, and finally, as said, a wild and almost maniacal excitement. Codein was a very poor substitute for the acetanilid. Quiet was always restored whenever acetanilid was given by mouth or sprinkled on the ulcer, and whether the patient was aware or not of the fact that she was getting the drug; in other words, there was no imagination about it, the patient was always calm and quiet when under the drug and always excited without it.

So far as I know, this case is the only one in which chronic poisoning has resulted from absorption through the skin. Acute poisoning by absorption from the open skin has been reported, as by Newton.¹¹ The drug has been used locally for its analgesic and germicidal properties, and is a constituent of certain powders sometimes employed by the dermatologists, e. g. the stearate of zinc with acetanilid, in the treatment of painful or itching affections of the skin.

The susceptibility to the chronic use of the remedy varies greatly. Some individuals take the drug repeatedly and in goodly doses and are not perceptibly harmed by it. But in most persons slight or marked evidences of toxemia can be seen. Among the commonest manifestations are the following:

Cyanosis.—Cyanosis may be practically the only evidence of the toxic effect of the drug. Jacksch¹² says he has seen several instances of this character where the toxemia has been acute. Cabot's¹³ case was of this nature and was chronic. Cyanosis seems to be the most constant symptom in both acute and chronic acetanilid intoxication. It may be extreme. It varies in intensity from time to time as the amount of drug taken varies. Its real cause is not always clear. Methemoglobinemia may or may not be present. Cyanosis unaccounted for by ordinary explanations, such as cardiac or pulmonary diseases, should lead to the investigation as to the use, perhaps secret, of the coal-tar derivatives.

Anemia and Blood Changes.—The anemia varies in intensity. It is of the secondary type; the hemoglobin is reduced out of proportion to the reduction in the number of red corpuscles. Yet in Cabot's case polycythemia rather than oligocythemia was present. The blood may show marked morphologic changes, the red corpuscles varying in shape and size, often with irregular, fragmented or free nuclei, and many corpuscles showing polychromatophilia. The normoblast is the nucleated form that predominates, though megaloblasts are also seen. The composite picture of Stengel¹⁴ shows the extent to which the degenerative changes may go. Blood plaques are often increased in number. Basophilic stippling of the erythrocyte is sometimes seen. Leucocytosis is the rule—e. g., in our case 12,000, Stengel's 19,000—the increase being in all the varieties of white corpuscles, though in most cases it has been especially in the polymorphonuclear variety. Intercurrent or accompanying inflammatory or suppurative processes may be the cause of the polymorphonuclear increase. Myelocytes are occasionally found. In our case there was a slight decrease in the coagulability. The blood is usually dark and methemoglobinemia has been noted several times, this interfering with the ordinary color tests

for hemoglobin. In other instances no such change is present. Just why there are these differences is not clear. Perhaps in some cases there is no formation of methemoglobin; in others with more of the drug the methemoglobin is formed in the red blood corpuscle; with still more the hemolytic action is more marked and methemoglobin is found in the blood plasma and appears as such in the urine.⁵

Dyspnea, etc.—A physical weakness and shortness of breath, especially on exertion, are complained of by many of these patients. Palpitation, dizziness, spots before the eyes and tinnitus aurium are also met with, as in any other anemia. It is perhaps rather characteristic of chronic acetanilid poisoning that these symptoms as well as the cyanosis are apt to be variable. This is, in large measure, due to the fact that the amount of drug taken may vary from time to time, and the improvement, both subjective and objective, that follows the cutting down of the dose is often quite remarkable. The depressing effect of acetanilid on the nervous system must account in part for these symptoms, for the degree of anemia is often not marked enough entirely to explain them.

Nervous Symptoms.—Mentally the patients are apt to be "nervous." They are neurasthenic, introspective, imaginative. There may be marked mental apathy and hebétude, even bordering on stupor.¹⁵ And they are as deceptive as to the use of acetanilid as is the morphin victim concerning his drug. They seem to have an acquired moral degeneracy. The dependence on the drug can be proven by suddenly stopping it. Complaints of pain, sleeplessness, restlessness, with weeping and the wildest excitement may follow, and the patient begs piteously for the remedy on which he has learned to depend.

Observations are not numerous enough to enable one to make very definite statements as to the condition of the nervous system. Motor disturbances seem not to be described, except that general weakness is often noted. Sensory disturbances beyond the complaint of pain that is so common seem to be rare. Paresthetic sensations are occasionally described. No definite statements concerning the condition of the special senses or the reflexes seem warranted, though feeble patellar reflex is reported.¹⁶

The Heart.—Weak action of the heart is the rule. The pulse is usually soft, compressible, small and often rapid. The irritability of the heart is shown by the alteration in the rate easily brought about by exertion or by nervous excitement. Endocardial murmurs may be due to previously existing cardiac lesions such as sclerosed valves or to the blood condition—so-called hemic murmurs. Myocardial weakness may result in dilatation with the corresponding physical signs and murmurs of relative auriculo-ventricular insufficiencies. As improvement takes place on withdrawing the drug, the heart may return to its former size.¹⁶

The Alimentary Tract.—The alimentary tract is apt to be more or less disturbed; anorexia with occasional nausea and vomiting may occur. The bowels may be irregular. The loss of weight that is commonly seen after the prolonged use of acetanilid may, in a measure, be accounted for by the malnutrition and the digestive disturbances that are present.

The Spleen.—In some of the cases a marked enlargement of the spleen has been noted. In our case the size

11. Newton: N. Y. Med. Record, March 7, 1896.

12. Jacksch: Die Vergiftungen, Nothnagel's System, vol. I, p. 332.

13. Cabot: Phila. Med. Jour., Nov. 29, 1902.

14. Stengel and White: Univ. of Penna. Med. Bull., xv, No. 12, 1903.

15. See D. D. Stewart's case, THE JOURNAL, A. M. A., vol. XIV, No. 22.

16. See Stengel's case, THE JOURNAL, A. M. A., July 22, 1905.

seemed to vary with the amount of acetanilid that was taken. This possible enlargement of the spleen in long-standing cases of acetanilid poisoning should be remembered, as it may be a valuable diagnostic aid rather than a stumbling block in making us think of chronic passive congestion from non-compensated heart, or of the large spleen of hepatic cirrhosis, leukemia, splenic anemia, polycythemia, etc.

The Urine.—In amount the urine appears to vary considerably. In some cases concentrated and of high specific gravity there has been a diminished amount, e. g., in Stengel's second case specific gravity 1038 and 600 c.c. In our case there was an average output of 1,800 c.c. of a specific gravity of 1015, the variations in amount not seeming to depend very closely on the amount of acetanilid taken.

Albumin has been reported in some of the cases, usually, as in our case, as an occasional trace. In some instances larger amounts have been found, e. g., in Luce's case.¹⁷ Casts are found generally corresponding to the amount of albumin. Cardiac weakness with passive congestion may explain the edema occasionally seen, though genuine nephritis, presumably toxic in origin, may also be present and have an influence in producing the edema. In most cases, however, there is not much more than a trace of albumin with a few casts.

Sugar is not present as a result of the acetanilid ingestion. Yet Fehling's solution is sometimes changed to red by the reduction of the copper. This is probably due to the glycuronic acid that is present in considerable amount. Several observers believe that a part of the paramidophenol is combined with glycuronic acid. When doubt as to the presence of sugar exists control tests, such as the phenylhydrazin or the fermentation tests, can be employed.

The color of the urine is so uniformly dark as to make this a most important diagnostic feature of these cases. The color varies from a dark amber to a deep port wine or even brownish-black tint. The color often darkens on standing. And it may be added that putrefactive changes in the urine do not occur quickly. At least in our case this was so, for the urine even after standing for many days was sweet in odor and free from bacteria.

Various abnormal substances have been regarded as explaining the color. Excess of indican is reported. Hemoglobin, hematin, uroerythrin, urobilin and methemoglobin have been found. Paramidophenol is, however, the substance that has been regularly found in all cases, we believe, where it has been sought for, since Fr. Müller first reported its presence. This derivative of acetanilid seems to appear in various combinations. Some state that it occurs as paramidophenol; others as acetylparamidophenol. Most, however, state that paramidophenol is in union with sulphuric acid, or, in part, with glycuronic acid. Paramidophenol is recognized by the so-called indophenol test already described. The urine is boiled for a few minutes with one-quarter of its volume of concentrated hydrochloric acid, and on cooling, a few c.c. of 3 per cent. carbolic acid solution are added, and then hypochlorite of calcium or dilute chromic-acid solution. Amidophenol gives a red color, and on adding an excess of ammonia the color changes to blue.¹⁸ Certain color reactions may also be obtained.⁵ And the urine on standing may be employed as a staining reagent for bacteria or tissues, as was done in our case.

Acetanilid as such appears but rarely in the urine, though after large doses it may possibly be present. Cahn and Hepp⁸ believe it regularly appears.

There is uniformity of opinion as to the increase in the ethereal or conjugate sulphates in these cases. The method of their quantitative estimation has already been described and can be found in any of the text-books on physiologic or clinical chemistry or urinalysis. The normal ratio of mineral sulphates to the conjugate is approximately 10 to 1. In chronic acetanilid poisoning this will be greatly changed, the conjugate sulphates increasing as the mineral diminish so that the ratio may be reversed and be as 1 to 10, or, as in our case, even much less than this. Normally from 2 to 3 gms. of sulphates are eliminated by the average individual, the ethereal sulphates amounting perhaps to 0.25 gm. The great change in cases of chronic acetanilid poisoning may be seen when we notice the figures in our case, e. g., ethereal sulphate 0.77 gm. and mineral only 0.028 gm. That the ratio will, however, depend much on the amount of sulphuric acid ingested is seen from the increase in the mineral sulphates following the giving of the sodium sulphate.

Recapitulation.—To recapitulate the main points in the symptomatology: We find as the almost constant manifestations of chronic acetanilid poisoning (1) cyanosis that may be extreme, (2) more or less dyspnea and general weakness, (3) dark-colored urine that contains paramidophenol and an increased amount of the ethereal sulphates. Generally present but often a most striking and characteristic condition is the anemia of the secondary type with degenerate and nucleated red corpuscles. Methemoglobin may be present in the blood and in the urine. Dizziness, syncopal attacks, tinnitus, palpitation may be pronounced where the anemia is advanced. The spleen is often enlarged. Anorexia, nausea, vomiting and diarrhea may occur. Nervousness and restlessness are aggravated by the removal of the drug to which the patient has become habituated.

DIAGNOSIS.

The diagnosis is easy if once the condition is suspected. It may, however, be mistaken for other conditions, particularly diseases causing cyanosis or anemia or some of the functional nervous disorders. Cardiac weakness, hemic murmurs or those due to relative valvular incompetency, with the dyspnea may lead to a diagnosis of myocardial degeneration, valvular disease or congenital cardiac lesions. This mistake had been made in some of the reported cases. It is only by a careful study of the physical signs of the heart and of the disproportion between the cyanosis and the other evidences of cardiac incompetency that a cardiac origin for the cyanosis can be excluded. In all cases of cyanosis unexplained by cardiac disease, emphysema and the ordinary causes, intoxication by acetanilid or other coal-tar preparations should be sought for.

Confusion with the anemias might result from the blood examination and from the large spleen, though the degree of cyanosis commonly seen should at once attract attention and arouse suspicion of something different from pernicious anemia, chlorosis or leukemia. Methemoglobinemia should also lead one to suspect something different from the usual anemias. Such large numbers of nucleated red corpuscles with such degenerate forms are certainly rare in the ordinary secondary anemias.

Polycythemia with splenomegaly may be simulated. In one other case of chronic acetanilid poisoning that we have seen (orangeine¹⁹ being the preparation used by

17. Luce: *Amer. Medicine*, Sept. 26, 1903.

18. Neubauer and Vogel: *Analyse des Harns*, 10th edition, p. 614

the patient) there was at first a strong suspicion that the case was one of this type as the number of erythrocytes was above the normal and the spleen distinctly enlarged.

There is, we believe, a large number of patients who are suffering from chronic acetanilid intoxication of mild degree. Some of our perplexing anemic, dyspeptic, neurasthenic, "run down" patients might have their troubles explained, in part, if we but knew of the existence of this drug habit. At times the condition for which the drug was originally taken has entirely vanished, so that there is no excuse for the continued use except habit. Searching inquiry should be made in such cases where other adequate explanation for the symptoms is lacking, as to the possible existence of the acetanilid habit, and it should be remembered that the unfortunate who is addicted to the use of acetanilid may be as prone to conceal the fact and to lie about it as the most morally perverted and depraved morphine habitué. An examination of the urine in these cases may enable us to prove the use of the drug.

CONCLUDING REMARKS.

Treatment.—The treatment of this drug habit is comparatively simple. By gradual withdrawal of the acetanilid, temporary substitution of codein for pains or sleeplessness and the use of tonics, recovery will commonly ensue. Attention to the stomach and bowels is important, as on good digestion largely depends the power of blood repair and the return of weight and strength. Much can be done in the way of suggestive treatment by sympathy and encouragement and by having a frank understanding with the patient as to the nature of the ailment, its dangers and the best way of overcoming them. Difficulties in the way of relapse into the old habits will be encountered unless the patient is in a hospital, sanitarium or at home under the careful watching of a trusty nurse. These patients become in a strict sense addicted to the use of the drug, but it has not the firm hold on them that morphin or cocaine acquires on its victims. The habit is, therefore, more easily broken off. While one can not tell how much permanent damage has been done in these patients in the way of injury to heart muscle, kidney, nervous system, blood-making organs, etc., it is remarkable how rapidly they improve and approach the limits of perfect health when the use of the drug has been stopped. Even in the most desperate cases, therefore, one may give a fairly hopeful prognosis.

Nature of Splenic Enlargement.—The spleen in our case was decidedly large and fairly firm, so large as to lead, before the blood examination was made, to the question of a possible leukemia. In several other cases the spleen has been reported enlarged. The nature of the enlargement is not quite clear. It may be spodogenous, enlarging because of extra work thrown on it in disposing of waste matter, the result of blood disintegration, or it may be enlarged as the result of the irritation from paramidophenol or other substances circulating in the blood. That the enlargement is not permanent is shown by our case, in which, with the reduction in the dose of the drug, there was a diminution in the size of the spleen. In our animals very little change in the size of the spleen was produced by feeding acetanilid. In one dog there was a moderate enlargement with some increase in the amount of connective tissue.

The enlarged spleen and the cyanosis, as has been said, suggest cyanosis with splenomegaly, the condition described by Osler and others. The similarity is more striking when we consider cases such as Calot's, or any

own of the woman with the orangeine habit, in which there was polycythemia. And extremely interesting is the group of cases of enterogenous cyanosis reported by v. d. Bergh,¹⁰ where with intestinal disturbance there was marked cyanosis with much indican in the urine and presumably a great increase in the conjugate sulphates, with sulphohemoglobin in the blood, regarded at first by Stokvis as methemoglobin. Interesting fields for investigation are opened up by this group of cases with cyanosis and some light may be thrown on the subject by a more careful study of chronic acetanilid intoxication as it occurs in man or is induced in the lower animals.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER VI.

CATHARTICS.

Cathartics are among the most ancient of all medicinal agents, rhubarb having been in use among the Chinese for more than forty-five centuries; senna and aloes were also used in ancient times.

Liebig supposed that saline cathartics in concentrated solution withdrew water from the blood by osmosis, thus maintaining the feces in a liquid or semi-liquid state. This idea gave place to Schmiedeberg's theory, which attributes purgation to the fact that the purgative salts, being slowly absorbed in the small intestine, come into the large intestine, where they prevent absorption of the intestinal contents, thus keeping the feces soft.

Heidenhain concluded that osmotic pressure and physiologic activity of epithelium are concerned in absorption from the intestine, and that the retardation of absorption by salts is due to a lessening of physiologic activity.

Wallace and Cushny studied the action of cathartics on absorption from the intestine, and found that those compounds which give precipitates with calcium salts retard absorption more than others, and that dilute solutions of saline cathartics retard absorption of fluid from the stomach and small intestine, thus rendering the intestinal contents more fluid and more easily moved through the alimentary canal by peristalsis.

When Jaques Loeb studied the effects of certain salts which cause rhythmic contraction of muscle, he noticed that those which produce muscular twitching and an increase in the excitability of nerves are the same which produce catharsis when they are introduced into the intestine. J. B. MacCallum investigated the effects of saline purgatives when injected subcutaneously, intravenously, and when dropped on the peritoneal surface of the intestine. He found that all the saline purgatives are very much more active when injected into the blood, causing peristalsis more promptly and in very much smaller doses than when given by the mouth. This is also true of their injection subcutaneously or of merely dropping the solution on the peritoneal surface of the intestine. He further found that this action is inhibited by a small amount of calcium chloride or magnesium chloride solution, when it is injected, or when dropped on the peritoneal surface of the intestine. This inhibition is entirely analogous to that which occurs with calcium chloride after stimulation of skeletal muscle by sodium citrate and other salts.

MacCallum also found that the saline purgatives cause a greatly increased secretion into the lumen of the intestine; this occurs even when excised loops of intestine are suspended in saline solution, and he considers this intestinal secretion as much the more important factor in maintaining the feces in a semi-fluid state. So far from admitting that the salines cause purgation by being excreted into the intestine after intravenous injection, he claims that they must be absorbed from the intestine into the blood in small amounts, at least,

10. Hyman v. d. Bergh: *Deut. Arch. f. Klin. Med.* vol. lxxxiii, p. 86.

before they can cause increased peristalsis and the stimulation of the intestinal glands to increased secretion, pointing, in support of this theory, to the much more rapid action when such small amounts are injected into the blood stream, than when they are injected into the stomach or intestine. The stimulation of secretion and peristalsis in excised loops shows that it may be independent of the central nervous system, and the ring-like contractions seen after the application of barium chlorid points rather to its action on the muscular fibers than on the nervous mechanism of Auerbach's or Meissner's plexus, but the precise seat of the action has not been determined. As an example of the minuteness of the dose required when the drug is applied to the peritoneal surface of the intestine, it is stated that three-fourths of a milligram (1/80th grain) of barium chlorid caused peristalsis in the rabbit.

Vegetable cathartics, such as cascara sagrada and rhubarb, were also found to be much more effective when used intravenously or subcutaneously than when given by the stomach. Their action is also inhibited by calcium chlorid, but to a less degree than in the case of salines.

While these experiments are interesting in explaining the mechanism of catharsis, it is not to be understood that the cathartics can be used intravenously or even hypodermically, except in rare cases. Barium chlorid is very poisonous, and even a small amount of magnesium sulphate injected into the blood would prove fatal. Meltzer and Auer have recently stated that magnesium salts immediately inhibit intestinal peristalsis when they are injected into the vein of an animal. MacCallum's work, on the other hand, corroborates that of Claude Bernard, who found in 1857 that magnesium sulphate caused peristalsis when injected subcutaneously.

Among the curious theories advanced to explain catharsis is that of Groesbeck Walsh, who remarks that the actions of cathartics in general agree with bacterial action in the liquefaction of feces, in causing increased peristalsis and increased gas formation. Hence, he concludes that the cathartics act mainly by promoting bacterial activity. Even the action of calomel is thus explained, as it inhibits the growth of other bacteria, thereby promoting the rapid increase of the colon bacillus with the results just mentioned.

The use of purgatives is so general that it is usually considered a safe and harmless course, even when it does no good. This is true in the vast majority of cases, but Dr. M. L. Harris has recently called attention to the abuse of cathartics in conditions where they are potent for much harm. Among these he mentions: Closure of the intestine, as by strangulated hernia; complete local intestinal paralysis; localized spasmodic constriction, which tends toward spontaneous cure, but demands opium rather than cathartics; appendicitis and peritonitis, in which it is agreed that irritant cathartics, at least, are contraindicated, whatever the individual opinion may be in regard to the use of the salines.

Among the possibilities for direct harm it may be pointed out that when a portion or the intestinal tract is paralyzed, which may occur in ptomain poisoning, active cathartics might produce intussusception by driving the healthy contracted bowel into the paralyzed relaxed portion.

Classification of Cathartics.

There is a fairly sharp distinction to be drawn between the action of the irritant vegetable cathartics and the non-irritant salines. One class of the vegetable cathartics depends for the activity of its members on derivatives of anthracene, another class on the resin anhydrides. The preparations of the crude vegetable cathartics are usually but slight, soluble in water and dilute acids, but readily soluble in alkalis; they are, therefore, not absorbed from the stomach to any great extent, but, being soluble in the intestinal contents, they act by irritating the bowel, or by being in part absorbed. They are much slower than salines in their action, producing evacuation of the intestine only after from five to twenty-four hours with moderate doses. These facts are of much importance in choosing a purgative when there is inflammation of the intestine or other abdominal organs, as well as in pregnancy, since the irritation of the more drastic cathartics, by extending to the gravid uterus, may induce premature expulsion of the fetus.

Treatment of Constipation.

First in the treatment of constipation, for which purgatives are well-nigh universally employed, stands diet. By this means alone a very large proportion of cases of chronic constipation might be cured. It should contain a certain amount of indigestible residue, contrary to popular belief, and if the patient, in addition to correcting the diet, takes a fair amount of exercise in the open air and goes regularly to stool, but little purgative medicine will be needed.

The effect of stewed prunes and other fruits is too well known to require detailed mention; apples, figs and strawberries are equally useful. It should also be remembered that a glass of cold water, alone, taken on rising, will often act as a laxative.

Such simple remedies should always be tried before resorting to drugs in chronic constipation, since the habit of taking laxatives is easily formed, but not so easily dispensed with.

Hydragogue cathartics are sometimes used in dropsy and to relieve the kidney.

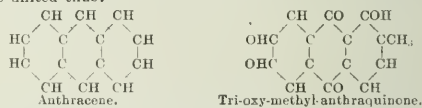
The excessive development of bacterial poisons in the intestine and their absorption into the blood cause symptoms varying from mere lassitude to profound shock. Purgatives sweep the bacteria and their poisons from the canal.

Diarrhea, due to the presence of irritating matter, such as undigested and fermenting food, is often promptly relieved by a saline purge. Saline purgatives are also useful in reducing fever, but they are not suited to cases of an asthenic type, because of the exhaustion which they produce.

We shall consider the more important of the official vegetable cathartics in this and the succeeding chapter, confining ourselves somewhat closely to their pharmacology, and in Chapter VIII we shall take up the salines, in connection with which we shall try to sound human credulity to its depths, with examples of the acme of impudent misrepresentation on the part of the makers of nostrums of the Epsom salt type.

The Anthracene Derivatives.

The vegetable cathartics of the first group which we shall discuss depend for their action on substances derived from anthracene. The graphic formula of this substance will help to show the relationship existing between several of these derivatives. Anthracene ($C_{14}H_{10}$) consists of three benzene rings united thus:



If an atom of H in the anthracene group is replaced by one of O, the compound is called anthraquinone or anthrachinone. Other atoms of H may then be replaced by OH and the compound is called oxyanthraquinone, a prefix to the *oxy* showing the number of such OH groups in the compound; thus the name tri-oxy-methyl-anthraquinone indicates that four H atoms of anthraquinone have been replaced, three by OH groups and one by a methyl group CH_3 . This compound is known as emodin.

Emodin is found in all the drugs which owe their activity to the anthracene derivatives, but its constitution may vary in the arrangement of the substituted OH groups in different plants. Natal aloes contains no emodin, hence it is not a purgative for man, but it is not found in commerce at the present time.

Other members of this group of cathartics contain other principles besides emodin, which are derived from the anthracene nucleus; thus chrysophanic acid, or di-oxy-methyl-anthraquinone, is also found in rhubarb, senna, rumex and probably in frangula. The name indicates that there are but two OH groups instead of three, as in the case of emodin.

Many other substances, the chemistry of which is obscure, are found in the cathartic drugs.

Preparations of the crude drugs contain colloidal matter which enhances the action of the pure principles, and they are therefore to be preferred to the latter; a fact to be remembered when reading the circulars of those nostrum makers who lay stress on their extraordinary facilities for supplying pure principles.

The drugs of the anthracene group are characterized by a mildly irritant action whereby they purge without producing inflammation, hence they are to be preferred to the resin anhydrides in chronic constipation, or when a strong irritant action is contraindicated.

ALOË.—U. S.—Aloes, including the Barbadoes, Curaçao, and the Socotrine, is the inspissated juice obtained from various species of aloë. It was known to the early Egyptians and Romans. One or more of the various species of aloes is official in every pharmacopeia. Natal aloes is now interesting only from a scientific point of view.

Average dose (of aloes): 0.25 gm. (4 grains).

ALOË PURIFICATA.—U. S.—This was made official in 1860, because of the impurities present in Socotrine aloes, due to the crude method of collection. The dose is the same as that of aloes.

ALOINUM.—U. S.—This is a neutral principle, varying in physical and chemical properties with the variety of aloes from which it is obtained. It does not fully represent the crude drug, medicinally.

Average dose: 0.05 gm. (1 grain).

EXTRACTUM ALOËS.—U. S.—This is the aqueous extract evaporated to dryness.

Average dose: 0.12 gm. (2 grains).

PILULÆ ALOËS.—U. S.—Each pill contains 0.13 gm. (2 grains) of purified aloes and an equal amount of soap.

Average dose: 2 pills.

PILULÆ LAXATIVÆ COMPOSITÆ.—U. S.—Each pill contains: Aloin, 0.013 gm. (1/5 grain); strychnin, 0.0005 gm. (1/125 grain); extract of belladonna, 0.008 gm. (1/8 grain); ipecac, 0.004 gm. (1/16 grain); and glycyrrhiza, 0.045 gm. (2/3 grain). This a substitute for the proprietary pills, which under a variety of names have attained a wide popularity.

Average dose (laxative): 1 pill.

The other official preparations into which aloes enters are: Pills of Aloes and Iron, Pills of Aloes and Mastice (the well-known Lady Webster's Dinner Pill), Pills of Aloes and Myrrh, Compound Pills of Rhubarb, Vegetable Cathartic Pills (no calomel), Compound Cathartic Pills, Tincture of Aloes, Tincture of Aloes and Myrrh, and Compound Tincture of Benzoïn. The last-named preparation does not contain enough aloes to make it useful as a laxative. Pills of Aloes are a convenient form of administration, the soap furnishing the alkali needed for developing the activity of aloes. The pill acts slowly and causes considerable pelvic congestion, hence it is useful in inducing delayed menstruation and increasing it if scanty. For the same reason it, more particularly than other members of the group, is contraindicated in fevers, pregnancy and in inflammatory conditions of the pelvic organs. Alone, it is not so useful in chronic constipation, but it is often added to other purgatives. The Compound Cathartic Pill is the most popular of these combinations.

Bile appears to increase the activity of aloes, and the formula given below is suggested as a suitable form of administration:

| | |
|----------------------|-----------|
| R. Aloë | |
| Fel bovis insp. | |
| Saponis | ââ gr. xx |

M. Sig.: Make 15 pills, of which three are taken at a dose.

These may be coated with salol, to prevent their disintegration in the stomach. The coating is readily done by simply melting the salol in a shallow tin vessel, into which the pills are then dropped, and the vessel twirled until the salol solidifies. This method of coating is also applicable to other so-called enteric pills, which are intended to dissolve only in the intestine.

The Tincture of Aloes is so bitter that it is rarely used internally, but it is sometimes applied to bed sores and other local affections. Aloin alone is not so effective as aloes, but it is extremely popular in such combinations as the Compound Laxative Pill, which acts mildly after about sixteen hours.

SENNA.—U. S.—The Alexandria (short) and the Tinnively, or Indian (long), senna are included in the official title. One, or both, of these is official in every pharmacopeia.

Average dose: 4 gms. (60 grains).

FLUIDEXTRACTUM SENNÆ.—U. S.—This is now directed to be made by first removing the resin with strong alcohol and subsequently extracting the drug with diluted alcohol.

Average dose: 2 c.c. (30 minims).

SYRUPUS SENNÆ.—U. S.—Syrup of Senna is now a very much more acceptable preparation than was that of the previous Pharmacopeia, and the physician should see that his patient gets the better article when it is prescribed.

It represents 25 per cent. of the fluidextract, from which the principle that causes griping has been removed with alcohol, with oil of coriander to flavor. It supplies an excellent substitute for the nostrums now becoming obsolete, which depend on senna for their activities, such as castoria and the various "fig syrups," so called.

For children one or two teaspoonfuls given alone at bedtime act as a gentle laxative; twice as much may be given as a cathartic. For adults twice as much is given as to children.

This preparation is not disagreeable to the taste, but since children are usually averse to anything called medicine, it may be given in a little cocoa.

Average dose (as laxative for children): 4 c.c. (1 fluidrachm).

PULVIS GLYCYRRHIZÆ COMPOSITUS.—U. S.—This powder, previously mentioned, contains 18 per cent. of Senna. It is widely used as a laxative.

CONFECTIO SENNÆ.—U. S.—This represents 10 per cent. of Senna, with cassia fistula, tamarind, prune and fig. It is substantially the same as the well-known proprietary medicine "Tamar-Indien."

Average dose: 4 gms. (60 grains).

INFUSUM SENNÆ COMPOSITUM.—U. S.—Formerly known as "black draught" (not black drop!). This represents 6 per cent. of senna, and 12 per cent. each of manna and magnesium sulphate, flavored with oil of fennel.

Average dose: 100 to 200 c.c. (3 to 6 fluid ounces).

The other only official preparation containing Senna is: The Compound Syrup of Sarsaparilla.

Senna is one of the best of remedies for chronic constipation, as its use does not entail a still greater tendency to that condition. It has the disadvantages of a disagreeable taste and of causing griping, if used alone; this tendency is overcome by combining it with aromatics. The confection is useful for children and in pregnancy. The milk of the nursing mother who takes Senna may purge the child. The resin which causes griping may be removed by extracting the leaves with alcohol without loss of the cathartic principle, the official fluidextract being made from Senna which has been thus treated.

The compound infusion or the confection may be used alone. The Compound Powder of Glycyrrhiza is an extremely popular laxative.

RHEUM.—U. S.—Rhubarb is obtained in Tibet and China from sources still undetermined. This valuable drug has probably been in use longer than any other substance now used wholly as a medicine.

Average dose: 1 gm. (15 grains).

The official preparations of Rhubarb are so numerous that we shall merely enumerate them, most of them being too well known to require extended notice. They are: The Extract, Fluidextract, Compound Pills, Compound Powder, Syrup, Aromatic Syrup, Tincture and Aromatic Tincture.

The average dose of either syrup is 8 c.c. (2 fluidrachms); of the tincture, 4 c.c. (1 fluidrachm); of the aromatic tincture, 2 c.c. (30 minims).

Rhubarb is useful in constipation associated with indigestion and catarrh of the small intestine, but not in chronic constipation, as the tannin present tends to increase the trouble after a time. All of the preparations are useful, but the aromatic syrup and the compound powder are probably the most popular, being especially useful in the summer diarrhœa of children. The extract, the fluidextract and rhubarb in powder are all useful laxatives. The compound pills are said to be more useful in the expulsion of gas and in chronic constipation. They are very commonly given alone. The following has been much used, but it is largely empirical:

| | | |
|----------------------------|--------|------|
| R. Extr. rhei | | |
| Ferri reducti. ââ..... | gr. lx | 4 |
| Arseni trioxidi..... | | |
| Strychnine sulph., ââ..... | gr. i | 0/06 |
| Quinine sulph..... | gr. lx | 4 |

To be made into 40 pills; one to be taken before each meal.

RHAMNUS PURSHIANA.—U. S.—Cascara Sagrada, or "sacred bark," is directed to be gathered a year before being used. It was introduced into medical practice in 1877, but as a domestic remedy in habitual constipation it was in use some time before that date in the region to which it is indigenous—the Pacific slope. It is now official in a number of pharmacopeias. It is not given in substance.

FLUIDEXTRACTUM RHAMNI PURSHIANÆ.—U. S.—This is prepared with 40 per cent. alcohol.

Average dose: 1 c.c. (15 minims).

FLUIDEXTRACTUM RHAMNI PURSHIANÆ AROMATICUM.—U. S. The crude drug contains a bitter acid principle which is neutralized in this preparation with magnesia, orange and glycyrrhiza being added to flavor and sweeten it. There is no special skill required in making this preparation, and any reputable pharmacist can make it equally as well as the manufacturers who put it on the market in the form of proprietary preparations.

Average dose: 1 c.c. (15 minims).

EXTRACTUM RHAMNI PURSHIANÆ.—U. S.

Average dose: 0.25 gm. (4 grains).

Cascara sagrada is probably the most useful laxative in the materia medica for chronic constipation. Unlike most of these remedies, which demand increasing doses, it improves the digestion, and the dose may be gradually diminished. Owing to the very disagreeable taste of the fluid extract, the aromatic fluid extract, or the extract, in pills or capsules, is to be preferred.

(To be continued.)

Clinical Reports

REPORT OF TWO CASES OF MALIGNANT ENDOCARDITIS.

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CASE 1.—F. D., boy, aged 16.

History.—Both of his parents are alive and well. The boy had always been well up to a month before entering St. Thomas Hospital. At that time he contracted an attack of gonorrhea and about a week later suffered from what was considered la grippe, with throat symptoms predominating. The illness which brought him to the hospital was diagnosed typhoid fever and was of about a week's duration. He had pains in his back and head, fever and delirium.

Examination.—Physical examination showed a well-developed and well-nourished boy. He was partly delirious and very apathetic. Pulse was 110, temperature 103.6. The eyes reacted to light and to accommodation. The tongue was flabby and coated. The lungs were negative.

Examination of the heart showed diffuse, forcible pulsation visible over the whole heart area, and more pronounced at the apex. This pulsation was also readily palpable. Percussion showed an enlarged heart area in all directions, especially downward and to the left. Auscultation revealed an extremely loud, harsh systolic murmur heard over all the heart area, but more distinctly at the apex. This murmur was transmitted to the left axilla and to the angle of the scapula. The pulmonic second sound was accentuated.

The spleen was greatly enlarged, tender and readily palpable. The liver extended downward to the level of the umbilicus and was tender on palpation. The abdomen was distended, painful and tympanitic. No roseola was seen. The left elbow was slightly swollen, red and tender. The urethra showed a purulent discharge containing gonococci. The reflexes were normal.

Course of the Disease.—During the two weeks the patient lived after his entrance to the hospital he was more or less delirious and sweated profusely. His pulse ranged from 90 to 140, and the temperature from 99 (almost normal) to 105.

Blood examinations showed 14,500 leucocytes, 4,000,000 reds, and 70 per cent. hemoglobin. Differential counts showed the number of polymorphonuclear neutrophils to be relatively largely increased. No plasmodia were seen. The Widal test was negative. The urine showed a large amount of albumin,

with hyaline and granular casts. The diazo reaction was negative.

Diagnosis.—The laboratory findings all seemed against the diagnosis of typhoid fever, so a diagnosis of malignant endocarditis was considered. It was difficult to say whether the endocarditis was due to a gonorrheal infection or whether the attack of la grippe was really rheumatic, with the chief symptoms showing in the throat. The fact that only one joint, the left elbow, was involved rather pointed to a gonorrheal origin.

Treatment.—The patient was given supportive treatment, and the usual remedies in endocarditis were administered, but without avail. The boy died about two weeks after his entrance to the hospital.

Autopsy.—A partial autopsy was allowed by his parents and this was performed by Dr. Philip King Brown.

The lungs were normal. The heart was greatly enlarged and softened and there were many fresh vegetations on the mitral valve. A small abscess was present near the base of the aorta. The spleen and kidneys both contained many septic infarcts. A small abscess was present in the prostate gland.

Cultures from the mitral valve, the base of the aorta, and the prostate showed a typical growth of the gonococcus of Neisser.

CASE 2.—Mrs. S. T., Italian, aged 35, was the mother of six children, and had had one miscarriage between the third and fourth child.

History.—The patient was always a large, healthy woman until two years ago, when she had an attack of acute articular rheumatism. From that time until five months ago, when her present trouble began, she had fainting attacks at irregular intervals. The present trouble began with an attack of right-sided pneumonia, since which she had lost weight and strength and had had daily attacks of sweating. Her appetite had been very poor and capricious. During these months she was treated for malaria.

Examination.—Physical examination at St. Thomas Hospital showed a thin, debilitated woman, very apathetic, complaining of pains in her head and limbs. Her appetite was poor and the bowels were constipated. Temperature was 101 and pulse 106. Inspection of the eyes showed pupils equal and sclera quite yellow. The tongue was clean. The lungs were normal.

Examination of the heart showed visible and palpable impulse over the precordial area, most pronounced at the mid-apex. The left border of the heart was just outside of the left clavicular line. A harsh mitral murmur at the apex was transmitted to the left axilla and to the angle of the scapula. The liver was not enlarged or tender. The spleen was not palpable or tender. The abdomen was not distended or tender, although the patient complained of pain about the umbilicus and in the epigastrium. There was no roseola. Nothing abnormal was found on vaginal or rectal examination. The reflexes were normal, and examination of sputum for tubercle bacilli was negative.

Blood examination showed white cells, 15,500, with a large relative increase of polymorphonuclear neutrophils; red cells, 4,100,000, and hemoglobin 70 per cent. No nucleated red cells or plasmodia were seen.

The urine contained granular casts, but no albumin. The diazo reaction was negative, as was the Widal test. The bowel movements were small and dark colored. No intestinal parasites or their ova were present.

Course of the Disease.—The patient kept getting gradually worse and had daily sweats and pain in head and limbs. Two days before death she developed a left-sided hemiplegia.

Diagnosis.—There being no other physical signs present but the enlarged heart and mitral murmur, and the blood findings and previous history of rheumatism and pneumonia pointing in that direction, a diagnosis of malignant endocarditis was made.

Typhoid fever was eliminated by the length of time she had been ill, the number of leucocytes, 15,500, and the absence of the diazo and Widal reactions. No tubercle bacilli being present in the sputum and no physical signs being present in the lungs, tuberculosis seemed unlikely. There was no wound or focus of infection discoverable, other than the heart, to ac-

count for a pyemia. Malaria could be excluded by the leucocyte count, the character of the cells and the absence of plasmodia. Uncinariasis was considered, but the absence of eosinophiles in the blood and of the ova of the parasite in the stools made this improbable. The development of the hemiplegia just before death strengthened the diagnosis of endocarditis, as the symptom was probably due to an embolus.

Autopsy.—A partial autopsy was obtained. This showed the lungs to be free from disease, except for some old adhesions of the right pleura to the chest wall. The heart was enlarged and both new and old vegetations were present at the mitral valve, one of the new ones being as large as a white bean. The abdominal organs were normal and no latent gallstones were present in the gall bladder.

Cultures from the mitral valve were taken. These were examined by Dr. Harold Brunn in the laboratory of the medical department of the University of California and a pure growth of pneumococcus was found.

A REMEDY FOR CHOLERA.

REV. CLARENCE D. USSHER, M.D.

VAN, TURKEY, ASIA.

Recently I picked up a piece of paper, apparently cut from some medical journal for the purpose of reinforcing a binding, and my eye caught the statement, by some one who apparently wrote as an authority, that "until now no remedy for cholera has been discovered," "all bad cases die [*sic*], in spite of remedies." The writer also expressed the opinion that the patients who recover would recover without medicine. About the same time I learned that cholera was spreading in Europe and that there was panic in places.

These things lead me to feel that I have been remiss in my duty as a physician in not putting definitely before the profession the results of treatment of cholera in Van during an epidemic of six weeks' or more duration in the early part of this year.

As the only foreign physician within a week's journey in any direction, my duties are heavy and prevent me from making a scientific report or even keeping satisfactory records of the numerous cases seen. I wish simply to report a fact and to let others work out details for themselves.

I claim no credit as discoverer of the remedy, nor for its application. Koch of Berlin discovered that "quinin in solution of from 1/1000 to 1/2500 would kill the cholera germ in from ten to thirty minutes." This was applied by Graham and reported by E. B. Fullerton¹ of Columbus, Ohio, from whose report I obtained my suggestion. I wish to corroborate the statements made there and to say that cholera has lost its horrors here through the use of quinin sulphate (or bisulphate, preferably the sulphate) in ten-grain doses every hour till bile reappears in stools; from forty to eighty grains have been given. The quinin is not absorbed, but acts in the intestines. Aromatic sulphuric acid lemonade proved a satisfactory prophylactic. Sulphate of copper, 1 to 100,000, for drinking and washing purposes stopped the disease and stamped out the epidemic in the military barracks where hundreds had died.

With quinin, more than 90 per cent. of the patients recovered, including those brought to our hospital moribund.

With the old lines of treatment, every patient during the first week succumbed, testifying to the virulence of the epidemic. Saturday night at midnight I learned of the new remedy, and after that lost but two patients seen before they were moribund.

Our hospital treatment consisted of the following: Quinin sulphate, gr. 10, every hour till rice-water stools ceased and bile reappeared; sweet spirits of niter, dry cupping heat and friction for suppression of urine; saline injections when the wrist pulse had disappeared (but some patients in this condition recovered under quinin treatment without injections). Occasionally a diarrhea mixture was used when intestinal activity was excessive after the reappearance of bile in the stools. Where irritability with foul odor persisted, five grains of a mixture of equal parts of the sulphophenolates of zinc,

calcium and sodium were given at intervals of from two to four hours.

I am so fully persuaded that quinin is nearly a specific for cholera that I feel it my duty to ask you to give this as wide publicity as possible.

A Columbus physician has criticised missionary physicians for not giving the world more benefit from their necessarily large experience. For my part I must confess that my seclusion here for eight years makes me diffident about putting my humble thoughts before my more scientific brethren who have kept abreast of the times.

EPIGASTRIC MURMUR CAUSED BY A DISPLACED DISTENDED GALL BLADDER.

C. M. COOPER, M.B., M.R.C.S.

SAN FRANCISCO.

Epigastric murmurs are well known to be of both intra-vascular and extravascular origin. Thus any tumors which lie over the artery, e. g., a pyloric or pancreatic carcinoma may press on this vessel and give rise to systolic murmur or to a marked visible localized pulsation. Hence it has become a well-recognized clinical custom to examine patients who present localized pulsations and murmurs of doubtful origin in the knee-chest position. I wish, however, to report a case in which localized pulsation which was actually expansile, together with a systolic bruit, were present in the epigastric region, these signs being due to a distended, displaced gall bladder. The key to the diagnosis lay in the disappearance and reappearance of these signs coincident with the partial emptying and refilling of the cystic swelling. Operation demonstrated the mesial position of the gall bladder. After operation the murmur disappeared, and an autopsy some months later showed an absence of any arterial abnormality. Such a case suggests that we should not only examine these patients in the knee-chest position, but also in the right and left lateral postures so that the falling back of displaced organs into their original lateral position may be favored and thus elimination be made more comprehensive. Systolic murmurs, of course, have been long known to occur in association with attacks of acute cholecystitis, as do friction murmurs, and probably too little attention is paid to these diagnostic auscultatory phenomena, but it is not in such a category that the above mentioned case belongs. I have notes of a somewhat similar case, in which, however, the diagnosis was not confirmed by operation or autopsy, and hence, though very suggestive, is unreportable. The co-existence of gall bladder disease with a murmur due to another cause not infrequently occurs. The adoption of the right and left lateral postures will, I believe, aid in the diagnosis.

ADAMS-STOKES' DISEASE.

E. SCIMOLI, M.D.

SAN FRANCISCO.

A case of Adams-Stokes' disease which I had the opportunity to observe presented symptoms of heart block. There were from three to four auricular contractions to one ventricular beat. During the attacks the ventricle stopped entirely, while the auricular rhythm kept on undisturbed. The patient died after twenty-four hours.

In view of the experimental work on heart block done by Erlanger and Hering I felt justified in diagnosing a lesion of the auriculo-ventricular bundle of His.

The postmortem was limited to the heart. Macroscopically no lesion could be detected, but the microscopic examination by Dr. Ophüls showed scar formation in and around the bundle of His just below the membranous septum.

¹ *Lancet*, Annual, 1896, D. 12.

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AN ADVANCE IN CYTOTOXIC STUDIES.

When in 1899 v. Dungern found that a specific immunity could be obtained against epithelial cells, and suggested the possibility that in this direction might be sought an immune serum against cancer, intense interest was immediately awakened in the subject of cellular toxic serum. The simplicity of the method of investigation attracted many to the work, for all that was necessary was to inject an emulsion of the cells to be studied into the peritoneal cavity of a laboratory animal, obtain the blood serum of the animal after it had been injected several times, and inject the serum thus obtained into normal animals of the same species as the one that had furnished the original cells. Within a few months the literature teemed with more or less hasty reports of the discovery of serum toxic for nearly every cell in the body. Animals injected with serum of animals immunized against kidney tissue were found to develop renal lesions, and so the serum was said to be nephrotoxic; similarly hepatotoxic, cardiotoxic, neurotoxic, thyrotoxic, and every other organ and tissue toxic serum was described.

Most of the first reporters described the serum as specific for the organ used in the immunizing, but soon it began to be noted that this specificity was at the best quantitative; that is, the organ against which immunity was sought was most affected, although other organs might also show more or less degeneration. In some reports the type of organ furnishing the injected cells was even less affected by the immune serum than some of the other organs, particularly the liver and kidney. Furthermore, the immune serum was found to contain substances agglutinating red corpuscles; and agglutinated red corpuscles, by plugging up capillaries, are capable of causing much degeneration in many organs and tissues of the body. Finally it became clear that injections of ground-up organs did not produce a specific immunity against the chief cells of that organ, even when the precaution was taken first to wash out the blood. The work of Pearce was particularly conclusive in this respect, showing that immunity against specific cells is difficult or impossible of attainment. Because of these unsatisfactory results interest in cytotoxic serums has waned, in spite of the great importance that the work would have if it were successful.

A new method of attacking the problem has been devised by Beebe,¹ which offers hope of greater success.

Beebe isolated from a number of organs the nucleoproteids (kidney, liver and pancreas) and immunized rabbits against them. The serum so obtained, when injected into dogs, was found to possess a much greater degree of specificity than has been obtained by immunizing with the organ emulsions. Serum of animals immunized against kidney nucleoproteids caused severe renal changes both in the structure and function of the organ, being fatal in a few days, and did not affect the liver. Immune serum for liver nucleoproteids caused severe hepatic changes and was almost without effect on the kidneys. Antiserum for pancreas nucleoprotein seemed to be equally specific.

The explanation of these successful experiments may be as follows: Every cell contains a number of proteids, of which the nucleoproteids are probably the most important and in many cells the most abundant. The other proteids are considered by many physiologists as largely adventitious, chiefly existing as food stuffs or as intermediary steps in the formation and destruction of the more complicated nucleoproteids. Furthermore, the nucleoproteids are probably the most specific constituents of the cells. The other cell proteids, as well as the carbohydrates and lipoids, are, so far as our imperfect knowledge of cell chemistry permits us to judge, much the same in the cells of different organs, but the nucleoproteids of different organs show quite distinct differences in composition, great enough to be detected by the relatively crude methods at our disposal. By using the nucleoproteids of an organ, therefore, we secure the specific ingredients and reject the nonspecific, an important step in seeking for specific cytotoxins.

The chief criticism that can be made of Beebe's work is the relatively small number of experiments, five with nephrotoxin, three with hepatotoxin, two with pancreatotoxin; a criticism that will undoubtedly soon be met with a report of further investigations of this important subject.

THE TREATMENT OF TUBERCULOSIS BY TUBERCULIN.

Recently¹ we called attention to the views of A. E. Wright of London regarding the treatment of diseases due to endotoxic bacteria by means of vaccines. In a recent article Wright² gives his latest views regarding this method of treatment and refers to his results in tuberculosis.

It will be remembered that Wright's method of administering bacterial vaccines, i. e., sterilized and standardized suspensions of micro-organisms, based on the fact that in bacterial diseases there are times when the body resistance is lower than normal, and times when it is higher. Wright measures the resistance to the particular infecting germ, in tuberculosis, for example, to the tubercle bacillus, by submitting a standardized culture of the organism to the action of the living leucocytes of the individual whose blood he is testing. The partic-

1. THE JOURNAL, December 23, 1905.

2. THE LANCET, 1905, vol. II, p. 1598.

ular antibacterial element measured by Wright's method is one which injures the bacteria so that they can be taken up by the leucocytes. Wright speaks of it as the opsonin. It is found that in a healthy individual the leucocytes will take up a certain number of bacteria, and this number is approximately the same in all healthy human beings. One whose leucocytes take up a number of bacteria corresponding to the number taken up by the leucocytes of a healthy person is said to have a normal opsonic index, and in disease the opsonic index may be either above or below normal. The fundamental principle underlying Wright's method is that bacterial vaccines must be administered only when the opsonic index is above normal, or, more correctly, when two tests taken at intervals have shown that the opsonic index is rising. If the vaccines are given when the opsonic index is falling they do harm rather than good.

In discussing the principles which ought to regulate the dosage of bacterial vaccines Wright calls attention to some fallacies which have become engrafted on the medical mind. One of these is the idea that in order to secure the greatest yield of protective substance it is necessary to give enough vaccine to produce a constitutional reaction of a marked character. Wright shows that this is not so at all, that just as good, and sometimes better, results are secured by small doses, and the patient is thus saved much discomfort. In tuberculosis Wright employs the new tuberculin in doses corresponding to from one-thousandth to one-six-hundredth of a milligram of tubercle powder and with perfectly satisfactory results. It seems quite certain that the mechanism which leads to the formation of antibacterial bodies is one which is easily stimulated, and it is very likely that it is possible to overstimulate it. The correctness of the dosage may be measured by testing the opsonic index, which shows a tendency to remain low longer than usual during the negative phase when too large doses are being given.

In discussing the manner of reaction of the organism in infections Wright makes a sharp distinction between general and local infections. Local infections, like lupus, for instance, tend to last for years, and he suggests that this may be because the bacteria causing them do not escape into the blood and give rise to the formation of antibacterial bodies, and because their situation places them in a position unfavorable to the action on them of such antibacterial bodies as may be present in the blood at the time the infection originated or during its course. In general infections, on the other hand, bacteria escape into the blood intermittently, but they do not always escape at a favorable time. If they escape during the time that the opsonic index is on the rise they, of course, do good, but if they escape during a period of fall in the opsonic index they may prove fatal. In discussing local infections it is also pointed out that the conditions are often unfavorable to the free circulation of lymph through the infected area, and, as the lymph carries the antibacterial bodies, this is a protec-

tion to the bacteria. It is to be noted that many of the old remedies for infection, based on empiricism, are agents which tend to increase the lymph circulation in the affected area. It is also to be noted that the surgical removal of an infected area, no matter how radical the operation, probably never removes all the nidus of infection, but it places whatever bacteria are left in a position in which they can be reached by the lymph circulation, and Nature completes what the surgeon began.

The results reported by Wright from his treatment of certain forms of tuberculosis are highly encouraging. The method has not been extensively tried in all forms of the disease, in lung tuberculosis, for example, but its use in these cases will doubtless follow. The most encouraging results followed the treatment of tuberculosis of the subcutaneous tissues and bone and tuberculosis of the lymph nodes. In the case of the former variety Wright reports so far uniform success, and the cases in which a cure was effected were those which had defied all other methods of treatment. The treatment of tuberculous lymph nodes was so successful that Wright predicts the abandonment of surgical and climatic methods in favor of tuberculin. Wright's methods have been slowly, but apparently surely, attracting more and more attention. We have seen appear in the past fifteen years not a few loudly heralded treatments for tuberculosis, only later to see them disappear discredited. Let us hope that at last we are on the right track.

A BILL TO PREVENT FRAUDS IN "PATENT MEDICINES."

A campaign of education against fraud and deception in the patent medicine business has been conducted by certain lay journals—principally *Collier's Weekly* and the *Ladies' Home Journal*—and the public's attention has been called, as never before, to the dangerous and fraudulent character of the majority of these preparations. The public is aroused; there is no doubt of this. But the public is made up of individuals and, as is usually the case, each individual waits for another to act. The *Ladies' Home Journal* seems to have recognized this fact and, having educated its readers to the point where they realize something should be done, proposes certain legislation and gives them a chance to do something. The February issue contains a bill for an act to be introduced into every state legislature that meets this winter. The bill which we reproduce on page 373 bears evidence of careful thought, and, while it is not perfect, it is as nearly so as we may hope to get one that can become a law in our legislatures.¹ "This is not a bill," Mr. Bok says, "of our individual drafting or of our own personal approval. It has been submitted and carefully gone over by the most distinguished and conscientious representatives of the law, of medicine and of the drug trade in this country. It is not a one-sided affair. It is not aimed to injure, but to protect. We

1. Bills to regulate the sale of "patent medicines" are now in three legislatures—Kentucky, Mississippi and New York.

have the best of reasons for believing and saying that the provisions of this bill will not be objectionable to those manufacturers of 'patent medicines' who have really an honest article and who are not afraid of putting the contents of their medicines on the label of each bottle. The honest men engaged in the 'patent-medicine' business are just as anxious as we are or any one else to stop the deceit and trickery running wild in their trade."

Mr. Bok devotes a page to a personal appeal to his readers to act, and undoubtedly many of them will respond, for, besides this, other matter appears in the current number of his journal, not the least important of which is a contribution by Mark Sullivan, who wrote the unsigned article in *Collier's* on "The Patent Medicine Conspiracy Against the Freedom of the Press." In the present article Mr. Sullivan tells us "How the Game of Free Medical Advice Is Worked."

Physicians are appealed to: "I would also ask the hundreds of physicians and medical associations, who have written to this magazine, to lend their attention and support to this legislation. With a very few exceptions, physicians and medical bodies all through the country have been singularly lax and remiss to the 'patent-medicine' measures which have come up before the state legislatures. Whatever may have been the causes for this remissness, it is now distinctly the part of every physician, and the organization to which he belongs, to take an active part in making this legislation possible and effective, so that legislators can no longer wonder at the absence of the medical profession at the hearings given these bills."

And this brings us to the point. What are we going to do about it? Shall we assist in this movement? No one knows so well as the physician the havoc caused by self-dosing on the part of the public. He sees, as no one else sees, the physical harm that results from the continual taking of, for instance, cathartic medicines, whether it be in the form of pillets, pills or "blood purifiers." He knows, as no one else knows, that taking such medicines produces the very ills they are supposed to cure; that nine out of ten cases of chronic constipation—the cause of so many minor ailments—are the ultimate result of the continual use of cathartics. The physician knows, as does no one else, the harm resulting from the indiscriminate use of medicines containing opiates of various kinds; that soothing syrups, nerve sedatives and acetanilid mixtures, if used without due regard to their possible injurious effects, are liable to wreck, and do wreck, the constitution alike of the healthy infant and of the robust man and woman. Medicines containing alcohol, the "bracers," have the same temporary effect and ultimate results as whisky, and everybody knows this as well as the physician, but everybody does not know, as he does, how large a number of the "patent medicines" belong to this class. No one knows as well as the physician that many of the ills for which "patent medicines" are taken are imaginary ones caused

by reading patent-medicine advertisements. And, most important of all, no one knows as does the family physician how many anxious wives, husbands, mothers and fathers use money to buy a fraudulent "patent medicine" for one they love when they need it to buy bread—because, in their desperate anxiety, they are ready to grasp at any proverbial straw, and the straw offers itself in the lying advertisements of the nostrum vendors.

We know that people are being swindled by "patent medicine" promoters as by no other class. We know that the taking of these nostrums is injurious, in many instances to a serious degree, and we know that the business unregulated is against public health as well as against public morals. As physicians we know all this by actual observation and by personal knowledge of definite instances, and as no others can. Is it, then, not our duty to fight these frauds? Suppose the "patent medicine" men's association and their mouthpieces do say that we are acting for selfish motives. What of it? We know that we are not, and the intelligent public knows it. In any event, as we showed last week, they are accusing us of instigating the fight, and we might as well deserve the vituperation of these nostrum men, since we get it anyway. In reality, there would be some apparent justification for saying that we are encouraging the use of "patent medicines" for selfish purposes, because, as Dr. G. A. Syme said in his address before the Australian Medical Congress last fall, the taking of "patent medicines" makes work for physicians, and, therefore, from a commercial point of view, it would be better for us if the "patent-medicine" men were given full sway.

The legislation asked for is not against "patent medicines" *per se*, but against the fraud and deception connected with them. Some of us might think that there should be no medicines sold direct to the public. This would be ideal in the minds of some, but, though ideal, it would not be practical. Further, there is no reason why an individual should not have the right to buy a cough syrup, a box of cathartic pills, a grain or an ounce of quinin, or any non-poisonous medicines. It is not worth while to strive for an impossible ideal—the prevention of the sale of medicines to the public; but it is worth while to strive for the possible. And a law to compel the manufacturers of medicines to state plainly what they contain is a possibility. Such a law is needed for the public good, and it seems to us that it is our duty to try to get such laws passed in every state in the union, and then we should educate the public to understand the harm that lies in those preparations that contain dangerous drugs.

These are the principles on which we must carry on the propaganda—absolute non-secrecy regarding the composition of the preparations and the truth regarding their effect on those that take them. Such a platform is sane, can not be attacked, and will receive the support of the public and of most of the newspapers, in spite of the fact that they would sacrifice some of their income

by giving such support. Of course, such a platform means a campaign of education lasting for years, in which we must take the lead, but in which we would have the support of the largest part of the public.

LIVING TYPHOID CENTERS.

An enthusiastic sanitary engineer is said to have remarked a few years ago that if all public supplies of drinking water could be obtained from unpolluted sources or purified by sand filtration, typhoid fever would soon become extinct. Far be it from us to decry the importance of infected water in disseminating typhoid fever, or to cause less stress to be laid on the sand filtration of municipal water supplies. No one with an understanding of the facts can doubt that during the last few decades contaminated water has been the chief means by which this insidious disease has been kept alive and distributed to widening circles in all civilized countries. The recent improvements in the quality of water supplies—a matter in which to our humiliation the United States still lags behind the leading countries of Europe—have had the secondary effect of directing attention to the existence of other important sources of typhoid infection. We have taken occasion in these columns to emphasize more than once the rôle played by close association or contact of the sick with the well.¹ At least one extensive epidemic—that at Winnipeg, Manitoba, in 1904-5—and many minor ones have been shown to be due principally to spread of the disease from case to case. The investigations conducted by the German government into the modes of occurrence and spread of typhoid fever in rural districts in Germany have done much to establish the frequency of cases due to contact. In connection with these investigations, a recent article by Lentz² serves to bring into relief a source of infection that is likely to prove especially difficult to evaluate and combat. It has been known for some time that typhoid bacilli in some cases might persist in the excretions of typhoid patients far into convalescence; Lentz has now brought to light the existence of a class of persons whom he calls "chronic carriers of typhoid bacilli." It appears from his researches that a certain proportion of typhoid-fever patients—a proportion that may be as high as 4 per cent.—carry living typhoid bacilli about with them for years after complete recovery from the disease. In one case examined by Lentz, typhoid bacilli were found in the excreta fifteen years after the attack, and were present during a period of two and one-half months when the observations were made. In another case bacilli were found in every examination (thirteen) made at intervals for twelve and one-half months after the attack. A history of the infection of associates by these chronic bearers of bacilli was obtained in some instances. A particularly serious aspect of this matter appears in the difficulty of disinfecting these living ty-

phoid centers. All the attempts made by Lentz to rid these "microbe bearers" of the typhoid or paratyphoid bacilli that they harbored signally failed, although a great variety of drugs were administered for the purpose. For the present there would seem to be little that can be done to obviate the menace of these microbe bearers to the community. The surveillance and bacteriologic control of such cases, although possibly desirable in a community endowed with the Prussian police system, is rather chimerical for less efficiently organized peoples.

CHRONIC ACETANILID POISONING.

That chronic poisoning from acetanilid is not uncommon is evident from the numerous cases that have been reported recently. In this issue is the report of a case by Herrick and Irons, in which the absorption of the drug was from an ulcer of the leg, to which the remedy had been applied almost daily for seven years for its analgesic effect. In this respect this case is a rarity, but it warns us that care should be exercised in the use of this drug in dermatology or as an antiseptic in surgery. Points of interest in connection with the chemistry of the urine in chronic acetanilid intoxication are also referred to in the article, but what is of most value, at least to the general practitioner, is the grouping together of the phenomena of this form of poisoning, making of it something like a clinical entity.

According to Herrick, the acetanilid habit is to be suspected in a patient who presents a secondary anemia, cyanosis, dyspnea, nervousness or gastrointestinal disturbance without an adequate explanation for it in heart, lungs or other organs. Splenic enlargement is not uncommon. The crucial test is the examination of the urine. This is commonly dark in color, it darkens still more on standing and contains an increased amount of conjugate sulphates and also paramidophenol. The general practitioner, although he may not be a chemist, need not feel that the examination of the urine in such cases is beyond him, for, as will be seen by consulting this article, the test for paramidophenol is simple.

If some of the obscure cases of neurasthenia, anemia, dyspepsia, etc., were more carefully examined, we believe an explanation for them would not infrequently be found in the acetanilid habit, the drug being taken either as such or as one of the ingredients of the many headache remedies and painkillers so easily obtainable at the drug store, and so often prescribed unknowingly by physicians.

The reports of such cases can not fail to have a wholesome influence. They stimulate to greater thoroughness in ferreting out the existence of this habit, lead to greater caution in the prescribing of this remedy, which, when improperly used, is so potent for evil, and encourage us all in our efforts to combat the manufacture, sale and use of the many nostrums that contain this really dangerous drug.

1. THE JOURNAL, Nov. 11, 1905, p. 1501.

2. Klin. Jahr., 1905, vol. xiv, p. 475.

CHICAGO HEALTH DEPARTMENT AND PURE-FOOD
LEGISLATION.

"The Chicago Health Department might well be engaged in better business than casting slurs, directly or indirectly, at the agitation for pure-food legislation." Such is the opening paragraph of an editorial in the *Chicago Record-Herald*, January 30. It is called forth by a statement in the *Weekly Bulletin* of the Chicago Health Department. The *Bulletin*, commenting on food adulteration, says: "The steadily increasing healthfulness of Chicago—which is alleged to be the head center of the nefarious industry—does not warrant the recent sensational statement that 'thousands' of people, instead of being nourished by what they eat, are slowly done to death by it." As the *Record-Herald* says, whatever exaggeration there may be in the statement quoted, certainly Chicago health statistics do not prove anything either for or against it. "Upward of 25,000 people die annually in Chicago alone, and certainly 'thousands' could die annually in the whole country from the indirect evil effects of impure food, without making any impression on the Chicago statistics which could be directly traced." It might be suggested to the health department that adulterated foods do not necessarily kill, even though the substances used may be poisonous in character, but that they do result in injury to health. While we are not here discussing the pure-food bill, it should be remembered that the bill is not only against poisonous adulteration, but it is against any adulteration, misbranding or deception. It is rather strange for a city health board to go out of its way to aid those who are fighting legislation in the interest of health and honesty, even though some of that city's business interests may be injured if such legislation is enacted. As the *Record-Herald* says, "The harmfulness of many kinds of adulterations has been proved repeatedly by scientific tests. The people who consume the adulterated goods have no means of protecting themselves, or, rather, they have no means except through common action in their state or national governments. They must be protected by law. The argument for a pure-food law goes, however, even deeper than this. It is at bottom an argument for the 'square deal' in the food industries. 'Honest labels' is a keynote of the proposed legislation. There is not nearly so big a trace of hysterics in the agitation for the reform as there is in the health department's unfriendly comment." We might suggest to the health department that there is one point to which they never call attention in making up their statistics, and that is that Chicago is a comparatively young city, that it has been growing rapidly during the last two or three decades—especially during the last ten or fifteen years—and that this growth is made up of young, vigorous, healthy people whose normal death rate ought to be low. We have no statistics at hand to prove the assertion, but no one will deny that Chicago has comparatively very few old people, and, consequently, that natural death from old age is very much less than in older communities. This comment of ours certainly has as much logical relation to the subject as the uncalled-for comment of the Chicago Department of Health concerning impure food.

SENSIBLE SANITARY MEASURES ON THE ISTHMUS.

For the steady progress in bettering health conditions at the Isthmus, Colonel Gorgas deserves great credit. On January 16, he reported that there was no quarantinable disease of any kind. During December there was but one case of yellow fever on the Isthmus. The morbidity continued very low, the rate being 19 to the 1,000. The heaviest death rate was due to pneumonia among the negroes, who do not use the precautions that white men exercise. The excellent report is an effective answer to the recent severe criticisms by Poultney Bigelow in the *Independent*. This correspondent criticized the insanitary location of Colon over a swamp, the poor houses, poor arrangements for disposing of night soil, etc., and called attention to the "absurd" system of sanitation which pays so much attention to mosquito work and fumigation. In reply to all such criticisms, Colonel Gorgas simply calls attention to the fact that the Sanitary Department on the Isthmus was not established to demonstrate any theory of disease. "We came for a practicable purpose," he says, "to decrease disease as much as possible. The 'absurd measures' have certainly so far accomplished this result. The facts stand forth that at present we have not a single case of yellow fever on the Isthmus, and during the whole month of December had only one; that malaria has been brought so well under control that our total sick rate is as small as that of any considerable body of men working anywhere in the United States. This writer, Mr. Bigelow, judges us by a sanitary standard of ten years ago and as applied to the temperate zones. He is apparently unaware that recently acquired knowledge has entirely revolutionized tropical sanitation. Our knowledge and experience in tropical sanitation have shown us that if every house in Colon had been supplied with modern plumbing and the buildings themselves had been well-built Philadelphia cottages, and we at the same time had had uncovered cisterns and water barrels, we would by this time have lost half our non-immune force from yellow fever. But if we look after the cisterns and water barrels and take the appropriate measures with regard to the sick from yellow fever, it is of very little importance whether we have a modern water closet or the more primitive pit." Colonel Gorgas goes on to say that what they are after is to get rid of yellow fever and to make the Isthmus inhabitable. In this he is certainly succeeding.

LIFE-SAVING PRECAUTIONS AGAINST THEATER FIRES.

Following the terrible Iroquois theater fire in Chicago, we commented on the experimental theater which was prepared in Vienna to test various safety devices. Consul-General Rublee of Vienna has just made a report on the tests made with this model. As nearly as possible exact reproductions were made of the conditions existing in actual theaters and old theatrical scenery and hangings were used, saturated with kerosene. Some of the conclusions were as follows: The most effective means of reducing the danger to the audience is to provide means for the escape of the dangerous gases and smoke through ventilators on the roof of the stage. When ventilators of sufficient size were opened, automatically or

otherwise, the fire was, to a great extent, confined to the stage, and a draft was caused from the audience room onto the stage, but when the ventilators were closed the auditorium was filled with gases, smoke and flames so speedily that the lives of many spectators would be imperiled. Further, in the latter case, the movement of the iron curtain was frequently interfered with by the pressure of gases from the stage so that it proved inadequate for protection. This latter point seems to us a very important one, in view of the great dependence now placed on the steel curtains. If a severe fire would cause this curtain to bind, or would otherwise prevent its descending promptly, another terrible fire may result, because the use of inflammable scenery has not been discontinued. These experiments further revealed the striking fact that when the ventilators were covered by wire screens the charred paper, fragments of scenery, etc., carried up by the draught, lodged against these wire screens and, to a greater or less extent, closed them, thus rendering the ventilators valueless. In this connection attention is called to the building law of New York City, which requires that underneath all of these smoke vents wire netting must be stretched. These points become very important when one realizes their relation to the present provisions in theaters in the United States.

Medical News

ILLINOIS.

Births Double Deaths.—The annual report of the State Board of Health shows about 65,000 deaths and 150,000 births in Illinois during 1905. The males born exceeded the females by about 6,000.

Winnebago County Election.—At the annual meeting of the Winnebago County Medical Society, held in Rockford, January 9, Dr. Thomas H. Cullhane was elected president; Dr. Robert C. Bourland, vice-president, and Dr. William E. Park, secretary and treasurer, all of Rockford.

State Board of Health.—At the twenty-ninth annual meeting of the State Board of Health, held at Springfield, January 25, the following officers were elected: Dr. George W. Webster, Chicago, president, and Dr. James A. Egan, Springfield, secretary and treasurer. Dr. Egan succeeds Dr. Peter H. Wesel, Moline, as treasurer.

Personal.—Dr. Mills F. Clark, assistant at the Illinois Hospital for the Insane, Elgin, has resigned and will settle in Massachusetts. —Dr. and Mrs. James W. Pettit, Ottawa, have gone to Texas for a visit. —Dr. Patrick H. Kelly, Chillicothe, was thrown from his buggy, January 19, dislocating his right arm at the elbow. —Dr. and Mrs. Matthew M. Hill, Taylorville, are recovering from a severe attack of ptomain poisoning.

Communicable Diseases.—Three cases of smallpox were discovered at the Illinois Central Hospital for the Insane, Jacksonville, January 27. Vaccination of the 1,200 inmates and 500 employes has been ordered and strict quarantine has been instituted. —Suspected smallpox has caused the State Board of Health to send an inspector to Hillsboro, Granite City and Venice. —Bloomington now has 10 families under quarantine for diphtheria.

Chicago.

Kirmess Nets Thousands.—The Cribside Kirmess realized about \$25,000 for the Children's Hospital.

Personal.—Dr. David J. Doherty leaves for Manila, via Spain, February 20. —Dr. Henry W. Cheney and family have left for Vienna. —Dr. and Mrs. W. J. Class have reached Paducah, en route by gasoline launch to Chattanooga. —Dr. Harrison L. Mettler has resigned as medical inspector of the Department of Health.

Deaths of the Week.—The 504 deaths reported are 107 fewer

than those of the previous week and 54 fewer than those of the corresponding week of 1905. On the basis of population the annual rate of the week is 16.7, and 12.2 per cent. lower than for the previous week and for the corresponding week of last year respectively. Bright's disease, 4 less; bronchitis, 10 less; consumption, 8 less; cancer, 14 less; heart disease, 8 less; influenza, 3 less; pneumonia, 25 less, and scarlet fever, 2 less, are among the important causes of death showing gratifying reductions. Only diphtheria, 6 more; acute intestinal diseases, 8 more; scarlet fever, 1, and typhoid fever, 2 more, show any increase. The death rate was equivalent to 12.82 per 1,000. Pneumonia caused 86 deaths and consumption 61.

INDIANA.

Beaven Again Fined.—Leslie Beaven, an osteopath of Vincennes, who was arrested several months ago, tried and convicted of practicing medicine without a license and fined, was again tried for a similar offense in the Daviess County Court at Washington, January 12, and fined \$25 and costs.

Memorial Hospital Staff.—At the annual meeting of the trustees of Reid Memorial Hospital, Richmond, the following medical staff was named: Drs. George H. Grant, David W. Stevenson, Allan L. Bramkamp, Charles S. Bond, Melville F. Johnston, Harry H. Weist, John M. Wampler, Isaac S. Harold, Stephen C. Markley, Joseph M. Bulla, Charles Marvel, T. Henry Davis and Joseph M. Thurston.

A Nonagenarian.—Dr. William H. Wishard, Indianapolis, celebrated his ninetieth birthday anniversary January 17. An informal reception was given which was attended by many members of the Indianapolis Medical Society. Dr. Wishard is one of the two surviving charter members of the State Medical Society. At the meeting of the society January 16 Dr. Frederick C. Heath, on behalf of Dr. William N. Wishard and other members of the family, presented an oil painting of the venerable physician to the society. On the evening of January 17 the family of Dr. Wishard gave a dinner to members of the profession and friends, at which about seventy were present.

Personal.—Dr. Albert H. Combs, Marion, has recovered from his recent illness. —Dr. and Mrs. Leo J. Weinstein, Terre Haute, have gone to Fort Collins, Colo., for six or eight weeks. —Dr. Schuyler F. Teaford, Paoli, has been appointed physician of Orange County. —Dr. Benjamin F. Whitmer, Goshen, expects to spend the winter in Pensacola, Fla. —Dr. Marcus H. Thomas, Huntington, sprained his knee while skating January 12. —Dr. S. K. Honser, Converse, has been reappointed health officer. —Dr. Guilford A. Mottier, Richmond, had a narrow escape January 6, when his buggy was struck by a switching freight train and demolished. —Dr. Charles Trueblood, Anderson, left for Oklahoma and New Mexico, January 14. —Dr. Thomas R. Barker has been appointed health officer of Danville. —Dr. Patrick G. Carlisle, Connerville, received severe scalp wounds during a windstorm January 15, when a large curved plate-glass window was blown from the fourth floor to the pavement, striking him as it fell. —Dr. A. P. Fitch, Lebanon, is seriously ill.

December Disease and Death.—Bronchitis and tonsillitis were almost equally prevalent in December and led the list of diseases. Pneumonia increased greatly over November. This is also true of influenza and rheumatism. Typhoid fever fell to fifth place in its area of prevalence. There were reported 112 cases of smallpox in 13 counties, with 1 death. In the corresponding month of last year there were 472 cases reported in 38 counties, with 8 deaths. Typhoid fever was reported in 53 counties. There were 2,657 deaths, corresponding to an annual death rate of 11.8 per 1,000. Certain important causes of death were as follows: Consumption, 336; typhoid fever, 66; diphtheria, 58; scarlet fever, 7; whooping cough, 9; pneumonia, 347; diarrheal diseases, 21; cerebrospinal meningitis, 40; influenza, 19; puerperal fever, 15; cancer, 90, and violence, 137. The cities show a death rate of 15.1 per 1,000 and the country a rate of 9.9. The death rate for Indianapolis was 15.6; Evansville, 15.1; Fort Wayne, 14.8; South Bend, 19.6; Terre Haute, 22.4, and Muncie, 10.7. Of the pneumonia deaths, numbering 347, 176 were males and 171 females. In the corresponding month last year there were 351 pneumonia deaths. Of the 137 deaths by violence, 5 were murders, 20 were suicides and 118 accidental. All of the murders were males, 4 being by gunshots and 1 not named. Of the suicides 13 were males and 7 females. Three males chose carbolic acid, 4 opium or morphin, 1 shooting, 2 hanging. Of the female suicides 4 chose carbolic acid, 2 cutting throat, 1 not named. Of the accidental deaths railroad injuries caused 24; street cars, 2; burns and scalds, 24; crushing injuries, 18; gunshot wounds, 12; falls, 8, and drowning, 3.

KENTUCKY.

Jury Disagreed.—Dr. Hugh R. Manning sued the Louisville Railroad Company on account of injuries done himself and automobile, when it collided with a car, and in a trial of the case in Judge Field's court the jury was dismissed because it could not agree.

Against Tuberculosis.—The Kentucky Anti-Tuberculosis Association held its annual meeting on January 8 and elected the following officers: W. C. Nones, president; the Rev. Dr. W. H. Ramsay and Dr. Jacob A. Flexner, vice-presidents; Theodore Harris, treasurer; Thomas D. Osborne, secretary. President Nones presented his annual report and stated that so far about \$9,000 of the necessary \$25,000 for the erection of the sanitarium had been secured by the association.

Legislation Proposed.—Among the flood of bills introduced in the state legislature of interest to the physicians are the following: One required that formulas of all proprietary medicines be published; appropriating \$110,000 for the extension of the State Feeble-minded Institute; appropriating \$23,000 for the Kentucky School for the Deaf, which contemplates improvement in the dining-room, painting and plumbing, new floors, steam pipe tunnels, electric wiring and teachers' salaries; \$35,000 to build additions to the Western Kentucky Asylum.

MARYLAND.

Anti-Tuberculosis Association Organized.—A meeting was held at State House in Annapolis January 23 for the purpose of organizing an Anne Arundel County Branch of the Maryland Association for the Prevention and Relief of Tuberculosis. Addresses were delivered by Drs. William H. Welch, William S. Thayer and John S. Fulton, and Senator J. Charles Linthicum. Dr. Louis B. Henkel, Jr., was elected secretary of the new branch.

Hospital Report.—The fourteenth annual report of the Sheppard and Enoch Pratt Hospital shows that 215 patients were treated during the year. More than 16 per cent. of them were free, and 37 per cent. show an average paid of only \$2.68 per week. There has been a marked increase in the number of patients discharged as recovered or much improved. There were 7 deaths, all male. Dr. James H. Randolph, clinical assistant, has accepted a position as assistant physician to the State Asylum for the Insane at Chattahoochee, Fla. Dr. Charles M. Franklin, a member of the staff, has resigned to entire private practice in Baltimore.

Baltimore.

Abortionist Convicted.—A woman convicted of performing a criminal operation was sentenced to pay a fine of \$1,000.

Disease and Death.—During last week there were 21 deaths from consumption and 36 from pneumonia. Whooping cough and diphtheria are prevalent.

Asks Appropriation.—The faculty of physics of the University of Maryland has asked the legislature for a centennial appropriation of \$100,000 for the University Hospital.

Needs of Johns Hopkins.—President Remsen estimates that \$750,000 to \$1,000,000 are needed for the erection of seven or eight buildings, in order that the Johns Hopkins University may remove to Homewood, its new suburban site.

Crusade Against Tuberculosis.—A big meeting, under the joint auspices of the Laeance Society and the Maryland Tuberculosis Association, was held to stir up interest in the crusade against tuberculosis, on January 25, with Dr. William Osler presiding.

Smallpox.—Forty cases of smallpox have been found in Baltimore this winter, 32 of which developed in the city, 3 in the county and 5 at quarantine. The sufferers were all negroes except one family. The contagion in all cases was traced to a negro who came to Baltimore from Virginia. There were no deaths.

Personal.—Dr. Louis McLaune Tiffany has gone on a hunting and fishing trip to the west coast of Florida. Dr. Dudley Williams had his shoulder dislocated in an automobile accident, January 25. Dr. Joseph Erlanger, associate professor of physiology in Johns Hopkins University, has been appointed professor of physiology in the University of Wisconsin, Madison.

Rare Books for Johns Hopkins Library.—Mr. Francis M. Jenks, a member of the board of trustees of the Johns Hopkins Hospital, has presented to the university library a rare collection of medical works, said to be of great value, on human monstrosities, deformities, etc. The collection consists

of 934 books and pamphlets, formerly the property of Professor Ahlfeld, privy counselor of Marburg, Germany.

Officers of Medical and Surgical Association.—The following officers have been elected for the year by the Baltimore Medical and Surgical Association: President, Dr. A. C. Harrison; vice-presidents, Drs. John T. King and John Nell; secretary, Dr. J. N. Reik; treasurer, Dr. William Caspari, Jr.; executive committee, Drs. C. Urban Smith, E. L. Whitney, J. M. H. Rowland; committee of honor, Drs. W. B. Perry, Randolph Winslow, David Street.

Dispensary News.—At the Northeastern Dispensary 8,366 patients were treated during the year; 20,006 visits were recorded; 228 eye, 128 ear and 57 nose and throat operations were performed. Officers were elected as follows: President, Dr. Arthur Wegefarth; vice-president, Dr. J. Edwin Hengst; secretary, Dr. A. D. McConachie. The South Baltimore Eye, Ear, Nose and Throat Hospital reports 1,391 treated during the year. The hospital has 20 beds.

Loving Cup for Dr. Hurd.—The members of the American Medico-Psychological Association, January 26, presented to Dr. Henry M. Hurd, superintendent of Johns Hopkins Hospital, a handsome loving cup in appreciation of his long and faithful service in the affairs of the association. Dr. Charles G. Hill made the presentation speech. The committee which selected the cup consisted of Drs. Charles W. Page, Massachusetts; P. L. Murphy, North Carolina, and C. B. Burd, Michigan.

Annual Meeting of Alumni Association.—The General Alumni Association of the University of Maryland held its annual meeting, December 25. The address was by Dr. James Carroll of George Washington University, and his subject was "History of Yellow Fever in Baltimore." The subject has never been dealt with before, and Dr. Carroll's paper, being by an expert, is a valuable contribution to the history of American medicine and of yellow fever. Dr. George A. Fleming was elected chairman of the executive committee, and Dr. E. F. Cordell, chairman of the endowment committee.

MASSACHUSETTS.

Murphy in Boston.—The Boston Medical Library meeting of January 24 was addressed by Dr. John B. Murphy, Chicago, on "Reunion of Nerves; Transplantation of Nerves; Resection of the Spinal Cord; Regeneration of the Trophic, Sensory, Motor and Mixed Nerves, and Conditions which Govern the Re-establishment of Conductivity; Prognosis in Nerve and Spinal Cord Suture."

Proposed Legislation for Nurses.—A bill has been introduced in the legislature providing for the establishment of a board of five persons as a board of registration in nursing and similar to the boards regulating medicine, dentistry and pharmacy. A similar bill was defeated last year because it failed to recognize the value of training in the smaller hospitals or for shorter periods than that required in the largest hospitals in the state.

Bill to Regulate Malpractice.—Boston's new district attorney, John B. Moran, has filed with the legislature a new bill to further regulate malpractice. Its chief provisions are:

If a physician or nurse knows or has reason to believe that a person whom he is called to visit or to attend is suffering from, or has within the 60 days preceding suffered from an illegal operation, such physician and such nurse shall immediately give notice thereof in writing over his or her signature, to the district attorney for the district in which such visit is made or such attendance rendered, and every such physician shall, in a book kept by him for that purpose, make full and complete entries of the condition, from time to time, of each person visited or attended, and of his treatment of such person and of the names and description of all persons caring for, attending or assisting in caring for or attending, such person, and shall from time to time, upon request of the district attorney, of the district in which such physician has an office or in which he resides, submit said book to said district attorney for inspection.

A physician or nurse who refuses or neglects to comply with the requirements of this section shall be punished by imprisonment in the state prison for not less than three nor more than five years. If such physician or nurse be a woman, the imprisonment shall be in the county jail or in the reformatory for women.

All buildings, places or tenements which are resorted to for the purpose of criminal surgery, or which are used for that purpose, shall be deemed common nuisances.

Whoever keeps or maintains or assists in keeping or maintaining such a common nuisance shall be punished by imprisonment for not less than three nor more than five years in the state prison, county jail or reformatory for women.

NEW YORK.

Typhoid at Niagara.—A large number of typhoid cases is reported from Niagara Falls, N. Y.

For Nassau Hospital.—Mrs. William K. Vanderbilt has presented this institution, which is located on Long Island, with a morgue which is complete in every detail.

Epidemic in Asylum.—An epidemic of scarlet fever has broken out in St. Christopher's Home at Dobbs Ferry. The trustees and physicians are of the opinion that the epidemic was due to germs lurking in the cast-off clothing sent to the institution. There are 12 cases at present. One hundred and eighty children are in the institution.

Gift to Tuberculosis Sanatorium.—The sum of \$23,000 is required to meet bonds of the Stony Wold Sanatorium which mature on March 1, and J. Pierpont Morgan has promised that if the board of directors will raise this sum he will add \$10,000. Two other gifts of \$10,000 have also been reported, one by Mrs. Edward Harkness for the endowment of a bed and the other from a friend who prefers to remain anonymous. There were many other gifts of smaller proportions.

Hospital for Crippled Children.—The fifth annual report of the New York State Hospital for the Care of Crippled and Deformed Children, which removed from Tarrytown to Haverstraw on April 1, 1905, announces the institution in a flourishing condition. An appropriation of \$50,000 which became available in the spring of 1905, made alterations in the buildings possible, and the number of beds was increased from 35 to 45. The report states that it is remarkable how rapidly patients suffering from tuberculous diseases of the joints improve under modern treatment in the fresh air of Rockland County. A friend of the hospital has contributed \$500 for the transportation of eligible indigent patients living in rural districts. Fifty-six patients were treated last year, and 44 patients are now in the hospital.

Albany News.—A bill has been introduced into the assembly requiring the labeling of all patent medicines and poisonous articles. It provides a penalty of from \$10 to \$100 for any druggist who sells poisonous articles and materials not so labeled.—New York City wants authority to spend \$2,500,000 for the purpose of establishing a seashore colony. The colony is intended for the reception of sick and convalescent patients in the city hospitals. It is to be in charge of the Health Department, the president of Bellevue and the Allied Hospitals, and the commissioner of charities, which shall constitute a board of supervision. Provision for the maintenance of the colony is made in the budget and \$250,000 is appropriated for the coming year. No insane person shall be received in the colony.—The state comptroller has paid over to Isaac V. Baker the \$40,000 which the state agreed to pay for his farm as the site of a new state hospital. The matter of payment has been pending on account of the criticism which the selection of this property as the site for a hospital created.—A bill has been introduced into the legislature imposing a tax of \$2 a year on dogs and transferring the dog licensing power from the Society for the Prevention of Cruelty to Animals to the Health Department. Should the bill become a law the society will lose its chief source of income, amounting last year to \$65,000. It is claimed that the society has been mismanaged and is of little use and, again, that the receiving of licenses by any private institution is unconstitutional.

Centennial Meeting.—The centennial meeting of the Medical Society of the State of New York was held in Albany, January 30 and 31, and February 1. For the first time in many years the medical profession of the state met as a united body. Dr. Joseph D. Bryant, New York City, presided, and Hon. Grover Cleveland made the opening address, in which he discussed from the viewpoint of the layman the relations between the physician and his patient. The reorganized society elected the following officers: President, Dr. Joseph D. Bryant, New York City; vice-presidents, Dr. Herman R. Ainsworth, Addison; Dr. Frederick C. Curtis, Albany, and Dr. Jones, Buffalo; secretary, Dr. Wisner R. Townsend, New York City; treasurer, Dr. Alexander Lambert, New York; delegates to the American Medical Association, for two years, Drs. Everard D. Fergusson, Troy; Wisner R. Townsend, New York City; E. Eliot Harris, New York City; Joseph W. Grosvenor, Buffalo; Abraham Jacobi, New York City; Albert Vander Veer, Albany; delegates for one year, Drs. Henry L. Elsner, Syracuse; George R. Fowler, Brooklyn; Hamilton D. Wey, Elmira; William S. Ely, Rochester; Floyd M. Crandall, New York City, and Roswell Park, Buffalo; and editor of the state journal, Dr. James P. Warhase, Brooklyn. The house of delegates of the old state society was continued for another year.

Buffalo.

City Bacteriologist's Salary Raised.—The Board of Health of Buffalo has decided to raise the salary of the city bacteriologist from \$1,500 to \$1,800 a year and the salary of the assistant bacteriologist from \$1,200 to \$1,500.

Fair and Ball for German Hospital.—The fair for the benefit of the German Hospital netted between \$25,000 and \$30,000 for the hospital. A charity ball for the benefit of the German Hospital will be held at City Convention Hall, February 20.

Fine for Negligence Revoked.—The fine of \$10 and costs entered by the Health Department of Buffalo against Dr. F. M. Rich has been revoked by the board of aldermen, it having been proven conclusively that Dr. Rich was in no way negligent in not reporting a case of contagious disease.

Physicians Endorse University Extension.—The physicians of Buffalo held a meeting January 19 at the University Club for the purpose of giving an impetus to the university extension movement in creating a college of liberal arts in addition to the professional schools now existing. The physicians responded loyally to the call for subscriptions, and \$20,000 was subscribed for this purpose, with the possibility of raising double that amount. It is especially gratifying that the medical profession should have been among the first to respond so liberally for such a high purpose, and no doubt the example set by the medical profession will influence the legal, dental and other professions to contribute their quota for the endowment and maintenance of a school of liberal arts.

New York City.

New York Academy of Medicine.—The section on obstetrics elected the following officers: Chairman, Dr. Arnold Sturm-dorf; secretary, Dr. Howard C. Taylor.

Estate for Hospital Society.—The German Hospital Society of Brooklyn, by an interlocutory decision handed down by the Supreme Court, receives the greater part of the estate of the late Mrs. Edward N. Rosenbaum, which is estimated at \$75,000.

Lee to Lecture on Fatigue.—The seventh lecture in the Harvey Society course will be delivered by Prof. Frederick S. Lee of Columbia University at the New York Academy of Medicine on Saturday, February 3, at 8:30 p. m. Subject, "Fatigue."

Appendicitis.—Dr. Andrew J. McCosh was operated on for appendicitis January 26. The appendix was removed and two days later the patient was reported as doing well and in no danger.—Dr. George R. Fowler, Brooklyn, has been operated on for appendicitis. He is very ill, but is doing well.

For Clean Street Cars.—Borough President Coler will appoint a committee of 100 whose aim will be to compel the Brooklyn Rapid Transit Company to give better service and to keep its cars clean and warm. All the boards of trade will join with the committee to aid in carrying out the crusade.

Fire in Private Hospital.—A fire occurred in the private sanatorium conducted by Miss Anna L. Alston on the morning of January 25. By the unusual coolness and quick work of the nurses a number of surgical patients were carried from the top floor to the main floor in a very short time. The loss to the hospital was about \$3,000.

Plan to House Municipal Departments.—Comptroller Metz will submit a proposition to the board of estimate for the erection of a municipal building on a site opposite Cooper Square belonging to the city, which will house the health, tenement-house buildings and corrections departments. The present scattered locations of these related departments is a great inconvenience.

To Help Sick Children.—The Speedway Country Homes Society, whose work is the placing of sick children from the tenements in private country homes, held its annual meeting on January 25. It is intended to build some homes for tuberculous children, and for this purpose Mrs. Andrew Carnegie has promised \$10,000 and Miss Helen Gould announces that she will build one such home.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending January 20, 1,487 cases of measles, with 17 deaths; 448 cases of tuberculosis, with 159 deaths; 359 cases of diphtheria and croup, with 46 deaths; 237 cases of scarlet fever, with 10 deaths; 35 cases of typhoid fever, with 5 deaths; 28 cases of cerebrospinal meningitis, with 15 deaths; and 265 cases of variola. A total of 2,799 cases and 252 deaths.

Personal.—Dr. Henry Dwight Chapin has been appointed medical director of the Speedway Country Homes Society.—Dr. Thomas R. Maxfield of Brooklyn has been appointed acting assistant sanitary superintendent of the department in Brooklyn by the Board of Health in place of Dr. T. Lewis Fogarty, who was removed by the board.—Dr. J. P. Murray of Brooklyn was appointed medical examiner to the finance department at a salary of \$2,500.

Hot Winter Healthful.—It was announced at the Board of Health that the warm weather had materially reduced the death rate in this city. There were 45 less deaths for the week ended January 20 than for the corresponding week of last year. All pulmonary diseases showed a noticeable decrease. During the week ended January 27 there was an increase in the number of deaths from influenza, and the fear is expressed that this affection is becoming epidemic.

New West Side Clinic.—A clinic exclusively for women and children will soon be opened somewhere on the West Side under the supervision of Mrs. Harry Wallerstein, a graduate of the New York Medical College and Hospital for Women. Its work as proposed will be largely preventative, as those will be cared for who are not sick enough to go to a hospital. When necessary, physicians from the clinic will visit patients in their homes. There is at present \$1,500 in the treasury.

OHIO.

Medical Club Election.—The Canton Medical Club has elected the following officers: President, Dr. Harry M. Schuffell; vice-president, Dr. Lauren E. Flickinger; recording secretary, Dr. Clara E. Fraunfelter, and censors, Drs. Frank E. Hart, George A. Kelley and J. Frank Kahler.

Alumni Election.—The annual election of officers of the Cincinnati Chapter of the Ohio Medical College Alumni was held at the residence of Dr. John Ranley, Cincinnati, January 17. The following were chosen: President, Dr. William Gillespie; vice-president, Dr. Earl Harlan; secretary, Dr. Charles Langsdale, and treasurer, Dr. B. M. Weekley.

Personal.—Dr. James C. Reinhart has been appointed health officer of Toledo, Ohio, vice Dr. Walter W. Brand.—Dr. George Doek, Ann Arbor, Mich., has been made honorary member of the Academy of Medicine of Toledo and Lucas County, Ohio.—Dr. Otto Geier, of the medical staff of Christ's Hospital, Cincinnati, was operated on at that institution January 21, for appendicitis.

Stark County Medical Society.—At the annual meeting of this society the following officers were elected: Dr. Alonzo B. Walker, Canton, president; Dr. Frank W. Gavin, Canton, corresponding secretary; Dr. George F. Zinninger, Canton, treasurer, and Drs. Harry P. Pomeroy, Canton; Jacob F. Marchand, Canton; William C. Steele, New Berlin; Leon B. Santee, Marlboro; Neal W. Culbertson, Massillon, and Daniel W. Gans, Massillon, executive committee.

PENNSYLVANIA.

Bequest.—By the will of Mrs. Annie Hartmyer, St. Joseph's Hospital, Lancaster, receives \$500.

Consumption Hospital in Pittsburg.—A sanitarium for the treatment of pulmonary tuberculosis is to be established in Pittsburg, at the former residence of William McConway, on Herron Hill, under the name of the Pittsburg Sanitarium. Mr. McConway has agreed to give the free use of his former residence and ground for a stated period, and if the hospital proves a success it is understood that he will deed it over to the corporation.

Pennsylvania's Relief Report.—The monthly report of the Employers' Relief Fund for the Pennsylvania Railroad Company's lines east of Pittsburg and Erie, shows that the payments of benefits to its members and families of deceased members for December amounted to \$134,038.30, of which \$52,882.20 was on account of death and \$81,156.10 on account of disablement by sickness and accident. The payments thus far are stated to have amounted in the aggregate to \$14,335,680.87, of which \$5,891,377.34 was on account of death claims and \$8,444,303.35 on account of disablement.

Medical Society Sustains Dr. Dixon.—At a meeting of the Clinton County Medical Society, held in Lock Haven, January 21, the following resolution was unanimously adopted:

WHEREAS, There has been some opposition in Lock Haven and throughout Clinton County to the efforts of Dr. Samuel G. Dixon, commissioner of health of Pennsylvania, to enforce the vaccination laws of 1905, the members of the Clinton County Medical Society desire to place themselves on record as upholding Dr. Dixon in his efforts to enforce the vaccination laws of Pennsylvania. We unambiguously agree that the only way to prevent smallpox is by vaccination, and those who try to prevent and bring it into contempt only show their ignorance and have never been treated or had anything to do with smallpox, otherwise they would not try to defeat the only prevention of this loathsome disease.

Medical Officers Elected.—At the annual meeting of the Beaver County Medical Society, January 11, the following officers were elected: President, Dr. James F. Elder, New Brighton; vice-presidents, Drs. W. Winfield Simpson, New Brighton, and George Y. Boal, Baden; secretary, Dr. James K. White,

New Brighton, and treasurer, Dr. H. M. Shallenberger, Rochester.—At the annual meeting of the Delaware County Medical Society, January 4, the following officers were elected for the year: President, Dr. M. P. Dickeson, Media; vice-president, Dr. Jonathan L. Forwood, Chester; treasurer, Dr. D. W. Jellies, and secretary, Dr. Linnaeus S. Fussell, Media.—At the annual meeting of the Elk County Medical Society, January 12, the following officers were elected: President, Dr. Elmer E. Livingston, Johnsonburg; vice-presidents, Drs. Joseph G. Flynn, Ridgway, and P. W. Leitsell, Portland Mills; secretary, Dr. M. M. Rankin, Ridgway, and treasurer, Dr. Alfred Mulhaupt, St. Marys.—At the annual meeting of the Montgomery County Medical Society, January 10, the following officers were elected: President, Dr. Elmer G. Kriebel, Worcester; vice-presidents, Drs. J. Q. Thomas and J. Howard Seiple, Center Square; recording secretary, Dr. Harry H. Whitcomb, Center Square; corresponding secretary, Dr. Joseph K. Weaver, Norristown, and treasurer, Dr. S. Nelson Wiley, Norristown.—At the election of the Pittsburg Academy of Medicine Dr. Edward H. Small was elected president; Dr. Glendon E. Curry, vice-president, and Dr. Thomas G. Simonton, member of the committee on scientific program.

Philadelphia.

Disease Closes Schools.—At the direction of the officers of the Bureau of Health the Cambria public school was closed for disinfection January 25, seven of the pupils being ill with diphtheria; three schools were also closed by the Board of Health in West Philadelphia on account of an epidemic of measles among the children of that section.

Personal.—Dr. and Mrs. George F. Baker sailed for Europe January 20.—Dr. Bernard Berens was elected president of the Athletic Club of Philadelphia, January 23.—Dr. S. Weir Mitchell read his poem: "Francis Drake, a Tragedy of the Sea," before the Pennsylvania Fellowship of Fine Arts, in the Academy of Fine Arts, January 22.—Dr. A. Victoria S. Haensler and Dr. and Mrs. L. Webster Fox sailed for Port Antonio, Jamaica, January 25.—Dr. Charles K. Mills has been appointed consulting physician to the Orthopedic Hospital and Infirmary for Nervous Diseases.

Bequests.—The executors and trustees of the Simon Muhr estate have made additional distribution of \$9,000, \$1,500 of which goes to the Jewish Hospital Association, \$300 to the Pennsylvania Hospital, \$300 to the Jefferson Medical College, \$300 to the Philadelphia Home for Incurables, \$150 to the Philadelphia Polyclinic Hospital, \$150 to the Philadelphia Lying-in Hospital, \$120 to the Women's Hospital of Philadelphia, \$120 to the Children's Hospital, and \$120 to the West Philadelphia Hospital for Women.—In adjudicating the estate of Harriet Richards the Orphans' Court awarded a bequest of \$10,000 to establish free beds in one or more hospitals.

The Cost of Tuberculosis to the State.—At the tuberculosis exhibition, January 24, Dr. Leonard Pearson, state veterinarian, in discussing state control of tuberculosis, said that deaths and illness from tuberculosis in Pennsylvania is responsible for a loss of \$24,000,000 each year. Estimating that the average citizen is worth to the state at least \$1,000, and that there are 12,000 deaths annually from the white plague, Dr. Pearson says the loss, therefore, from this would be \$12,000,000. In addition to this loss of earning power during the two or three years' illness and the increased cost or maintenance during this period is probably equal to the direct loss from death, making the total loss to the state \$24,000,000. He said that there are at all times 25,000 to 30,000 persons who are ill from tuberculosis in Pennsylvania. The state should provide sanatoria for consumptives, not merely for their own benefit, but for the protection of uninfected citizens. The importance of this is shown by the fact that three or four people contract the disease from every person who dies of it.

Portrait of John Morgan for University.—A large oil painting of John Morgan, founder of the medical school of the University of Pennsylvania, has just been added to the large collection of portraits owned by the university and will occupy a position on the walls of Houston Hall. The portrait is the gift of the Hon. David T. Watson, Pittsburg, who is a descendant of John Morgan, the founder of the medical department of the university, the first medical school in America. The tablet fastened to the frame is inscribed as follows: "Dr. John Morgan, born 1735, died 1789. Copy of original by Angelica Kauffman, in Rome, 1763-64." Dr. Morgan was born in Philadelphia in 1735, and was graduated in 1757 with the first class of the College of Philadelphia, which later became the University of Pennsylvania. He subsequently studied medicine in Philadelphia, later in Edinburgh, Paris and Padua, obtaining

his professional degree from Edinburgh in 1763. He became the first teacher of medicine in the College of Philadelphia, and with William Shippen organized the medical school of the University of Pennsylvania. He was one of the early members of the American Philosophical Society, and also the first general director of the medical service of the Continental Army.

Health Report.—The total number of deaths reported for the week was 583. This is a decrease of 50 from the number reported last week, and an increase of 4 over the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 17; measles, 15; whooping cough, 4; diphtheria, 12; meningitis, 4; tuberculosis, 70; cancer, 24; apoplexy, 27; heart disease, 49; acute respiratory disease, 121; enteritis, 31; Bright's disease, 45; premature birth, 9; old age, 14; suicide, 3; accidents, 29, and marasmus, 6. There were 476 cases of contagious disease reported, with 29 deaths, as compared with 373 cases and 37 deaths for the previous week. In view of the epidemic of measles the health authorities have decided to place yellow placards on houses in which there is a patient suffering from this malady. By this means the public will be warned and it is hoped the prevalence of the disease will be diminished. There were 718 cases of measles reported last week. The yellow placard will also be placed on houses in which there are patients suffering from chickenpox. Sixty-three cases of this disease were reported for the week as compared with 65 reported for the previous week.

VIRGINIA.

Typhoid fever of a very malignant type has become epidemic in certain parts of Frederick County.

Bequest.—The late Emanuel Millhiser left by his will \$1,000 to the Sheltering Arms Hospital of Richmond.

Personal.—Dr. Aaron Jeffery is recovering after a severe fracture of the leg, caused by being thrown from his carriage. —Dr. D. D. Wilcox, Petersburg, while horseback riding, was thrown from his horse and had his leg broken.

Election.—At the annual meeting of the Newport News Medical Society the following officers were elected: Dr. Richard T. Styll, president; Dr. Thomas J. Sims, vice-president, and Dr. Anna M. Randolph, secretary and treasurer.

Must Not Do Contract Work.—The Petersburg Medical Faculty has decided that a member of that body can not, without violating the rules of the faculty, make an agreement with a secret fraternal order to give medical attendance to its members at contract prices.

Smallpox.—For several weeks past the citizens of South Hill and vicinity have been in much doubt whether a prevailing disease was chickenpox or smallpox. An expert from the State Board of Health has just visited the town and diagnoses the trouble as a mild form of smallpox. Quarantine and sanitary measures will be instituted at once.

GENERAL.

Typhoid Fever in Mexico.—An epidemic of typhoid fever in the City of Mexico has assumed such proportions that a meeting of the principal physicians, attended by President Diaz and Governor Escandon, has been held to discuss energetic means of stamping it out.

Isthmus Health Excellent.—The sanitary report for the Canal Zone for the month of December shows that the health conditions remain excellent. During the month there was only one case of yellow fever, that of an employé of the commission who was taken sick at Colon, December 11. In the city of Panama the last case occurred November 11. At present there is on hand no quarantinable disease of any kind. The sick rate of the employés continues very low. With a force of about 22,000 there were on the average during the month 427 in the hospital. This would give a sick rate of slightly over 19 a 1,000. While the sick rate is very small, the death rate has been large. This was due to the large number of fatal cases of pneumonia occurring among the negro employés. Of the 74 deaths, 33 were due to pneumonia, and all of these cases of pneumonia occurred among the negroes. Leaving out these 33 cases of pneumonia, the death rate for the month would be at the rate of about 22 a 1,000 a year. The white employés suffer much less than the negroes. Among the whites there were only 4 deaths, and of these only 2 were from disease. This would give an annual death rate among the whites of only 8 each 1,000. The death rate among the negroes, on the other hand, would give an annual death rate of about 44 each 1,000. Colonel Gorgas reports that it is difficult for him to account for this great difference. Of course,

the whites, on the average, take very much better sanitary care of themselves, sleep under mosquito bars, take quinin, and observe other sanitary regulations to a much greater extent than do the negroes.

CANADA.

Vital Statistics.—During the last half of 1905 Winnipeg had 1,096 births, 1,064 deaths, and 837 marriages. —Peterborough, Ont., with a population of 14,500, had 224 deaths in 1905, 23 less than in 1904. It is the lowest death rate of any Canadian city. —The total number of deaths in Ontario in December, 1905, was 2,116.

Prevalent Diseases.—In Ontario, during December, 1905, 1,289 cases of smallpox were reported from 20 municipalities; 172 deaths were reported from consumption, and there were 152 cases of typhoid fever, with 43 deaths. —There is an epidemic of smallpox in the village of St. Cyrille, near Drummondville, P. Q., no less than 150 cases having been reported.

Personal.—Dr. G. A. Charlton, Regina, has been appointed bacteriologist of the department of agriculture, for the province of Saskatchewan. —Dr. George R. McDonagh, Toronto, has gone to Southern California for two months. —Dr. C. M. Murray, Toronto, has gone to Europe. —Dr. S. H. Westman, Toronto, is in that city for a month, before he returns to England for further postgraduate work. He has spent the last two years in London. —Dr. Colin Campbell, late house surgeon at Moorfields, London, Eng., has returned to Toronto, and will probably establish himself as an oculist in that city. —Dr. G. W. Badgerow, Toronto, who for six years has been doing postgraduate work in London, after a brief visit to Toronto, has returned to England. —Dr. R. R. Hopkins has been appointed medical health officer of Toronto Junction, Ont., vice Dr. H. Mason, resigned.

Hospital and College News.—Galt, Ont., will establish a cottage hospital for incurable consumptives, the first of its kind in Canada, and will appeal to the Ontario government for financial aid. —The new Manitoba Medical College was formally opened January 26. —The woman's auxiliary in connection with the Winnipeg General Hospital, in 1905 collected over \$3,700 for that institution. —The Toronto General Hospital fund continues to grow and now amounts to \$1,101,946.

—Dr. John Noble, Toronto, has been elected chairman of the Toronto Board of Health, and has revived the question of Toronto building a consumption hospital, which he strongly favors. Dr. Sheard, the medical health officer, who is at present in New York, as the guest of the Canadian Club of that city, thinks there should be no undue haste in the erection of such a building, as the present hospitals of Toronto are doing very well in the matter of caring for this class of the sick.

Canada's Public Health Report.—Dr. Montizambert, director-general of public health for Canada, has his annual report for 1905 ready for presentation to parliament at the meeting of that body in the immediate future. He states that owing to the fact that there is no smallpox in those states bordering on Canada, port officers and inspectors have been withdrawn. During 1905 careful inspection has been carried on both on the Atlantic and Pacific, special inspection of vessels from San Francisco having been discontinued on Jan. 1, 1906. Dr. Montizambert again emphasizes the important need of a dominion department of public health under a responsible minister of the crown, so that all matters affecting the health of the dominion might be consolidated under one head. The leper lazaretto at Tracadie, N. B., is also referred to in his report. There are now on the books of that institution 17 patients, 10 males and 7 females. There were no deaths during the year. Two new patients were admitted during 1905. It is said that good results continue to follow the treatment by Chaulmoogra oil and strychnia, with external applications of creolin. One patient was discharged cured, but ordered to report for inspection from time to time.

Half Rates to British Medical.—Arrangements are announced for the British Medical Association meeting in Toronto, Ont., Aug. 21-25, 1906, whereby local travel in Canada will be on the certificate plan, allowing free return, regardless of number in attendance. Passengers going by rail and returning by R. & O. Navigation Company, or vice versa, rate to be one and one-half fare. Travellers from Europe who present certificates signed by the secretary of Eastern Canada Passenger Association, and countersigned by the secretary of the Canadian committee, or the secretary of the British Medical Association, will be granted one-half lowest one-way first-class rail fare; round-trip tickets at lowest one-way first-class rail fare between all points in Canada. Rates to Pacific coast subject to concurrence of Trans-Canadian Passenger Association. Dates

of sale, July 1 to September 30, inclusive. Final return limit September 30. Side trip tickets to be sold from Toronto to delegates from the Maritime Provinces, from all points west of Port Arthur and from the United States, on presentation of validated certificate or deposit receipt at lowest one-way first-class fare for the round trip to all points in Canada. Dates of sale, August 23 to September 1, inclusive. Return limit September 30.

FOREIGN.

A New Hospital at Maan, Turkey.—At Maan, on the great oriental railway of Hedjas, a new hospital of 70 beds was opened January 2, in the presence of the chief of the sacred caravan and numerous pilgrims.

International Congress of Medical Electricity.—The third International Congress of Medical Electricity and Radiology will be held at Milan September 5 to 9. Information as to membership may be obtained from Dr. Herschell, 36 Harley Street, London, W.

Plague of Locusts at Kimberley, South Africa.—During the early part of December the inhabitants of Kimberley suffered from an invasion of locusts. The *British Medical Journal*, January 20, has an illustration showing the wall of the Kimberley Hospital almost covered by the insects.

Damages for Infection of Wet Nurse by Syphilitic Infant.—The court at La Rochelle, France, has awarded about \$2,400 for damages claimed by a wet nurse for infection with syphilis from a syphilitic infant. The defendant in the case is the Assistance Publique, that department of the administration which has charge of all the public hospitals, orphan asylums, etc., throughout the country.

Society for the Protection of Children in Turkey.—The Constantinople correspondent of the *Lancet* states that a society exists in that city for the protection of children. It is under the patronage of the Spanish minister, the Marquise Comasagrado, and many well-known members of the upper classes of the city. The society is for the purpose of protecting infants, foundlings, and small children generally. This society possesses a hospital where little ones of every race and denomination receive the best care and treatment that can be provided for them in the city.

International Hygiene Exhibition.—An exhibition will be held at Milan, Italy, from April to November, 1906, on the occasion of the opening of the Simplon tunnel. It will include a section of hygiene embracing general hygiene, public health, sanitary services, rural and industrial hygiene. Another part will comprise all that relates to the etiology, diffusion and prophylaxis of tuberculosis, and to institutions for its treatment. A meeting of the Italian National Antituberculosis Congress will be held at the same time. The president of the sanitary commission is Prof. Luigi Magiagalli, while Dr. Francesco Gatti will preside over the antituberculosis congress.

Sunday Rest for Drug Stores.—The National Board of Public Health of the Republic of Argentina has issued some new regulations respecting Sunday rest. Among them is one which requires the pharmacies to close on Sunday, one in each precinct remaining open, while the others are closed. Each pharmacy takes its turn in remaining open and the board has issued a list of the various pharmacies with the date of their open Sunday, the police being instructed to enforce the decree. In Germany the physicians in a number of towns are combining in the same way to obtain their Sunday rest. They have been in the habit of holding office hours on Sunday as on other days. Now only one office will be open in a precinct, each physician taking his turn.

Medical College at Lucknow, India.—A medical college for the United Provinces is to be established at Lucknow in commemoration of the visit of the prince and princess of Wales. A branch college for women is proposed, and this will probably be named after the princess of Wales. It will be completely separate from the college for men, and there is ample space whereon to build it close to the Lady Dufferin Hospital. The Indian correspondent of the *Lancet* states that in this part of India there is no college for the higher medical training of women. There are only classes for female hospital assistants. It is hoped to get educated Hindoo women to take up medicine. It is announced that the education in this college will be conducted with every regard for the customs of the country.

Suits Against Unqualified Practitioners in Germany.—A quack named Baumann was recently sentenced to four months' imprisonment in Berlin for advertising a universal specific which was said to have done harm in many instances. On his appeal to a higher court the sentence was reduced to a

fine of \$125, the court accepting as a mitigating circumstance that Baumann was firmly convinced of the healing virtues of his vaunted specific. In another suit brought against a "nature healer" named Mistelsky, a fine of \$250 had been imposed, but during the delays of his appeal to a higher court, the case passed beyond the legal limit of one year, and consequently the upper court had to dismiss the suit. Mistelsky was allowed to go without penalty, and he published abroad this occurrence as his "triumphant vindication by the courts against the malicious persecution of the local medical chamber" which had brought the suit.

Restriction of X-Ray Work to Qualified Practitioners.—A committee was recently appointed by the Paris Académie de Médecine to report on the question whether the medical use of the Roentgen rays should be restricted. The committee was composed of Brouardel, Debove, Gariel, Guéniot, Hanriot, Motet, Pouchet and Chauffard. They emphatically advocate that the medical application of the Roentgen rays should be legally restricted to duly qualified persons. Their conclusions are based on the established facts that the medical use of the Roentgen rays may lead to serious accidents, and that certain practices may prove a social danger, while, on the other hand, only qualified physicians or health officers or regularly licensed dentists (in the domain of odontology) are capable of interpreting the results obtained from the point of view of the diagnosis and treatment of affections. The discussion on the subject was published in the *Bulletin of the academy*, Nos. 2 and 3.

Medical Sociology in Germany.—The Berlin medical faculty has recently arranged for a course of lectures on medical sociology, to be delivered by Professor Kirchner, as part of the regular medical curriculum. He is also to deliver a course of postgraduate lectures this summer on the new regulations in regard to communicable diseases. A society was organized a year ago, with headquarters in Berlin, entitled the Society for Medical Sociology, Hygiene and Medical Statistics (*Ges. f. soziale Medizin, Hyg. und Medizinalstatistik*). R. Lennhoff was the prime mover in its organization and the journal of which he is editor, the *Medizinische Reform*, has been made the official organ of the association, and is now appearing under the name, *Wochenschrift f. soziale Med., Hyg. u. Med. statistik*. A yearbook on sociologic hygiene and demography has been published during the last five years by A. Grotjahn and F. Krieger, and they have now founded a periodical to contain original works on medical sociology, medical statistics, workmen's insurance, sociologic hygiene and the borderland problems of medicine and social economics. The yearbook is published by Gustav Fischer, Jena, but the journal is to be issued by F. C. W. Vogel, Leipzig. There is still another periodical devoted to these topics published in Germany, the *Archiv f. soziale Medizin und Hygiene*, now in its second year. It is edited by M. Fürst and K. Jaffe, both of Hamburg.

Plague in Japan.—According to *Public Health Reports*, plague has made its appearance at Shimonoseki, where three probable cases have been discovered. Shimonoseki is separated only by a narrow strait from Moji, one of the most important coaling ports in the East, where many vessels bound for America call. There being no American consul at Moji, United States consular bills of health can not be obtained. Consul Sharp reports from Kobe that the locality in which a plague case has been found is inclosed by a zinc fence, and after all the rats on the premises have been destroyed, the place is carefully disinfected. Persons suspected of being infected with the disease are removed for a certain period to a place of detention, where their physical condition is carefully watched. They are allowed to return home after it has been satisfactorily proved that they are not infected with the disease. To encourage the extermination of rats a reward is given by the authorities for each living or dead rat produced in Kobe and Osaka, and in the villages of these districts. These rats are examined, and when plague bacilli are discovered in any of them the places in which they were caught are disinfected in the same manner as when plague patients are found. Postmortem examinations are held on all deceased persons and daily examinations of the health of the public are made by the medical inspectors. Compulsory house cleaning and disinfection are now being enforced in the districts where it is thought the disease may be lurking.

Mexican National Medical Congress.—The national medical association of Mexico, known as *Pedro Escobedo*, held a successful medical congress in the city of Mexico, January 9 to 12. The congress was opened by the president of the republic, who was presented with a gold medal bearing on one side the words: "Asamblea de la Sociedad Pedro Escobedo," with the

Pharmacology

The Relation Between Physician and Pharmacist.

There is a mutual dependence of pharmacy and medicine on one another: 'The doctor needs the pharmacist and the pharmacist can't get along very well without the physician. There is no antagonism between the honest pharmacist and the honest physician. On the contrary, there are few physicians who do not have especially close relation with some druggists with whom they frequently consult on pharmaceutical matters. In the propaganda for honest pharmacy as against secrecy and fraud in drugmaking the pharmacist is very much interested—certainly as much so as is the physician. Consequently the drug journals have had much to say about the Council on Pharmacy and Chemistry and its work. Some of these journals have jumped to the conclusion that there would be more money for them in siding with the nostrum makers, but the better journals, those which are recognized as representing scientific pharmacy—and these, we are glad to say, are in the majority—have seen in this movement a promise of better things, and a return to legitimate pharmacy, and have heartily endorsed the movement. Among the latter is the *Druggist's Circular*, of New York, a journal that for nearly fifty years has been recognized as representing the best interests of pharmacy. For years it has been fighting against the growing tendency toward the commercializing of the drug store, which has made pharmacy a mere incident to the business, and the compounding of prescriptions a side issue—the nostrum prescribing doctor being mostly to blame for the latter condition. In the past the *Druggist's Circular* has exposed more fraudulent nostrums than any other drug journal, and it is still courageously carrying on the work. It has now to fight a \$50,000 libel suit brought against it by a German chemical company because it dared to publish what it believed to be the truth. This leads us to suggest that the average physician will find in a good pharmaceutical journal—not a trade drug journal—many hints and suggestions about drugs and prescribing that will be most valuable to him. Not only this, but if he were reading such a journal he would be able to see himself as he is seen by the man behind the prescription case, which sometimes would be advantageous to both. He would see himself severely criticised occasionally—often justly so—and this would be a good thing.

For the Safety of Yourself and Your Child.

Under the above heading the *Ladies' Home Journal* for February prints a proposed bill, with a preface thereto, both of which we quote, as follows:

We give below a carefully prepared bill which should be introduced into the legislature of every state this winter. Ask the member of the legislature from your district to do this. Then when the bill is introduced it should be the duty of every man and woman to use his or her influence to see to it that the bill is passed and becomes a law. You can do this by asking or writing your representative and insisting that he shall vote for it. The entire combined influence of the manufacturers of the "patent medicines," and of the newspapers which derive profit from their advertising, will be used with your representative against such a measure. But if the people say "This bill must pass" it *will* pass, and this is what you, as one of the people, can do.

date, and on the reverse: "Jubileo Profesional del señor Dr. Don Eduardo Liceaga." A similar gold medal was presented to Liceaga, and duplicates in silver were given to all the delegates to the congress. The opening meeting was a brilliant gathering, with music and recitations, including a poem written for the occasion. The president of the society, Dr. G. Mendizabal, gave a historical sketch of medicine in Mexico and of the society, and then introduced the honorary president, Dr. E. Liceaga, chief of the Superior Council of Health, as the orator of the evening. His address was on "Yellow Fever," and he reported the great strides made in eradicating this disease in Mexico, and outlined the work being done by his department. He announced that notwithstanding that the disease is imported from time to time, it is kept under constant control. At the date of speaking there was only a single yellow fever patient in the republic, and he was well on the road to recovery. He further distributed a number of circulars among them, one addressed to physicians, one to plantation owners and one to railroad officials, all dealing with the prophylaxis of yellow fever, written in simple, popular language. Among the subjects appointed for discussion at the regular meetings of the congress were: "Early Diagnosis of Tuberculosis," "Fever," and "Bases for Treatment of Epilepsy." So many communications were presented that a supplementary meeting was found necessary. Great interest was aroused by a report of J. D. Morales on the scientific production of the national beverage, pulque. He showed that sterilization of the raw material did not interfere with the quality of the drink, while it eliminated the disagreeable odor and the necessity for the use of poisonous substances in its preparation. Pruneda's article on "False Incipient Tuberculosis," and Guzman's on "Rachialgia as an Early Sign of Tuberculosis," attracted much attention. The section on hygiene adopted resolutions to the effect that public drunkenness should be declared a misdemeanor, that a training school for nurses and a Pasteur institute should be established in every state, and that arrangements should be made for country schools for weakly and scrofulous children to teach them gardening, farming, etc. The daily papers of the city of Mexico gave very full reports of the congress, especially of the ovation to Liceaga. He has made many friends in the United States during his attendance at various scientific congresses, etc.

Proposed Reforms for International Medical Congresses.—The German national committee in charge of arrangements for the approaching International Medical Congress, to be held at Lisbon in April, will present the following two proposals at the Lisbon congress and urge their adoption: "1. The organization of an international bureau for the general medical congresses, which will act during the intervals between the congresses. The members of the bureau to be the presidents of the past and approaching congresses and the members of all the national committees. This central office should have its headquarters in Paris, and its task will be to preserve continuity and order in the arrangements of the congresses, especially in the making out of the programs, regulating the sections, appointing topics for discussion and selecting speakers to present the various themes, and the honorary presidents, working always in co-operation with the committee of organization of the congress. Motive: The need for some international body to serve as a court of appeal in matters affecting these international congresses has long made itself felt, to prevent or smooth away differences that may arise between the committee of organization and the representatives of the special sciences. At the same time, such an international body would serve by regulating the relations between the great general congresses and the international specialist congresses, and also with the medical congresses in the different countries. 2. The general international medical congresses should be held not oftener than once in five years. Motive: It is generally acknowledged that the international congresses have lost in prestige of late years. This is due principally to the brief interval between them. In case they occurred only once in five years the preparations for them would probably be more carefully made, and more energy would be devoted to the solving of scientific problems, these forces now being drained away by their being called on so constantly for scientific gatherings of such kinds. Besides this, if the international congresses were not held so frequently, it would be easier to find suitable places at which to hold them." Valdeyer and Posner are chiefly responsible for the drafting of these resolutions. They are to be submitted to the various national committees for discussion in the hope that something tangible will result in the way of the desired reforms. The original text of the resolutions is given in the *Berliner klin. Wochft.*, January 15, of which Ewald and Posner are the editors.

NOW WILL YOU DO IT?

THE TIME HAS COME FOR YOU TO ACT.

AN ACT

TO REGULATE THE MANUFACTURE AND SALE OF "PATENT" AND "PROPRIETARY" MEDICINES.

BE IT ENACTED by the Legislature of the State of.....

SECTION I. Section 1. Each package, bottle, box or other parcel containing what is commonly known as "patent" or "proprietary" medicine of any kind or in any form, intended for internal consumption by human beings, other than a medicine specially compounded on the written order or prescription of a physician duly authorized to practice his profession in this state, which shall be hereafter manufactured within this state, or which shall be hereafter manufactured without this state and exposed or offered for sale, or sold or given away, or otherwise disposed of, within this state, shall have both on the outside wrapper of such package, bottle, box or other parcel, and also on the label affixed to such package, bottle, box, or other parcel, in plain English, printed in black letters on white paper, of a size not smaller than of type eight point, so called, a complete schedule showing all the ingredients contained in such "patent" or "proprietary" medicine, and the exact proportions of each ingredient thereof.

SECTION II. Whenever any such "patent" or "proprietary" medicine shall contain more than 8 per cent. of ethyl alcohol, or more than one-twenty-fifth of 1 per cent. of morphin, heroin, cocaine, or less than one-twenty-fifth of 1 per cent. of any of the same, or any of them, or more than one-fourth of 1 per cent. of chloral hydrate, or any quantity of belladonna, cotton-root, ergot, or other abortifacient, there shall be printed in plain English, in red letters of a size not smaller than eight point, so called, on white paper, in addition to the schedule of ingredients heretofore required, both on the outside wrapper of the package, bottle, box or other parcel containing the same, and also on the label affixed to such package, bottle, box or parcel, a notice reading as follows:

"This package (or bottle or box or parcel as the case may be), contains (here give the name and proportion or percentage of the drug as the case may be), and is therefore under the Act of the Legislature of the State of marked

"POISON,"

and also the single separate word "poison" which shall be printed separately on a line by itself, in bold-face type, and in letters not less than one-twenty-fifth of 1 per cent. of any of the same.

SECTION III. The Board of Health of this state is hereby empowered, immediately on the passage of this act, and from time to time thereafter, to make, or cause to be made, a chemical analysis of "patent" or "proprietary" medicines, manufactured, or exposed or offered for sale, or sold or given away, or otherwise disposed of, within this state, for internal consumption by human beings, other than those specially compounded on a physician's written prescription as aforesaid. If any such analysis shall show that there has been, with respect to any such "patent" or "proprietary" medicine, a failure to comply with the requirements of this act, said board shall at once notify the district attorney of any county in this state in which the said "patent" or "proprietary" medicine is manufactured, or exposed or offered for sale, or sold or given away, or otherwise disposed of, whose duty it shall be to prosecute the person, firm or corporations so violating the provisions hereof.

SECTION IV. Any changes, either in the ingredients or in the proportions or percentages of the ingredients in any such "patent" or "proprietary" medicine manufactured within this state, shall be at once reported by the manufacturer thereof to the Board of Health of this state.

SECTION 5. Any person, firm or corporation who shall manufacture, or expose or offer for sale, or sell, or give away, or otherwise dispose of, any such "patent" or "proprietary" medicine within this state, in violation of the provisions of this act, or any of them, shall be guilty of a misdemeanor and on conviction thereof shall be punishable therefor by a fine of not less than fifty dollars (\$50) nor more than five hundred dollars (\$500), or imprisonment for not less than thirty (30) days nor more than six (6) months, or both.

SECTION VI. All acts or parts of acts inconsistent herewith are hereby repealed.

SECTION VII. This act shall take effect on the day of 1906.

Thus far we have quoted from the *Ladies' Home Journal*. We take the liberty of making the following suggestions:

The provision limiting the maximum strength of morphin and its derivatives to one twenty-fifth of 1 per cent. would represent a morphin strength equivalent to one grain in 44 fluid drams (0.04 gm. in 100 c.c.). The average teaspoonful is equivalent to 80 minims (5 c.c.) instead of one fluid dram, and it would contain about 1/32 grain of morphin. This is about what many of these medicines now contain; one of the largest used and which has to be labeled "Poison" in England, contains little more morphin than this.

The manufacturers of soothing syrups, cough syrups, "baby's friend," etc., could easily reduce the morphin amount to place their medicines beyond the law, with an increased consumption and sale as the only result. The quantity allowable should be reduced at least one-half—or, in other words, to one-fiftieth of 1 per cent.—but preferably no medicine containing opium, morphin, cocaine or their salts or derivatives in any proportion should be exempt; the "Poison" label should be used always when any of these drugs are contained in the preparation.

It is feared that the requirement that all medicines containing 8 per cent. alcohol should be labeled "Poison" is too dras-

tic, since all the tinctures of the United States Pharmacopeia, spirits or essences, such as peppermint, ginger, etc., may contain 50 per cent. or more of alcohol and are largely sold to the public for domestic uses. The alcohol provision might require that any medicine for internal use, of which the average dose is more than one teaspoonful (80 minims), if containing more than a given per cent. of alcohol, should be liable to all the conditions of sale, etc., of the ordinary distilled liquors.

Proprietary Medicines Discussed.

The New York County Medico-Pharmaceutical League at its last meeting held a symposium on "Proprietary Medicines." Some of the druggists held that they were compelled to carry mixtures of which they disapproved because some physicians prescribed them. From the standpoint of the manufacturer, Frederick Mason and Benjamin T. Fairchild stated that through better machinery and greater quantities of material they could do better than the apothecary in his shop. Dr. William J. Robinson and Dr. Heinrich Stern declared that certain manufactured drugs were known as staples to be trusted, but that there are many which are not even to be experimented with.

Commendations of the Fight Against Nostrums.

Dr. Albert S. Barnes, Bokins, Ohio, writes, under date of January 16:

"I am glad to note the awakening in THE JOURNAL. I hope the time will speedily come when all who read THE JOURNAL or advertise in it will know assuredly that it stands for ethics, means to be ethical, and is ethical; and that so it will champion the cause of legitimate medicine and honorable practitioners against all fakes and fakers, whether within or without the profession."

Dr. E. B. Partin, Chunky, Miss., January 16, writes:

"I am well pleased with THE JOURNAL and as president of our county (Newton) society can say that we fully indorse your course in regard to 'patent' and proprietary medicines. A bill now before our legislature will very likely pass in regard to this growing evil."

Dr. F. W. Taylor, Provo City, Utah, writes, January 12:

"Your articles on the patent and proprietary medicines (as well as those in several lay journals) are certainly working wonders among the members of the general medical profession, causing them to think for themselves and to discard the ready made and highly seasoned therapeutics that have been almost daily forced on them by the dealers."

"Continue the good work and do not cease your efforts until deception and graft have been overthrown. You certainly have the whole medical profession behind you and with such a sustaining force wonders can and will be accomplished."

"Wishing you success in your fight for right, your educative measures, and your high ideals."

Dr. Richard F. Rand, New Haven, Conn., writes, January 20:

"Allow me also to express my appreciation of your efforts in the crusade against the nostrum evil. I hope you will continue your suggestions for treatment along the line of standard therapeutics."

Dr. W. H. Emsworth, Boston, writes January 17:

"The two reasons that I subscribe at this time are: First, the fact that the next meeting of the American Medical Association is to be held in Boston; second, the stand you have taken on the question of the use of proprietary medicines."

"The latter is the more important and is the deciding reason with me. Laziness or ignorance is the only imaginable excuse for such use. Usually it is both, with one or the other predominating. I trust that you will keep on with the good work."

At a meeting held January 3, the Suffolk District Section of the Massachusetts Medical Society passed resolutions indorsing the action of the American Medical Association in establishing a Council on Pharmacy and Chemistry, and approving the work done by the Council. The society also commended the work done by THE JOURNAL, *Collier's Weekly* and the

Ladies' Home Journal in exposing the methods of the Proprietary Association and showing up the fraudulent use of sham testimonials and the loss of life due to the use of products exploited by members of that association. Similar resolutions were passed by the Tippecanoe County (Ind.) Medical Society, the Jackson County (Mo.) Medical Society, the Jefferson County (Ala.) Medical Society, and the Delaware County (Pa.) Medical Society.

The Gibson County (Ind.) Medical Society, at the regular meeting, held January 26, adopted the following resolutions:

Resolved, That in view of the rapidly increasing patent and proprietary nostrum evil being imposed on the people and exploited among physicians of the county, it becomes our duty and pleasure heartily to action of the American Medical Association in establishing a Council on Pharmacy and Chemistry.

Resolved, That we urge The *JOURNAL* of the American Medical Association to continue its campaign of educating its readers in the use of official drugs and remedies.

Resolved, That we heartily approve the stand taken by *Collier's Weekly* and the *Ladies' Home Journal*, in their attempt to arouse in the public conscience a just appreciation of the nostrum evil, and the manner and means used to coerce the public press to exploit these goods and to oppose the passage of any laws that would compel the fixing of a label on each package whereby the public might know what it is taking.

Resolved, That a copy of these resolutions be sent to The *JOURNAL* of the American Medical Association, to *Collier's Weekly* and to the *Ladies' Home Journal*.

No Longer Members of the Proprietary Association.

We have been notified by the Cystogen Chemical Company, St. Louis, that they have resigned from the Proprietary Association of America.

Messrs. Schlottbeck & Foss Company, Portland, Maine, have also notified us that they have withdrawn from the Proprietary Association.

Another Country Newspaper Taking the Right Stand.

The *Ashland* (Neb.) *Journal* declares that it will not take advertisements from fraudulent patent medicine companies. It expresses its indignation over the fact that newspapers which should stand as defenders of the home accept the advertisements of these frauds and help them reach their victims. The editor admits that some testimonials are genuine and that some persons are helped by these nostrums, but he calls attention to the fact that the same can be said about whisky, and that both the nostrums and whisky are responsible for thousands of dishonored graves, wrecked lives, ruined homes and broken hearts. The editor says further that his paper "needs advertising as badly as any paper in the state, but it does not need it badly enough to accept one line that it does not believe is thoroughly reliable, and we have no space for any medicine we do not know to be absolutely reliable."

"*Ashland* has a number of physicians whose abilities and characters stand unquestioned. We have drug stores where absolute honesty and accuracy are beyond doubt. Our physicians and druggists are men whom one can trust with the health and welfare of his loved ones with perfect confidence that the trust will be regarded as sacred and holy—men who would not endanger the lives of their patients for any amount.

"Health is the most precious blessing of this life, and we can not guard it too carefully. Don't risk it with patent medicines put up by strangers. Go to your home doctor."

Alcohol in "Patent Medicines."

A bill relating to alcohol in patent medicines has been introduced in the Massachusetts legislature. Last year a similar bill was defeated in the state senate. This year's bill (House No. 231) accompanying the petition of Representative W. Rodman Peabody for legislation to require that the percentage of alcohol in patent or proprietary medicines or foods shall be stated on bottles or packages thereof, provides that "on every package, bottle or other receptacle holding any proprietary or patent medicine, or any proprietary or patent food preparation, which contains alcohol to an amount exceeding 3 per cent. by volume thereof, there shall be marked or inscribed a statement of the percentage of alcohol by volume contained therein; and that whoever manufactures, sells or offers for sale any medicine or food preparation in violation of the provisions of this act shall be punished by a fine of not less than five nor more than one hundred dollars."

Marriages

ARTHUR MCGUGAN, M.D., to Miss Lucia Owen, both of Denver, January 24.

PAUL H. KEYES, M.D., to Miss Esther Collier, both of Dana, Ind., January 11.

G. W. DUNKLE, M.D., to Miss Ida E. Hemstead of Newport, Iowa, January 16.

ADAM B. FLEEGER, M.D., to Miss Etta M. Taylor, both of Cairo, Mo., January 17.

J. T. MILES, M.D., Bryant, Ind., to Mrs. Mary Addington of Geneva, Ind., January 15.

FRANCIS F. H. SULLIVAN, M.D., to Miss Ethel Casebolt, both of Miami, Mo., January 13.

WALTER S. KING, M.D., Cedar Rapids, Iowa, to Miss Mabel Gravatt of Tracer, Iowa, January 17.

F. M. BRUCE, M.D., Pineview, Ga., to Miss Annie Pearl Mitchell of Abbeville, Ga., January 7.

A. SPENCER KAUFMAN, M.D., Philadelphia, to Miss Florence Fox of Lock Haven, Pa., January 24.

HEBER H. CLEVELAND, M.D., Orange, Mass., to Miss Mary Elizabeth Reed of Toledo, Ohio, January 17.

JOSEPH VON C. ROBERTS, M.D., Philadelphia, to Mrs. Grace F. Reynolds of Middletown, Del., January 23.

HAWKINS BISHOP, M.D., Burnside, Ky., to Miss Lura Lipps of Hustonville, Ky., at Lexington, Ky., January 24.

WILLIAM WHITEHEAD GIBELLAN, M.D., New York City, to Mrs. Mary Louise Hayes of Newark, N. J., January 25.

E. LAWRENCE MEYER, M.D., Walnut Grove, Minn., to Miss Margaret Emerson Dinsmore of Minneapolis, January 17.

LIEUTENANT JOHN ALEXANDER CLARK, M.D., United States Army, to Miss Anna Nicholson Scott, at Washington, D. C., January 26.

Deaths

Berthold B. Pirosh, M.D. University of St. Petersburg, Russia, 1877; a member of the American Medical Association, Illinois State Medical Society, Chicago Medical Society, and the German Medical Association; professor of electro-therapeutics in the College of Physicians and Surgeons, Chicago; a member of the United Hebrew Charities, and a member of the medical staff of the Orthodox Home for Aged Jews; by reason of his activity in behalf of Jewish immigrants, known as the "father of the Russian Jews," died at his home in Chicago, January 25, from pleurisy, after an illness of seven months, aged 52.

John W. Long, M.D. Bellevue Hospital Medical College, New York City, 1865, of Bryan, Ohio; acting assistant surgeon in the Army for three years; a member of the American Medical Association, and of the Ohio State Medical Society, Northwestern Ohio Medical Society and Williams County Medical Society; local surgeon of the Lake Shore & Michigan Southern Railway for more than thirty years, died at St. Joseph's Hospital, Chicago, from heart disease, while under operation for malignant disease of the throat, January 23, aged 71.

Adebert D. Head, M.D. Albany (N. Y.) Medical College, 1866; a member of the American Medical Association; one of the founders of the New York State Medical Association; a member of the Syracuse Academy of Medicine; a veteran of the Civil War; one of the best-known practitioners of Syracuse, N. Y., died at his home in that city, January 21, from diabetes, after an illness of nearly a year, aged 63.

Norman R. Miller, M.D. College of Physicians and Surgeons in the City of New York, 1882; a member of the Massachusetts Medical Society; for several years medical director of a sanitarium in Lynn, Mass., died recently at the Westboro Insane Hospital, from brain disease, after an illness of more than a year.

James Marion Walker, M.D. University of Louisville (Ky.) Medical Department, 1848; St. Louis Medical College, 1855, died at the home of his son-in-law, Dr. J. Y. Hume, Armstrong, Mo., from carcinoma of the right shoulder, Dec. 8, 1905, after an illness of about two years, aged 81.

Simon A. Freeman, M.D. University of Buffalo (N. Y.) Medical Department, 1869; hospital steward during the Civil War; acting assistant surgeon, United States Army, from 1870 to 1879; for many years in business in Everett, Mass., died recently at his home in California.

Charles C. Parker, M.D. Starling Medical College, Columbus, Ohio, 1850; late demonstrator of anatomy in that institution; surgeon of the Twelfth Iowa Volunteer Infantry in the Civil War; for four years trustee of the Iowa Hospital for the Insane, Independence, and for many years a trustee of the Upper Iowa University, died suddenly at his home in Fayette, Iowa, January 14, aged 82.

Thomas B. Potter, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1851; assistant surgeon of the Seventy-seventh Pennsylvania Volunteer Infantry in the Civil War; at one time Burgess of Phillipsburg, Pa., died at his home in that place, January 12, from disease of the kidneys, after an illness of ten weeks, aged 76.

William B. Neftel, M.D. University of St. Petersburg, Russia, 1852; a member of the Medical Society of the County of New York, New York Academy of Medicine, New York Pathological Society, and Physicians' Mutual Aid Association; a specialist on nervous diseases, died at his home in New York City, January 20, aged 75.

Artemus L. Hersey, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1853, for more than half a century a practitioner of Oxford, Maine, and for several years superintendent of schools, died at the home of his daughter in Boston, January 12, from cerebral hemorrhage, after an illness of two days, aged 79.

Frank H. Caldwell, M.D. Jefferson Medical College, Philadelphia, 1880; a member of the American Medical Association; for more than 20 years a practitioner of Florida, and for several years chief surgeon in that state for the Plant System, died at his home in Tampa, January 20, from nephritis.

John Martin Klueck, M.D. Medical College of the State of South Carolina, Charleston, 1905, an interne at the Kingston Avenue Hospital for Contagious Diseases, Brooklyn, N. Y., died at that institution, January 19, from scarlet fever, after an illness of six days, aged 22.

William H. Harrison, M.D. Bellevue Hospital Medical College, New York City, 1864, assistant surgeon of the Fourth Wisconsin Volunteer Cavalry during the Civil War, died at his home in Brunner, Texas, January 19, from nephritis, after an illness of a year, aged 65.

Edward Williams, M.D. Medical College of Virginia, Richmond, 1856, a member of the Dan River district school board as well as prominent in county affairs, died at his home in Malmaison, Va., January 20, after an illness of a year, aged 72.

Julian Perault, M.D. Faculty of Medicine of Queen's University, Kingston, Ont., 1857, a pioneer physician of San Francisco, died at the home of his daughter in Alameda, January 15, from cerebral hemorrhage, after an illness of 19 days.

Howard O. Smith, M.D. Vanderbilt University Medical Department, Nashville, 1892, formerly of Alpine, Quanar and Hamilton, Texas, died from tuberculosis at Guadalupe, Mexico, January 12, after an illness of several years.

George H. Carpenter, M.D. Vermont Medical College, Woodstock, 1842, surgeon of the Ninety-first Ohio Volunteer Infantry in the Civil War, died at his home in Cleveland, January 21, after an invalidism of several years, aged 85.

Charles Stuart Tripler, M.D. University of Paris, France, 1866, of Cromwell, a veteran of the Civil War, died at the Fannie Paddock Hospital, Tacoma, from septicemia, after an illness of several weeks, aged 59.

Milton Baker, M.D. Trinity University and Trinity Medical College, Toronto, 1894, of Brantford, Ont., died in the Brantford General Hospital January 23, from middle-ear disease followed by meningitis, aged 38.

Pleasant B. Cross, M.D. Eclectic Medical Institute, Cincinnati, 1872, a veteran of the Civil War, died at his home in South Webster, Ohio, January 22, from pneumonia, after an illness of one week, aged 62.

Louis Thompson Sturgis, M.D. Rush Medical College, Chicago, 1882, a well-known physician of Fort Wayne, Ind., died at his home in that city, January 15, from nephritis, after an extended illness, aged 57.

Hannibal Hamlin, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1872, chairman of the board of selectmen of Orono, Maine, died at his home in that place, January 19, from peritonitis, aged 58.

J. W. Oslin, M.D. Medical College of Georgia, Augusta, 1854, for many years local surgeon of the Southern Railroad, died at his home in Gainesville, Ga., January 9, after an illness of several weeks, aged 78.

Franklin P. Sigworth, M.D. College of Physicians and Surgeons, Baltimore, 1883, died at his home in Craneyville, Pa.,

January 8, from accidental poisoning by fluid extract of acorn, taken in mistake for cough syrup, twenty-four hours before, aged 50.

Edwin Dudley Smith, M.D. Eclectic Medical College of the City of New York, 1876, died at his home in Springfield, Mass., January 4, after an illness of ten months, from valvular heart-disease, aged 72.

William Hillhouse, M.D. New York University, New York City, 1845, once tax collector of New Haven, Conn., died at the home of his son in that city, January 17, from cerebral hemorrhage, aged 85.

Joseph A. Coffman, M.D. Kentucky School of Medicine, Louisville, 1890, of Poetry, Texas, fell from a railroad trestle at Terrell, Texas, January 18, and died the next morning from his injuries.

Charles Wesley Bayley, M.D. University of Vermont Medical Department, 1876, formerly of Oakdale, Cal., died at his home in San José, Cal., January 9, after a prolonged illness, aged 60.

John Frederick Brine, M.D. Harvard University Medical School, Boston, 1868, medical health officer for the Commercial Cable Company, died at Hazel Hill, Nova Scotia, January 18.

Edmund H. Evans, M.D. Jefferson Medical College, Philadelphia, 1889, died at his home in Philadelphia, from Bright's disease, January 26, after an illness of two years, aged 45.

Frank Parker Perry, M.D. Long Island College Hospital, Brooklyn, N. Y., 1873, died at his home in Bucksport, Maine, January 14, from paralysis, after a long illness, aged 55.

William Anderson Payne, M.D., formerly of New York City, a member of the Texas County (Texas) Medical Society, died suddenly in his office in San Antonio, Mich., Jan. 10, aged 32.

Frederick W. Lapsley, M.D. Detroit (Mich.) College of Medicine, 1892, surgeon during the Spanish-American War, died recently in Chicago, from pneumonia, aged 36.

Albert G. Sisson, M.D. Vanderbilt University Medical Department, Nashville, 1879, died suddenly at his home in Willa Point, Texas, January 9, from heart disease.

Alfred S. Patrick, M.D. Medical College of Ohio, Cincinnati, 1853, died at his home in Charleston, W. Va., January 23, after an illness of four weeks, aged 74.

William O. Powell, M.D. (Illinois State Board of Health), 1887, once postmaster of Mackinaw, Ill., died suddenly, January 23, while hunting near Mackinaw.

George Gaines Lyon, M.D. Pulte Medical College, Cincinnati, 1888, of Mobile, Ala., died in Chicago, January 17, from paralysis, after a prolonged illness, aged 45.

Columbus W. Osburn, M.D. Cincinnati College of Medicine and Surgery, 1871, died at his home in West Lebanon, Ind., January 11, after a long illness.

William John Early, M.D., member of the College of Physicians and Surgeons of Ontario, 1889, died at his home at Owen Sound, Ont., January 25.

M. C. Johnson, M.D. Kentucky School of Medicine, Louisville, 1880, died at his home in Ghent, Ky., January 23, from heart disease, aged about 60.

John McClellan, M.D. Jefferson Medical College, Philadelphia, 1836, died at his home in Woodstock, Conn., Dec. 19, 1905, from senile debility, aged 93.

L. B. Selvidge, M.D. Missouri Medical College, St. Louis, 1884, died at his home in Collins, Mo., January 6, from pneumonia, after a short illness.

Isaiah Williams, M.D. Eclectic Medical Institute, Cincinnati, 1853, died at his home in Clarence, Iowa, January 7, after a long illness, aged 85.

Henry S. Kelley, M.D. Ensworth Medical College, St. Joseph, Mo., 1893, died at his home in Fillmore, Mo., January 12, from pneumonia, aged 35.

Joseph Hancock, M.D. Hahnemann Medical College, Philadelphia, 1878, died at his home in Philadelphia, January 19, aged 54.

Amacey B. Abell, M.D. Jefferson Medical College, Philadelphia, 1875, died at his home in Philadelphia, January 24, aged 62.

Deaths Abroad.

Jose Esteve, M.D., of Murcia, Spain, died at an advanced age early in January. He was a very popular physician, president of the local academy of medicine, and had taken a prominent part in political life. All the stores in Murcia were closed on the day of his funeral, and his body was escorted to the tomb by a concourse of ten thousand mourners.

Book Notices

NEW YORK STATE LIBRARY. Yearbook of Legislation, 1904. Edited by E. H. Whitten. Sociology Librarian. Cloth. Price, \$1.00. Albany: New York State Education Department, 1905.

This yearbook furnishes a practical guide to American legislation, most useful to publicists, legislators, executives and others interested in any specific movement or in the general trend of legislation. It includes an index of legislation, briefly indexing or summarizing 2,190 laws and constitutional amendments. There is also a review of legislation made up of the contributions of forty specialists from all parts of the country, each reviewing the year's progress in his particular field.

ANATOMY AND PHYSIOLOGY FOR NURSES. By L. Lewis, M.D. Illustrated. Cloth. Pp. 317. Price, \$1.75 net. Philadelphia: W. B. Saunders & Co., 1905.

Dr. Lewis has confined himself to information really necessary for nurses and, unlike many authors, has not digressed from his subject. The text is clear and concise and the illustrations are good. At the end of each chapter there is a list of review questions which should prove of value to nurses using this book.

Queries and Minor Notes

SWEET SPIRITS OF NITER.

JAKIN, GA., Jan. 19, 1906.

To the Editor:—I would like to know whether or not sweet spirit of niter is of any use after it turns acid. Potter's Materia Medica says: "It soon turns acid on standing, and should not be kept long." I have a great deal of trouble getting it sweet, and on making complaint to my druggist about a package received that was intensely acid, he replied that the article was C. P., and all right, that the name sweet spirit of niter did not indicate that it was sweet, and that I could add a small quantity of bicarbonate of soda to blunt the sharpness. When fever mixtures are made with the acid stuff, it effervesces with potassium citrate, and does not that destroy the properties of the latter drug? Please state the facts in regard to this matter and oblige. H. G. MINTER.

ANSWER.—Spirit of nitrous ether was called "sweet" spirit of niter to emphasize the fact that when pure and fresh it should have an agreeable sweetish taste. It is a solution in alcohol of nitrous ether, which is ethyl nitrite with some other products derived in the making. This nitrous ether may be kept for a considerable time without change in alcoholic solution, but on exposure, or on dilution with water, or watery mixtures, it is rapidly decomposed. This is what happens to the spirit which often contains water and, therefore, turns acid, loses its strength and becomes unfit for use. To neutralize the acid by placing a crystal of potassium bicarbonate in the bottle is of course simply a makeshift. When spirit of nitrous ether effervesces with alkalies, it is valueless and should be replaced by a fresh supply. The only way to insure a fresh article is to obtain the spirit in original one-pound bottles of well-known make, and then to keep it in a cool, dark place in a tightly stoppered container. The concentrated nitrous ether may also be obtained in hermetically sealed glass-tubes which on dilution with alcohol produces at once a fresh and full strength spirit.

FOREIGN BODIES SWALLOWED AND SAFELY EXPELLED FROM THE INTESTINE.

TUCSON, ARIZ., Jan. 16, 1906.

To the Editor:—Referring to the reports of cases published by Drs. L. W. Little and J. A. Postlewait, in THE JOURNAL, Nov. 25, 1905, and Jan. 13, 1906, I would say that I have seen such articles passed by infants not infrequently. A few weeks ago a child of fifteen months swallowed a sawn pin, 3 inches in length and having on one end a glass head, slightly more than a quarter of an inch in diameter. The pin was passed intact after exactly six weeks. There were no symptoms in the interval. In another case, an adult, with a large abscess, swallowed a fish bone which in the course of about three months ulcerated out through the abdominal walls, making its appearance just below the umbilicus. In this case, there followed an intraperitoneal abscess, which was opened, the patient making a good recovery. Such articles as opened safety pins, brooches, etc., passed safely through the intestinal tube, must be encountered by every man with a large general practice. MARK A. ROGERS, M.D.

THONVILLE, OHIO, Jan. 19, 1906.

To the Editor:—In THE JOURNAL, Jan. 13, reference is made to two cases of infants swallowing safety pins. A case equally, if not more interesting, came under our observation during the past summer. A child of 6½ months swallowed an open safety pin measuring one inch in length and half inch at angle of opening. The pin was swallowed on the evening of June 29 and was discovered by the mother in the child's diaper on the morning of July 17. The

case is remarkable on account of the age of the child and the length of time the pin took to pass through the intestinal tract. The child suffered no inconvenience and received no treatment. G. W. and P. R. CLEMONS.

PHENOL AND FORMALDEHYD STERILIZATION.

IOWA, Jan. 19, 1906.

To the Editor:—1. Can knives be thoroughly sterilized in phenol? 2. Can dressings be thoroughly sterilized by formaldehyd vapor? If so, how? H. E. C.

ANSWER.—1. Knives can be thoroughly sterilized in 5 per cent. phenol solution. They should be rinsed in absolute alcohol before being used. 2. Yes, if the dressings are in sealed packages loosen them so as to be easily penetrated by the fumes. Place them in a receptacle in which the vapor can be generated and leave it closed a few hours after filled with the vapor. Formaldehyd sterilization of dressings is not very practical, as the vapor renders the dressings irritating, not only to the wounds, but also to the skin. To allow the dressings to remain spread out so that the vapor may escape might endanger recontamination. Steam sterilization is the best for dressings.

State Boards of Registration

COMING EXAMINATIONS.

NEBRASKA State Board of Health, State House, Lincoln, February, 7-S. Secretary, George H. Brash, Beatrice.

Louisiana November Report.—Dr. F. A. Larue, secretary of the Louisiana State Board of Medical Examiners, reports the written examination, held at New Orleans, November 14-15, 1905. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of applicants examined was 22, of whom 16 passed and 6 failed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|---|--------------------------------------|------------------------|------------|
| Cornell University | | (1905) | 94.4 |
| Women's Medical College of Pennsylvania | | (1905) | 84.8 |
| University of Arkansas | | (1905) | 83.8 |
| Baltimore Med. College | | (1901) | 83.2 |
| University of St. Louis | | (1905) | 80.2 |
| University of Palermo, Italy | | (1900) | 87.4 |
| Northwestern University | | (1905) | 83.6 |
| University of the South | (1890) 92; (1904) 75.4; (1905) 81.4. | | |
| 85.4, 87.6. | | | |
| Tulane Medical College | | (1905) | 78.4, 88.5 |
| University of Illinois | | (1904) | 80.6 |
| Flint Medical College* | | (1905) | 80.4 |
| FAILED. | | | |
| Louisville Medical College | | (1905) | 72.6 |
| Kentucky School of Medicine | | (1898) | 65 |
| Memphis Hosp. Medical College | | (1898) | 66 |
| University of Georgia | | (1889) | 74 |
| Flint Medical College* | | (1904) 69.8; (1905) 66 | |

* Colored.

Maryland December Report.—Dr. J. McPherson Scott, secretary of the State Board of Medical Examiners, reports that 31 of the 60 candidates who took the examination in December, passed successfully and received licenses.

Michigan.—Dr. Beverley D. Harison has announced the removal of the office of the State Board of Registration in Medicine from Sault Ste. Marie to 303 Whitney Building, Detroit.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending January 27:

Devereux, J. R., and Keller, Wm. L., asst.-surgeons, ordered to accompany Second Infantry from Fort Logan, Colo., to San Francisco. On completion of this duty to return to their proper stations. Asst.-Surgeon Keller, Fort Douglas, Utah, to report not later than the 23d inst., at Fort Logan, Colo.

Rockhill, Edward P., asst.-surgeon, advanced from grade of first lieutenant to captain.

Ford, Clyde S., asst.-surgeon, relieved from duty at Fort Barrancas, Fla., and ordered to medical supply depot, New York City, N. Y., for duty.

Asbush, P. M., and Craig, Charles P., asst.-surgeons, appointed members of a board of medical officers to meet at Manila, P. I., for the purpose of studying tropical diseases as they exist in the Philippine Islands. The board will be governed in its proceedings by such instructions as it may receive from the Surgeon General of the Army.

Snyder, Henry D., surgeon, ordered to Fort Reno, Oklahoma Territory, for purpose of investigating and reporting on administration of medical department at that post.

Mayton, J. B., asst.-surgeon, reported for temporary duty at Military Prison, Fort Leavenworth, Kans.

Scott, Geo. H., asst.-surgeon, granted thirty days' leave of absence when relieved from duty at San Francisco.

Hallock, H. M., surgeon, granted twenty-one days' sick leave of absence.

Bispham, Wm. N., asst.-surgeon, leave of absence extended thirty days.

Gandy, Charles M., surgeon, ordered to accompany Headquarters and Second Battalion, First Infantry, from Fort Wayne, Mich., to New York City, and on completion of this duty to return to station.

Marrow, Chas. E., asst.-surgeon, ordered to proceed from Fort Sheridan, Ill., to Fort Brady, Mich., to accompany First Battalion First Infantry from that post to New York City, and on completion of this duty to return to station.

Codina, J. M., asst.-surgeon, reported for duty at Army and Navy General Hospital, Hot Springs, Ark.

Reilly, John J., Shook, Jay L., Wilson, Compton, asst.-surgeons, ordered to report to Major William H. Arthur, president of examining board, Army Medical Museum Building, this city, for examination to determine their fitness for advancement.

Thorpe, Charles W., contract surgeon, granted sick leave of absence for one month.

Carson, Samuel K., contract surgeon, ordered to Fort Jay, N. Y., for temporary duty.

Brooks, John D., contract surgeon returned to Fort Meade, S. D., from leave of absence.

Hall, Henry M., contract surgeon, ordered to temporary duty at Fort McDowell, Cal., on the completion of which duty he will proceed home, Cedarhurst, Ga., for annulment of contract after leave of absence for two months.

Millickin, John D., dental surgeon, granted ten days' leave of absence.

Wolven, P., Homer, dental surgeon, left Fort McKinley, Me., and arrived at Fort Preble, Me., for duty.

Long, Charles J., dental surgeon, ordered to visit, in succession, Forts Harrison, Mont.; Missoula, Mont.; Yellowstone, Wyo.; Keogh, Mont.; Lincoln, N. D.; Assiniboine, Mont.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending January 27:

E. L. Jones, asst.-surgeon, appointed assistant surgeon, with rank of Lieutenant, junior grade, from Dec. 30, 1905.

Page, J. E., surgeon, commissioned surgeon from April 20, 1904.

Bell, W. H., surgeon, commissioned surgeon from May 20, 1905.

Brown, E. M., P. A. surgeon, commissioned P. A. surgeon from May 8, 1905.

Baker, M. W., P. A. surgeon, commissioned P. A. surgeon from July 19, 1905.

Lewis, J. P., surgeon, detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to the Naval Hospital, Norfolk, Va.

Pickrell, G., surgeon, detached from duty in charge of the Naval Hospital, San Juan, P. R., ordered home, and granted sick leave for three months.

Murphy, J. F., P. A. surgeon, commissioned P. A. surgeon from May 18, 1905.

Holloway, J. H., P. A. surgeon, commissioned P. A. surgeon from September 26, 1905.

Schwerin, L. H., acting asst.-surgeon, appointed acting asst.-surgeon from Jan. 28, 1906.

Stokes, C. F., surgeon, detached from duty at the Naval Medical School, Washington, D. C., February 7, and ordered to duty in command of the Naval Hospital, San Juan, P. R., sailing from New York, N. Y., about February 10.

Braisted, W. C., surgeon, detached from the bureau of medicine and surgery, Navy Department, February 7, and ordered to duty at the Naval Medical School, Washington, D. C., and to additional duty as a member of the anatomical board of the District of Columbia.

Field, J. G., surgeon, detached from the *Celtic* and ordered home to wait orders.

Jones, E. L., asst.-surgeon, ordered to the Naval Hospital, Mare Island, Cal.

McDonell, W. N., asst.-surgeon, detached from the Naval Station, Culebra, W. I., and ordered to the *Matine* to temporary duty, and thence to the *Celtic*.

Hull, H. F., asst.-surgeon, detached from the Naval Hospital, New York, N. Y., and ordered to the *Celtic* for temporary duty, and thence to the Naval Station, Culebra, W. I., and to additional duty on the *Alliance*.

Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending January 24:

Guitierrez, G. M., surgeon, granted ten days' leave of absence from January 27.

Greene, J. B., P. A. surgeon, granted leave of absence for two months and twelve days from January 18.

Poster, M. H., P. A. surgeon, granted leave of absence for one month from January 23.

Richardson, T. P., P. A. surgeon, granted three months leave of absence from January 20, with permission to go beyond sea.

Richardson, T. P., P. A. surgeon, relieved from duty at Savannah, Ga., effective January 24.

Richardson, T. P., P. A. surgeon, excused from duty, without pay, from April 30, 1906, to Feb. 15, 1907, for the purpose of undertaking the sanitation of the North coast of the Republic of Honduras.

McKeon, F. H., asst.-surgeon, temporarily relieved at San Francisco Quarantine Station, and directed to proceed to Columbia River Quarantine Station for temporary duty.

Hedley, H. W., acting asst.-surgeon, granted leave of absence for twenty days, from January 20.

Stearns, W. L., pharmacist, granted extension of leave of absence for seven days, from January 20.

RESIGNATION.

Greene, J. B., P. A. SURGEON, resigned to take effect, March 30.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended January 24:

SMALLPOX—UNITED STATES.

California: San Francisco, Jan. 6-13, 7 cases.
Colorado: Teller County, Dec. 1-31, 10 cases.
Florida: Jacksonville, Jan. 13-20, 5 cases; Alachua County, 1 case; Columbia county, 4 cases; Hillsboro County, Jan. 13-20, 12 cases; La Fayette County, Jan. 13-20, 6 cases.
Kentucky: Covington, Jan. 13-20, 2 cases.
Louisiana: New Orleans, Jan. 13-20, 1 case; Shreveport, 3 cases.
Maryland: Baltimore, Jan. 13-20, 4 cases.
Missouri: St. Louis, Jan. 13-20, 1 case.
Montana: Flathead County, Dec. 1-31, 1 case.
Ohio: Cincinnati, Jan. 12-19, 6 cases.
Virginia: Norfolk, Jan. 15, 5 cases; (at Craney Island, 68).
Washington: Bellingham, Dec. 1-31, 8 cases; Cowlitz County, 7 cases; Spokane, 2 cases; Whitman County, 1 case.
Wisconsin: Appleton, Jan. 13-20, 2 cases; Milwaukee, Jan. 6-20, 2 cases.

SMALLPOX—INSULAR.

Porto Rico: San Juan, Nov. 1-30, present.

SMALLPOX—FOREIGN.

Africa: Cape Town, Dec. 2-9, 2 cases.
Brazil: Rio de Janeiro, Dec. 10-24, 3 cases, 1 death.
Canada: Toronto, Jan. 6-13, 1 case.
Chile: Antofagasta, Oct. 1-31, 51 deaths; Nov. 1-30, 27 deaths.
China: Hong Kong, Dec. 2-9, 1 case, 1 death.
Ecuador: Guayaquil, Dec. 10-17, 5 deaths.
France, Paris, Dec. 31-Jan. 6, 15 cases, 1 death.
Gibraltar: Dec. 24: Jan. 7, 12 cases, 1 death.
India: Bombay, Dec. 10-26, 6 deaths; Karachi, Dec. 17-24, 1 case.
Italy: Catania, Jan. 4-11, 3 deaths.
Mexico: Tuxpam, Jan. 9-16, 20 cases, 1 death.
Russia: Moscow, Nov. 11-23, 10 cases, 3 deaths; Odessa, Jan. 10-30, 25 cases, 3 deaths; St. Petersburg, Dec. 19-23, 26 cases, 3 deaths.
Spain: Barcelona, Dec. 21-31, 13 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, Dec. 10-24, 9 cases, 9 deaths.
Cuba: Havana, Jan. 16-22, 2 cases, 2 deaths.
Ecuador: Guayaquil, Dec. 10-17, 6 deaths.
Mexico: Orizaba, Jan. 7-13, 1 case, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, Dec. 2-9, 1 case, 1 death.

CHOLERA—FOREIGN.

Russia: Government of Lomza, Dec. 18-21, 5 cases.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Dec. 10-24, 16 cases, 7 deaths.
China: Hong Kong, Dec. 2-9, 3 cases, 3 deaths.
India: Bombay, Dec. 19-26, 9 deaths; Karachi, Dec. 17-24, 17 cases, 13 deaths.
Japan: Kobe, Nov. 8-Dec. 8, 41 cases, 30 deaths; Osaka, Nov. 2-Dec. 8, 66 cases, 51 deaths.
Peru: Guadalupe, Nov. 20-Dec. 10, 2 cases; Lima, 7 cases; Trujillo, 3 cases.

Medical Organization

Kansas.

NEOSHO COUNTY MEDICAL SOCIETY.—With a charter membership of 22 this society was organized at Chanute. The following officers were elected: Dr. Ralph A. Light, Chanute, president; Dr. John C. Lardner, Chanute, vice-president; Dr. L. D. Johnson, Chanute, secretary and treasurer; Drs. William E. Barker and J. B. Edwards, both of Chanute, delegates to State Society, and Drs. F. W. Jones, Earleton; G. W. Morgan, Kimball, and Orlando M. Edwards, Chanute, censors.

Louisiana.

UNION PARISH MEDICAL SOCIETY.—This society entered into permanent organization at Farmerville, Dec. 19, 1905, and elected the following officers: Dr. Charles H. Jameson, Farmerville, president; Dr. William Sellers, vice-president, and Dr. Royal L. Love, Mosely's Bluff, secretary and treasurer.

Oklahoma.

COMANCHE COUNTY MEDICAL AND SURGICAL SOCIETY.—This society was recently organized at Lawton, with Dr. Lorin C. Knece, president, and Dr. Maud N. Mead, secretary, both of Lawton.

SOUTHWESTERN OKLAHOMA MEDICAL ASSOCIATION.—Under this name the physicians of Greer, Washita, Kiowa and Custer counties organized at Cordell, January 17. The following officers were elected: Dr. W. L. York, Hobart, president; Drs. A. W. Holland, Hobart, and James Hempstead, Arapahoe, vice-presidents; Dr. Alfred H. Bungardt, Cordell, secretary, and Dr. T. J. Dodson, Mangum; W. J. Kerley, Cordell; W. W. Miller, Gotebo; William Tidball, Barton; James Hempstead, Arapahoe, and James M. Bonham, Hobart, censors.

What Can the County Society Do?

IX. CO-OPERATE WITH THE HEALTH OFFICER.

Every county medical society should be actively interested in the appointment of municipal boards of health and health officers. A committee—the public relations committee usually—made up of strong and tactful members, should gradually make the political forces feel that the organized profession has a vital though perfectly unselfish interest in these appointments. Having secured good health officials and proper ordinances, there should be constant and complete co-operation between the society and the authorities.

In Cleveland, during the epidemic of smallpox, the committee of public health of the Academy of Medicine held weekly or daily meetings, as the occasion demanded, lending every possible aid to securing the complete vaccination of the citizens. The service rendered was so valuable and so evident that before long the mayor publicly and officially designated the members of the committee as an advisory board to the health officer.

Something of this sort is everywhere possible if the officials are considerably approached, a more recent instance having occurred at Natchez, where a society committee did splendid service during the epidemic of yellow fever.

X. DUTY OF REPORTING INFECTIONS.

One of the most difficult and embarrassing duties of a physician, and at the same time one of his most essential and responsible tasks is that of reporting cases of infectious disease. The patient and his family so earnestly desire concealment that the physician's position is most uncomfortable, but modern science has no hesitation in saying that his highest duty is to the community. Among the Italians in New Orleans a physician who reported a case of yellow fever was promptly discharged from attendance on all Italian cases. Yet Surgeon White, United States Public Health and Marine-Hospital Service, lays down the dictum: "A case of yellow fever known is a case of yellow fever extinguished." This truth was amply demonstrated at New Orleans during the past summer, and never again should it be necessary to fine physicians for failure to report cases. Preventive medicine is helpless in the face of epidemic disease unless every physician early recognizes and promptly reports every suspicious case.

In consequence it is the duty of the county medical society—the well-organized society that embraces within its membership every available physician in the county—to face and discuss this subject with a view to having every member recognize his solemn obligation to the commonwealth and to medicine. The proper support of the notification ordinance that every community should enact, it is easy to see, becomes a light task when there is complete unanimity among the physicians. Having, after consideration, agreed together to report every case of infection, the unreasonable citizen will learn that discharging his physician will not aid in concealment, and there will be an end to the application of the boycott to those physicians who do their duty. In many communities it will be feasible for the members to adhere to a "gentleman's agreement" to see that due punishment is administered to every member who is caught failing in this duty. It should be further agreed among the members that they will procure the punishment of all practitioners outside the society who conceal infectious cases. The execution of this plan will in a short time prove to be a great boon to the community, and will correspondingly increase the public respect for our profession.

The general action of the county societies on this question means something of vital moment to society, for such unanimous obedience to a good notification ordinance signifies that old-fashioned quarantine may forever be abolished.

Society Proceedings

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting, held Jan. 30, 1905

The President, DR. JAMES M. ANDERS, in the Chair.

Chronic Acetanilid Poisoning, with Report of a Case Due to Absorption of the Drug from a Leg Ulcer.

DR. JAMES B. HERRICK, Chicago, read a paper with the above title which appears in this issue of THE JOURNAL, page 351.

DISCUSSION.

DR. ALFRED STENGEL spoke of the necessity of distinguishing between acute acetanilid poisoning, which is exceedingly common, and chronic acetanilid poisoning, which is rare. His experience is limited to five cases, three of which he had examined: two others he had seen, but was not permitted to report. The first case was one similar to that reported by Dr. Herrick. There were the marked changes in the blood, such as he had not seen in any other case, the very marked change in the character of the red corpuscles, with the very decided tendency to nucleated red corpuscles. The case was that of a young girl brought to the University Hospital to be under the care of Dr. Matthew H. Cryer for trifacial neuralgia. On her arrival from Connecticut she was in such a desperate condition that surgical treatment was not warranted and she was put under medical inspection. She was extremely cyanotic. By direction of Dr. Stengel, she was bled to the extent of six or eight ounces. Dr. C. Y. White was convinced of the presence of acetanilid poisoning and soon convinced Dr. Stengel of the truth of his theory. After investigation it was found that the girl was surreptitiously receiving acetanilid capsules and she afterward confessed. The case was one of those diagnosed as congenital heart disease. The diagnosis had been made by a distinguished clinician who, it was suggested, was a good deal occupied and had made a more or less casual examination. Among several other diagnoses which had been made of the girl's condition was that of mediastinal tumor. That such mistaken diagnoses should have been made was not a surprise, owing to the most remarkable changes through which the heart passed. It increased tremendously in size. She had had several attacks of acute dilatation with the appearance and subsequent disappearance of a loud systolic murmur, with corresponding increase and subsidence in the intense cyanosis. With the intense cyanosis the extremities were warm. This was one of the first features suggesting the true nature of the case. Dr. Stengel expressed his belief that such changes in the heart could not be produced without serious damage to the musculature. To have a heart suddenly dilate and spread an inch or an inch and a half, beyond peradventure of a doubt, and then pull itself together on the cessation of the drug and the cyanosis disappear, he felt could not but leave some impression on the heart.

Interesting features were presented in the two other cases he had examined. In one, that of a very intelligent man, there were symptoms of cyanosis of the fingers and lips, with a sort of steel-blue color of the skin. The man had been taking "Phenalgine" and showed what Dr. Herrick had called a peculiar moral perversity: When under the influence of the drug he denied taking it; when not under its influence, he was willing to confess his use of it. The third case was that of a woman who secured the drug without the attending physician's knowledge. Dr. Stengel's diagnosis was proved to be correct. While under his care he found it possible to induce cyanosis, which disappeared readily when the drug was stopped.

Aside from these intense cases, Dr. Stengel believes with Dr. Herrick in the existence of a large number of cases of acetanilid poisoning of minor grade. In his own practice he has seen cases of disturbance of heart action and of general health which he believed due to frequent ingestion of the drug in sufficient amounts to interfere with health. Because these are the cases most numerous, he believed them of the most importance to the profession. Here, again, he believed with Dr.

Herrick that if physicians were on the alert the cases would not be difficult to recognize. He admitted the possibility of their being mistaken for a number of conditions detailed by Dr. Herrick.

Dr. S. SOLIS COHEN continued the thought expressed by Dr. Stengel that the physician should be constantly on the watch for the minor grades of acetanilid poisoning. In cases presenting ill-assorted and vague symptoms, explanations other than the true one might be given, unless some knowledge of the history, or unguarded remark of the patient directed attention into the right channel. He recalled the case of a very intelligent man who had been under his care for a number of years who had originally had attacks of migraine which he had himself treated by tablets bought at any drug store, these headaches and attacks of vomiting had been completely relieved by the use of glasses prescribed by Dr. George M. Gould. This case was an instance of true migraine relieved by proper refraction, the existence of which was looked on with doubt by a good many neurologists. Some time after passing from under Dr. Cohen's observation, and while spending the summer in the mountains, he was suddenly attacked with fainting, and he was informed by the examining physician that he had acute Bright's disease. He returned promptly to Philadelphia. Dr. Cohen's examination of the urine discovered the urine to be free from albumin, casts and sugar. It was learned that the man had been taking, when he felt tired, some bromo-seltzer. A further study of the case convinced Dr. Cohen that it was one of chronic acetanilid poisoning. In another case recalled by Dr. Cohen, in which the patient had had chronic heart disease, for some time the cyanosis was out of proportion to the cardiac lesion and investigation showed the bromo-seltzer habit. He is convinced that bromo-seltzer is perhaps the most common and most dangerous cause of chronic acetanilid poisoning among intelligent people.

One of the great dangers of chronic poisoning with coal-tar products was pointed out to be the sudden yielding of the heart to some unusual strain. Dr. Cohen further recalled the case of a young woman who had persisted in taking antikamnia, which had been originally prescribed for migraine. About a year after her marriage she died suddenly, following an apparently normal labor. The knowledge of the continued use of antikamnia during pregnancy gave the clue to the cause of death. The cases were cited as illustrations of the widespread habit of taking coal-tar products and of the hold which the habit takes on people, although warned against it. He pointed out the importance of recognizing the early changes resulting, and the importance also of not mistaking for serious organic disease of heart or kidneys the profound symptoms sometimes developed.

Dr. HENRY LEFFMANN called attention to the probability that under the condition of the new Pharmacopœia there would be an increase in the cases of chronic acetanilid poisoning. This was because the Pharmacopœia had put on its list the compound powder of acetanilid, which was expected to take the place of antikamnia. He thought the motive had been to meet this very successful proprietary and others of its class. In his opinion it was bad judgment so to place it, since every pharmacist would feel at liberty to sell it for headaches. A few of the high-class pharmacists would sell phenacetin, but with the cheaper price of acetanilid the tendency would be to sell the latter. He recalled the statement of an English physician that many so-called rare diseases were possibly only exaggerated forms of common conditions, and that if physicians would learn to look for the marked symptoms they would find the disease to be far less common than supposed to be. He believed that the practice of taking these drugs was so excessive and so encouraged by prescribing druggists that many troubles were mistaken by physicians for conditions of real disease, whereas they were really conditions of acetanilid or other coal-tar products poisoning.

Dr. H. C. WOOD, JR., thought that Dr. Herrick had made out a very good case of the non-existence of chronic acetanilid poisoning. It had seemed to him that Dr. Herrick's case, also that of Dr. Stengel, were those rather of a series of successive acute poisonings than of one chronic poisoning. There were

not shown any of the characteristic symptoms following chronic poisoning; for example, as in sulfonal, the persistence of the symptoms after the withdrawal of the drug, and no permanent injury wrought by the prolonged use of the drug. Moreover, it was noted that Dr. Herrick in his experiments had been unable to produce any serious pathologic lesion in animals by the prolonged use of the drug. The symptoms had occurred immediately following the administration of very large doses of the drug, and persisted because the drug was persisted in until the animal died. It seemed to him, therefore, much more logical to regard the cases as repeated attacks of acute poisoning following the repeated ingestion of the poison.

This, of course, had no bearing on the existence of the drug habit. He thought there was a distinction to be made between the existence of the drug habit and the existence of poisoning produced by that habit. A point of interest to him was the suggestion that the cyanosis had occurred as the result of the ingestion of acetanilid. He thought it was commonly held that cyanosis is due to the presence of methemoglobin in the blood. Dr. Herrick and others, however, had failed to find any methemoglobin in the blood. If this were present in small quantities its existence might be difficult to prove. On the other hand, if present in only small quantity it could not account for the marked degree of cyanosis in these cases. He, therefore, thought, that the large degree of cyanosis must be ascribed to the acute dilatation of the heart and failure of circulation characteristic of poisoning by the drug. It had been shown by Singer that blood which has undergone chemical change with production of methemoglobin is not destroyed; that is, it is possible to restore hemoglobin to a corpuscle which has had its change of methemoglobin. The experiments of a German investigator have shown that in those cases in which the blood has undergone chemical change a larger proportion of oxygen will be taken up if the atmosphere is one of pure oxygen. He experimented with mice and found that in an atmosphere of pure oxygen they would withstand a dosage two or three times as large as a fatal dose. He also found that if he increased the pressure of the oxygen they would withstand a still larger dosage of the poison.

Dr. W. M. L. COPLIN had not seen a case of chronic acetanilid poisoning and had had little experience with the acute forms. He referred to researches made under his direction on the influence of the coal-tar products on the protoplasm of the red blood cells. The work was especially in connection with the anilin dyes, acetanilid and antipyrin. Such marked changes in the red blood cells were found that on the cover-glass the blood lacked the color of ordinary blood. A point of diagnostic value mentioned was the appearance of the exudates when present. Nothing was found characteristic of actual nephritis. In concurrent work done with carbolic acid renal changes were very marked. From Dr. Coplin's work on the spleen of animals he regards with some skepticism reported instances of cirrhosis of the liver. One experimenter in a large number of dogs had observed a single case of cirrhosis of the liver. Concerning the micro-chemical reaction of the blood, the research work did not prove satisfactorily that there was any morphologic change in the blood which was at all characteristic. The striking feature was that there was no change in the tingeability of the blood explaining this peculiar hue of the freshly-dried blood.

Dr. JAMES C. WILSON said that if the distinction suggested by Dr. Wood between repeated acute attacks and chronic acetanilid poisoning were to be observed, cases of the latter were indeed very limited. He cited his observation of a case showing the occurrence of a persistent symptom in a patient by whom large doses of acetanilid were taken every day. The patient, a man of about 26, under treatment for a couple of years for syphilis, had taken enormous doses of iodids. He had suffered much from headache, and there was noticed progressive tendency to cyanosis, which his attending physician tried to explain by some idiosyncrasy to the iodids. Coming under Dr. Wilson's care in the hospital, the character of the cyanosis and the cardiac symptoms with splenic enlargement led to the diagnosis of acetanilid poisoning. Investigation

showed that the patient had had migraine prior to the chancre, and had formed the habit of taking different kinds of headache powders obtained from the apothecary. During the treatment for syphilis he had taken "Orangeine" powders, never less than six or eight, sometimes as many as eighteen or twenty. Attempts to withdraw the drug were followed by outbreaks of intense headache. With the substitution of small doses of morphia without the knowledge of the patient all the symptoms disappeared and he left the hospital without having taken either acetanilid or morphia for two or three weeks and without the knowledge that he had had morphia. The point made by Dr. Wilson was that brought out by Dr. Herrick; that in some of these cases the original cause of distress may disappear and be replaced by a similar continuous suffering arising from the use of the drug itself. In Dr. Wilson's case the ultimate withdrawal of the acetanilid was followed by complete cessation of the headache for which the patient had habituated himself to the drug.

Dr. DAVID L. EDSALL said that he had seen one case, whether coincident or otherwise, in which the man had developed chronic mental symptoms and had been placed in an asylum for the insane. He asked about the persistence of mental symptoms. In regard to the relation of the methemoglobin to the symptoms, in one case in which there was profound cyanosis examination of the blood and urine revealed nothing but oxyhemoglobin in the blood and in the urine and no methemoglobin. He said it was certain that the presence of methemoglobin was not a satisfactory explanation of the cyanosis. Reference was made to one authority on chemical analysis of urine who had cast much doubt on the existence of methemoglobinuria and who considered the vast majority of the reported cases due to erroneous observation. Dr. Edsall thought the same might be true of the blood.

Dr. W. E. ROBERTSON said that his experience had been limited to two cases, one an acute case in which the infection occurred from an acetanilid dressing, and in which the symptoms subsided on the withdrawal of the dressing; the other, a chronic case, and in this the blood picture was similar to that presented in the discussion. In the chronic case, notwithstanding the great cyanosis, there was no dyspnea. It resembled very much a marked case of polycythemia, in which the cyanosis is of intense degree.

In connection with Dr. Wood's reference to the cases being regarded as instances of repeated attacks of acute poisoning rather than of chronic poisoning, he cited one observer who had noted on the complete withdrawal of the drug the persistence of the symptoms and also of mental symptoms.

Dr. GRY HINSDALE said that in the early days of the use of acetanilid, when it was known by the name of antifibrin, he thought the drug was used much more freely and injudiciously by physicians than at present. He recalled the case of a young man with epilepsy, in whose treatment the remedy was used for two years, and this patient, on leaving the city for a year, had obtained a considerable amount, to be used continuously. On his return, while there was some cyanosis, no other bad effects were apparent. The effect on the epilepsy was not curative, but probably mitigating. At the present Dr. Hinsdale would hesitate to use the drug in the quantities in which it was formerly employed.

Dr. HERRICK was inclined to regard the criticism of Dr. Wood of the term "chronic" acetanilid poisoning as a just one. He thinks that probably the action in these cases should be looked on as accumulative, and yet he does not believe that it has been definitely decided now permanent the damage done is. It can not be stated, certainly, that the heart muscle was not more or less permanently damaged, nor that the blood-making organs would be restored to their normal function. Neither was there certainly permanent mental effects. He replied to Dr. Edsall that he could not answer his question regarding permanent mental derangement following chronic acetanilid intoxication. Most patients recovered promptly on the withdrawal of the drug. From the records of some of the cases he had observed that the finding of methemoglobin was somewhat doubtful, and felt that the examination for its presence should be very carefully conducted before it was declared to exist.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Treatment of Obesity.

A correspondent desires us to outline a course of treatment for obesity in a patient who has no other symptoms.

In outlining a treatment for obesity, the causes must be carefully looked into. In certain instances there is something wrong with the metabolism, consequently in the treatment overeating, excessive drinking, sedentary life, increased consumption of fats and carbohydrates, must be carefully regulated. Not infrequently a history of gout or diabetes is obtained, or perhaps anemia in some form is present. The age of the patient must also be taken into consideration when a reduction of fat is to be considered. Young individuals can not withstand such great and rapid reductions as those further along in life. In any case, in reducing flesh a gradual reduction should be the rule, and when a patient has lost from ten to fifteen pounds, after being placed on a strict diet, the diet should be made more liberal for a time. We can not recommend the administration of any preparations in a general way without a complete knowledge of the individual case. Thyroid extract is a preparation which is a valuable agent in some cases in the reduction of fat. It may be given in 5-grain doses three or four times a day; its effect on the heart, circulation and nervous system must be carefully watched, as it is very liable to produce an increased nervous condition and to cause subjective symptoms of the heart. About all that can be recommended in this case is placing the patient on a system of diet purported to such reduction of fat. We would recommend that form of diet advised by Banting, Oertel, Elbsstein, Weir Mitchell or Yeo. Von Noorden, in Nothnagel's Handbuch, recommends the following diet list in such cases: At 8 o'clock 80 grams of lean cold meat, 25 grams of bread, one cup of tea, with milk and no sugar. At 10 o'clock one egg. At 12 o'clock one cup of strong broth. At 1 o'clock a small plate of meat soup, 159 grams of lean meat, flesh or fish; 100 grams of potatoes with salad; 100 grams of fresh fruit. At 3 o'clock one cup of black coffee. At 4 o'clock 200 grams of fresh fruit. At 6 o'clock one-quarter liter of milk with tea. At 8 o'clock 125 grams of cold meat or 180 grams of meat, raw and grilled, and eaten with radishes and salads; 30 grams of graham bread, and two to three teaspoonfuls of cooked fruit with sugar.

Management of Epilepsy.

In the management of epilepsy Thomas P. Prout, in *American Medicine*, recommends that the therapeutics be divided into medicinal, hygienic and dietetic. Since no two patients with epilepsy will present exactly the same outline for treatment, it must be necessary, therefore, to individualize. One patient, perhaps, will not be able to take care of certain articles of food which another may relish; one may have a heart lesion or a kidney complication, while another may possess a lymphatic diathesis with a persistent thymus. In those cases commencing late in life the possibility of a specific infection or of some condition capable of producing a sclerotic condition of the arteries must be taken into consideration. The possible existence of tenia, adenoids or cysticercin must also be considered. For the purpose of ameliorating the seizures, Prout recommends the bromids as the most important preparations. Their use in epilepsy, as has been established by experiment, depends on their ability to diminish cortical irritability. The effect of the bromid depends not so much on the amount administered and eliminated by the system as on the amount retained in the system, consequently he advocates, as do other authors, the withholding of the sodium chlorid from the food and substituting for that salt the sodium bromid in the cooking. In such medication, however, it is evident there are great difficulties in regulating the size of the dose, and also there is

greater danger of bromid intoxication, as under this form of medication the patients are more susceptible to the drug. He speaks of the method advocated by Clark as a more practical one. The patient then receives a dosage of sodium bromid at regular intervals, and at the same time the meats and vegetables are either unseasoned or but slightly seasoned with salt. The patient, after the fashion of the English, can easily be taught to eat the butter unsalted.

The dosage of the bromids, which constitutes the general treatment of epilepsy, must be increased until the seizures are under control. When this point is reached the dose should be held at that level for some time, and then gradually reduced. In order to ward off the bad effects of this preparation on the system, the skin must be kept active and the bowels kept freely opened. There is one thing which he speaks of and which must be carefully guarded against, and that is the danger of reaching such a high dose as to produce marked irritating action on the stomach and sebaceous glands. One of the channels for the bromid elimination is the skin, which becomes more or less easily irritated by the elimination, and paralysis of the glandular structure may result with the retention of its secretion. This condition, according to Prout, may be overcome by active physical exercise and by baths. The latter is a very important adjunct to the treatment of epilepsy. The cold pack at 70 degrees and of from three-quarters to an hour in duration, followed by a short cold shower and vigorous rubbing, is recommended. However, the pack must be properly applied, and the shower bath must be short and sufficiently cold to give a distinct shock, and the rubbing afterward must be vigorous.

Exercise must be varied to suit the individual case; it may consist of field games, such as tennis and golf, or croquet, or, perhaps, dancing in moderation, and in winter horseback riding. Epileptics, almost without exception, are given to excesses in diet, and there is a desire, as a rule, for those articles which can not be properly digested. This tendency is still more pronounced in the insane epileptics. The author speaks of the possibility of reducing the seizures in epilepsy fully one-third or one-half by simply regulating the diet. Consequently the diet list should be carefully prepared and placed in the hands of those who have charge of the patient. It should be simple, easily digested, and should exclude all coarse, highly seasoned and rich foods, coarse fruits or fried meats, and coarse or fried vegetables.

At the start, if the case is not a favorable one, milk and eggs should be the chief constituents of diet.

Dandruff.

The following combination is recommended by the *Journal of Medicine and Science* in the treatment of dandruff:

| | | |
|---------------------------|-----|------|
| R. Ammonii chloridii..... | 3i | 4j |
| Tinct. capsici..... | 5iv | 15j |
| Aque q. s..... | 5vi | 180j |

M. Sig.: Apply to the scalp night and morning with vigorous friction.

Bronchial Asthma.

The same periodical recommends the following combination in the treatment of bronchial asthma:

| | | |
|--|-------|------|
| R. Ammonii iodidi..... | 3iss | 6j |
| Extracti grindeliae robustae, fld..... | 3vi | 25j |
| Tinct. lobelie..... | 3iii | 12j |
| Tinct. belladonna..... | 3iiss | 10j |
| Extracti glycyrrhizae, fld..... | 3ii | 60j |
| Syrupi toluani, q. s. ad..... | 3iv | 120j |

M. Sig.: One teaspoonful in water three or four times a day.

Epistaxis.

In severe epistaxis the same periodical recommends that a swab be dipped in Monsell's solution of iron, inserted into the nostril, and so turned as to touch the different portions of the mucous membrane, and a pledget allowed to remain in the nares. If this does not check the bleeding another piece of gauze should be inserted beside the first. They should be allowed to remain until coagulation has taken place; the following day the plug may be removed.

Carrot recommends gelatin as a valuable agent in checking epistaxis. Five parts of gelatin should be dissolved in 95 parts of sterilized normal salt solution, and applied locally by injecting it into the nostril, and then smearing it on cotton or gauze and introducing that into the nares. The solution, when used, should be at about the body temperature. It may be used in the checking of hemorrhage from surface wounds or varicose veins, but is not reliable in hemorrhage from the stomach, because it undergoes digestion; it may be injected when sterilized into the uterus to check uterine hemorrhage. Shurley, in his "Diseases of Nose and Throat," suggests in persistent epistaxis that Veeder's method be employed. This consists in introducing a tampon consisting of a thin rubber bag and filling it with air or water. Another plan is to push well into the nasal passage a fold of glycerin paper or oiled silk in the shape of a glove finger and when it is *in situ*, to fill it with bits of gauze or cotton until the nasal passage is completely packed. A long strip of cheesecloth previously soaked in a solution of hydrogen peroxid can be folded and pushed into the cavity by a probe. Tampons should always be employed in severe cases of epistaxis. The only objection to such treatment is the possible danger of setting up an inflammation with, perhaps, destruction of the mucosa, which, in case of posterior plugs, may lead to disease of the middle ear through the Eustachian tube or to inflammation of the lining membrane of the accessory cavities of the nose.

Medicolegal

Coloring Milk with Annatto.

The Supreme Court of Missouri says, in the case of the City of St. Louis vs. Polinsky, that it is within the common knowledge that the quality of milk depends largely on the nature of the food that cows are fed on; that cows fed on grass, clover or other fresh green food give a quality of milk superior in richness and appearance to that drawn from cows fed on refuse, or winter foods. By adding annatto to the white milk or cream given by winter-fed or poorly-fed cows, a deception is practiced on the milk-consuming public by making this milk of inferior quality assume the rich and golden appearance of superior milk. Such conduct is a fraud and deception on the public and an unfair advantage over honest competitors who refuse to resort to such deception. And the court holds that it is competent for the legislature or municipal assembly to prohibit the use of artificial colorings, such as annatto, calculated to deceive. Indeed, it says that on this point there seems to be much unanimity in the deliverances of the courts of last resort.

Meaning of Word "Body"—Physicians as Witnesses.

The Supreme Court of Illinois says that, in *Elgin, Aurora & Southern Traction Co. vs. Wilson*, a personal injury case brought by the latter party, it being alleged that divers bones of the plaintiff's body had been broken, and the proof showing a fracture of the tibia of the left leg and an injury to the right elbow, it was argued that there was a clear distinction between the body and the limbs of the body, and that consequently there was a variance between the allegations and the proof. But one definition given by Mr. Webster of the word "body" is "the entire physical part of a man." This meaning was properly to be given the word as employed in the allegations. It was not essential that there should be greater particularization as to the bones that were broken.

A physician or a surgeon who has treated a patient, the court further says, may express an opinion as to the physical condition of such patient, based on information gained while so administering professionally for the affliction, or a physician may testify as an expert from information obtained from a physical examination of the person who is the subject of the inquiry. If the opinion of a physician is desired on the case made or claimed to be made by the testimony produced on the hearing, he should not be permitted to state his opinion based on the conclusion arrived at by himself as to the case made

by the evidence as he heard it and gave it weight. The proper course is to state hypothetically the case which the party producing the witness thinks has been proved, and to ask an opinion based on such hypothetical case. The jury, who are the judges as to what has been proven, may then apply the opinion of the expert, if, in their judgment, the state of the case on which it was based has been proven. To permit the expert to base an opinion on the testimony as he construes it and has weighed it would be to permit him to exercise the functions of the jury and, in a sense, decide the whole issues for them.

Constitutionality and Application of Practice Act.

The Constitution of the State of Washington provides that "no act shall ever be revised or amended by mere reference to its title, but the act revised or section amended shall be set forth at full length." In the case of *State vs. Lawson*, a prosecution for practicing medicine without a license, it was contended that there was no law in the state of Washington authorizing the licensing of persons to practice medicine and surgery; that the act of 1890 was entirely superseded by the amendatory act of 1901. The basis of this contention was that the amendatory act of 1901 did not set forth at full length the sections of the original act which were not amended, as it was claimed the Constitution required. But the Supreme Court of Washington says that, whatever support this contention might find in the earlier decisions of the courts of Louisiana and Indiana, it is no longer considered as sound. And it holds that the unamended sections of the act of 1890 and the three sections as amended by the act of 1901 are in full force and effect and constitute the law on the subject under consideration.

The uncontradicted testimony in this case showed that the defendant practiced medicine as defined by the statute. Did he have a license so to do? The testimony tending to show that he had no such license was the following: (1) The testimony of the secretary of the state board of medical examiners to the effect that he never obtained a license from said board; (2) the testimony of the county clerk of King County to the effect that no license or certified copy of a license was of record in his office, and (3) the testimony of the county auditor of King County to the effect that the defendant's name did not appear as a licensed physician in the records of his office. The defendant contended that, notwithstanding all such testimony, he might have been duly licensed in some other county in the state prior to the passage of the act of 1890, and such license not appear in any of said offices. This, the Supreme Court, which affirms a conviction, says, was, no doubt, true, but the statute makes the records of the clerk's office *prima facie* evidence of the existence or non-existence of a license. The defendant conceded this, but said that the statute declared an arbitrary and illogical rule of evidence, and was, therefore, unconstitutional.

The court's answer is: Where a license issued in any county of a state authorizes the prosecution of a business or the practice of a profession in any part of the state, the difficulty of proving that a given person has no license is very great. This fact has induced many of the states to enact laws imposing on the defendant the burden of proving a license in all prosecutions such as this, and these statutes have been declared constitutional. *Wharton's Crim. Ev.* (9th Ed.), Section 342; *Commonwealth vs. Curran*, 119 Mass., 206. If the state can require the defendant to justify under his license in the absence of any proof whatever, it goes without saying that it can likewise declare what character of proof shall constitute *prima facie* evidence.

May Prohibit Placing of Preservatives in Milk.

The Supreme Court of Missouri says that the real question in the case of the City of St. Louis vs. *Schuler* was whether it was competent for the legislature or the municipal assembly of the city to prohibit the preservation of milk by placing a preservative therein. It was contended that the provision in question against the use of any preservative in milk was to be distinguished from those cases sustaining the exclusion of anatto and other coloring substances, for the reason that the

use of a preservative does not tend to deceive or mislead purchasers and consumers. But the court thinks that the ground on which the use of preservatives in milk rests is the right of the legislature, or in this case the municipal assembly, to pass all needful and proper ordinances to secure the purity of milk, and to prevent any tampering with milk by absolutely prohibiting the use of artificial preservatives therein. The argument that a preservative stands on a different basis from mere coloring matter which is liable to deceive is more plausible than sound. It is a matter of common knowledge that milk is a necessary food of the sick and of the infirm, of the old and the young, that through the agency of impure milk the germs of many diseases are disseminated, and, even where there is an absence of any deleterious impurity of the germs of specific diseases, adulterated or diluted milk is not wholesome and nutritious.

Again, it was insisted in this case that, because formaldehyde works such a chemical change in the character of milk that it will not sour, and because it is for this reason classed as a preservative, the municipal assembly could not lawfully prohibit its use in milk. But the court states that evidently it cannot be said that the effect of formaldehyde in milk is so well known not to be deleterious that the courts must take judicial cognizance of that fact. That its action is such that it changes the chemical properties of the milk so that it will not sour was established and conceded on the trial, and it was for this reason that it was insisted that, as it preserved the milk from souring, it was claimed to be highly beneficial. The court can not accept this conclusion.

It must be recognized, the court continues, that it was a legislative function in the passage of the ordinance in question for the preservation of health to insist that milk should have neither adulterants or preservatives placed in it, and to inquire as to the effect thereof. The municipal assembly may have investigated and found this very fact, that, when formaldehyde or boracic acid was placed in milk, it would change its chemical properties and prevent it souring and prevent it going the natural processes of oxidation and decomposition, and that thereby the housewife desiring to have the milk sour for culinary purposes, or the physician administering it as food to children and sick persons would be misled in his calculations as to its effect on his patient. But, in addition to this, the municipal assembly might well have reasoned that, while one preservative used in carefully prepared proportions might not be injurious to the health of consumers, it would be exceedingly dangerous to permit the vendors of milk, with little or no scientific knowledge and less scruples, each to select his own so-called preservative and use it without knowledge as to the quantities which were safe. This would open the door to all sorts of dangerous adulterations and to the use of highly injurious processes, and the discovery of such practices might never be made until incalculable injury had occurred. The only safe course, considering the nature of the business, was to prevent absolutely the placing of such preservatives in milk. In so doing the municipal assembly in no manner destroyed or affected the defendant's right of property.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

January 20.

- 1 Acute Osteomyelitis; A Plea for Early Diagnosis. E. King, Fulda, Minn.
- 2 Medicinal Plants of Angola, with Observations on Their Use by Natives of the Province. F. C. Wellman, Angola, Africa.
- 3 *Etiology, Symptomatology and Treatment of Anal Fissure. H. A. Brav, Philadelphia.
- 4 Diagnosis of Incipient Genitourinary Tuberculosis. G. F. Loydon, Chicago.
- 5 *Peculiar Gestation. W. H. Randle, Philadelphia.
- 6 *Diabetic Purpura. C. H. Lefcovich, Philadelphia.
3. Etiology, Symptomatology and Treatment of Anal Fissure.—The method of operation employed by Brav is division with incision, at the same time trimming the indurated margin of

the wound, and ennetting the base. The bowels should be kept confined for three days, and after this time daily movements are secured by laxatives. The ulcer usually heals in about two weeks.

5. **Ectopic Gestation.** Randle believes that in many fatal cases in which death is said to be due to so-called heart disease and other causes, in reality it is due to internal hemorrhage from ectopic gestation. He says that in cases of doubtful diagnosis a small vaginal incision may be made through the posterior vaginal vault, when the escape of free blood will verify the diagnosis. The treatment is invariably surgical. As little of the anesthetic should be used as possible, and stimulation should be withheld until the bleeding point is secured. When the abdominal incision is made no attention should be paid to the enormous quantity of blood that usually gushes forth, but the surgeon should place his hand directly on the ruptured tube and clamp the bleeding parts. After this, vigorous stimulation may be employed. The blood clots should be taken out rapidly and the abdominal cavity flushed with a large quantity of sterile saline solution. A quantity of this fluid may be allowed to remain in the pelvic cavity. Drainage is rarely necessary; in fact, it is detrimental. In all cases in which a hematocoele has formed, a vaginal incision may be made with the evacuation of the clots which lie in large quantities in the pelvic cavity; but the patient should be prepared for the abdominal operation, should it prove necessary, because of the recurrence of hemorrhage.

6. **Diabetic Purpura.**—Lefcovich reports the coexistence of purpura and alimentary glycosuria in a boy of 3. The patient was nervous and suffered from enuresis and a stomatitis of moderate severity. After two months' treatment, largely dietetic, the boy apparently made a complete recovery. One year later the patient presented the typical aspect of a true diabetes mellitus, but no symptoms of purpura. After nine months' constant attention, the boy remains comfortably healthy while under a judicious diet. Lefcovich emphasizes the importance of urinary examinations in the infant and child in making a diagnosis and in the study of metabolism.

Medical Record, New York.

January 20.

- 7 *Immunization in Tuberculosis. K. von Ruck, Asheville, N. C.
- 8 *Facts Concerning Cancer of the Stomach. C. N. Dowd, New York.
- 9 Digestive Disorders and Abdominal Pain. J. F. Erdmann, New York.
- 10 Distribution of Mosquitoes in the United States. C. S. Ludlow, Washington, D. C.
- 11 *Use of the X-Ray in the Treatment of Certain Diseases of the Skin. F. Wise, New York.
- 12 *Ecarache. A. Bardes, New York.

7. **Immunization in Tuberculosis.**—Von Ruck gives clinical results and observations from administration of his own preparation. Taking cases in the early stages of tuberculosis and phthisis, he shows a recovery in 161 out of 171 patients, or 95.5 per cent. Ten patients left the institution satisfied with the results, or continued the treatment at home. Patients further advanced showed a recovery of two-thirds, or 66.3 per cent., with a 27 per cent. result from those in a critical stage of the disease, a condition which would not be obtainable for the most favorable class of tuberculous patients without immunization.

8. **Cancer of the Stomach.**—Dowd calls attention to the large number of deaths resulting from gastric cancer. The census report for 1900 shows that there were at least 9,000 deaths from cancer of the stomach in the United States during that year; this is 65 per cent. more than from appendicitis, and statistics indicate that it is on the increase. He emphasizes the fact that cancer of the stomach is primarily a surgical disease, and considers the mortality from the operation no greater than that from others that are frequently performed. It is important to make an early diagnosis while there is still a fair prospect of cure. Koehler found that the initial symptoms were loss of appetite and pyrosis; that epigastric discomfort often preceded the vomiting by months, and therefore this symptom, which he considered most important, was not constant. Dowd found it in 73 per cent. of his cases, and it had generally existed about seven months before admission to the hospital. Sometimes it was present after every meal,

at others only at irregular intervals. Pain, though not so characteristic, is also an important symptom. Exploratory operation is valuable in helping to establish the diagnosis. A small incision of one and one-half or two inches between the umbilicus and ensiform cartilage is sufficient for the introduction of the finger.

11. **X-Ray in Certain Skin Diseases.**—Wise summarizes his paper as follows: (1) The x-ray will cure ringworm and favus of the hairy skin more rapidly and reliably than any other method of treatment; the advantages of the method are, that it is painless, harmless when properly used, and thorough, and that it cuts down the expense incurred by the city in the treatment and care of these patients to a very considerable extent. (2) Hypertrichosis should be treated with electrolysis, not with the x-ray. (3) The x-ray gives very satisfactory results in the various forms of cutaneous tuberculosis; in keloid, in keratoses, in infiltrated patches of chronic eczema, lichen planus, pityriasis rubra; in the tubercles, ulcers and tumor masses of mycosis fungoides, psoriasis and sarcoma. (4) X-radiation relieves pruritus, burning, tingling and pain; it decreases the discharge and foul odors of various dermatoses, often causing them to disappear completely. (5) In selected cases, radiotherapy is the ideal agent in the treatment of epithelioma and rodent ulcer.

12. **Ecarache.**—Bardes says that as soon as ecarache begins the patient should be kept quiet, put to bed and placed on a fluid diet, and in other ways treated as one would treat a patient with a high fever. The bowels should be kept open, and a single dose of morphin, he states, may be given to insure rest and comfort. Dry heat or else an ice-bag can be applied to the ear. The former is more acceptable to most patients. Every three hours the ear should be gently irrigated with a hot solution of bichlorid I to 5,000, after which a few drops of a 12 per cent. solution of carbo-glycerin can be instilled. Under no consideration should a person be allowed to suffer pain longer than twenty-four hours. If the pain continues, and the drumhead is inflamed and distended, palliative measures are worse than useless, and any attempt to abort the inflammation by means other than surgical is dangerous, and valuable time is lost in so doing. A bulging drumhead should be treated in the same way as a septic formation in any other place. It should be freely incised, rather than simply punctured or allowed to break.

New York Medical Journal.

January 20.

- 13 Primordial Nature of the Forces Exerted Against the Penetration of Bacteria Beneath the Surface of the Body. J. Wright, New York.
- 14 Maintenance of Asepsis. D. H. Craiz, Boston.
- 15 Some of the Uses of Pelvic Massage. J. T. Johnson, Washington, D. C.
- 16 *Therapeutic and Prognostic Value of Occult Hemorrhage in the Stools. J. P. Steele, Philadelphia.
- 17 The Sharp Curette within the Uterus. B. Robinson, Chicago.
- 18 *Rupture of the Symphysis Pubis; Report of a case and Method of Repair. T. B. Eastman, Indianapolis.
- 19 *Present Status of Surgical Operations on the Insane. L. Brown, New York.
- 20 Migration of Helminths. H. Page, U. S. A.
- 21 Congenital Hernia of the Umbilical Cord. E. W. Meredith, Pittsburg.

16. **Occult Hemorrhage in the Stools.**—The conditions in which the tests for occult blood in the feces will be of prognostic and therapeutic value in the course of gastric ulcer are said by Steele to be as follows: First, to determine the length of the various periods of the medical treatment of ulcer. Second, to detect the tendency to bleeding during the course of gastric ulcer and by appropriate medical and surgical measures to anticipate and prevent serious hemorrhage. Third, to determine when the medical treatment may be considered to have failed and surgical treatment is indicated. Fourth, perhaps the test may prove helpful under certain circumstances in detecting the development of a cancer on the floor of an ulcer.

18. **Rupture of Symphysis Pubis.**—In a case reported by Eastman, the patient was operated on by a modification of the method devised by Farabent for suturing the symphysis after symphysectomy. The operation employed in this particular instance is described as follows:

In order to avoid a possible injury to the vessels and nerves adjacent to the clitoris, a crescent-shaped incision four inches long and following the curve of the pubic arch was made. The subjacent fat was dissected away, and the anterior surface of the bodies of the pelvic bones exposed. The ends of the bones were found separated about an inch and a quarter, while the intervening space was filled with a soft, solid substance which was readily removed with the handle of the scalpel. The posterior surface of the bone was not exposed nor was the space of Retzius opened except as the removal of the intervening substance exposed it to view. The articular surfaces of the bones were well scraped. Two holes in either side were now drilled through the bone from a point on the anterior surface one-half inch from the articular surface and emerging on the posterior surface one-fourth inch from the articular surface. Through these apertures heavy silver wires were introduced, the pairs brought together by strong pressure on the trochanters and the wires twisted to remain. Union was perfect in thirty-six days. Catgut has been used by various operators. In view of the strain, iron wire may be preferable.

19. Operations on the Insane.—The observations recorded by Broun were confined to cases of abdominal and pelvic surgery. Of 51 operations for displaced uteri, associated with a repair of the cervix and perineum where indicated, the mental recovery was hastened with three patients by the correction of the pelvic abnormalities. On two of these patients a curettage and a shortening of the round ligaments by Alexander's operation was done. On a third, the peritoneal cavity was entered through an anterior vaginal incision and through this opening the round ligaments were shortened; the torn perineum was also repaired. The mental condition of these three patients was acute mania, chronic melancholia and primary dementia. Broun thinks that the following facts have been established: 1. If the operation when needed has been properly done and the patient not mutilated by an uncalculated castration, the mental condition is never aggravated by such a procedure. This he states, has been the experience of Manton, who has been operating for over twenty years, also that of Picqué, whose operations have extended over a period of twelve years, as well as his own experience in the entire range of his surgical work among the insane. 2. There exists among the patients confined in the various insane asylums many who are suffering in a quiet, uncomplaining way from pathologic conditions. They have a right to be given relief irrespective of their mental state. 3. Under the stimulus of the improved somatic state resulting from surgical relief some of the patients show greater mental changes under the moral and therapeutic care than was shown before such relief was given. At times this improved mental state continues to one of recovery.

Boston Medical and Surgical Journal.

January 18.

- 22 *Open-Air Treatment of Bone Tuberculosis at the Wellesley Convalescent Home. E. H. Bradford, Boston.
- 23 *Relation Between Human and Bovine Tuberculosis; Effect on Inmates of Public Institutions. T. Smith, Boston.
- 24 *Should the Tuberculosis Inmate in Hospitals be Segregated? O. F. Rogers, Danvers, Mass.
- 25 What Should be the Policy Regarding Tuberculosis in Insane Asylums. O. Copp, Boston.
- 26 What Special Instructions Regarding Tuberculosis Should be Given Institution Nurses and Other Employees? J. H. Nichols, Tewksbury, Mass.
- 27 Importance of Early Diagnosis in Pulmonary Tuberculosis. H. C. Clapp, Boston.
- 28 Treatment of Tuberculosis in Public Institutions. W. Tilston, Long Island Hospital.
- 29 Suppression of Tuberculosis in Dairy Herds. A. Peters.
- 30 Day Sanitarium for Consumptives. Parker Hill, Boston. D. Townsend, Boston.

22. Open-Air Treatment of Bone Tuberculosis.—Bradford cites thirty cases of patients treated successfully at the Wellesley Convalescent Home, showing the condition of these patients ten and twenty years after the cessation of the treatment. He says that the success obtained in these cases should stimulate all efforts in the treatment and control of joint and bone tuberculosis, in which the open-air treatment is by no means the least.

23. Human and Bovine Tuberculosis.—Smith states that in institutions in which children are cared for the source of the milk used should receive careful attention, and that herds belonging to the institution should be free from any traces of tuberculosis. In institutions harboring adults there need be less anxiety on this point, and if all animals of reduced vitality or whose udders are not above suspicion are eliminated, the danger of infection may be regarded as exceedingly small. A careful periodic inspection of dairy herds can not be dispensed with, and such inspection should be made a neces-

sary function of state and local boards of health, or of specially organized bureaus, in order that any advanced cases of tuberculosis may be detected, removed and destroyed. More than this can not be demanded at present in the interest of public health.

24. Segregation of Tuberculous Insane.—Rogers is of the opinion that segregation offers a rational, practicable, and not too expensive remedy for conditions that urgently demand relief. The trustees and superintendent of the Danvers Hospital, impressed by this fact, decided that segregation of the tuberculous is the only available remedy. For three years eight or ten female patients were kept in tents on the lawn during the summer months. They enjoyed the tent life and several made rapid improvement. Encouraged by the result of this experiment, the superintendent recommended that two buildings should be erected of capacity sufficient to accommodate all the tuberculous patients in the hospital. These buildings are now nearly completed. Each building will shelter fifteen patients. They are practically alike, one for women and the other for men. They are about 76 feet long and 21 feet wide. They front the south. Each has a piazza ten feet wide running the whole length of the front of the building. The front is nearly all glass, and there is considerable glass in other portions of the walls. The windows are double, and above each window is a glass transom, and all can be raised or swung. The buildings are heated by steam pipes running beneath the windows on three sides of the wards. Fresh air is taken directly through the walls. A sheet iron arrangement causes the air to flow over the steam pipes before it enters the wards. Each building has two wards, 30 feet by 20 feet, 13 feet high, with a room between them 16 feet by 20 feet, containing a fireplace. There is a bathroom and a dressing-room which can be kept warm at all times. The walls are lathed and plastered and painted with lead and finished with a coat of enamel. The floor is covered with inlaid linoleum of the best quality. There are openings for ventilation in the ceilings and gable ends. The wards are lighted by electric light. There are no window guards.

Lancet-Clinic, Cincinnati, Ohio.

January 26.

- 31 Pathology of Nephrolithiasis. H. J. Whitacre, Cincinnati.
- 32 Pathology of Stone in the Kidney. W. H. Crane, Cincinnati.
- 33 Clinical History of Renal Calculus. E. W. Walker, Cincinnati.
- 34 Treatment of Renal Calculus. J. C. Oliver, Cincinnati.
- 34½ *An Improved Urethrotome. W. E. Washburn, Kewanee, Ill.

34½. An Improved Urethrotome.—The instrument devised by Washburn in the main resembles the usual urethrotome. The distinguishing feature of the instrument is a cutting knife which is guided by a filiform bougie. The knife protrudes from the end instead of from the side, as in other instruments, and is protected so that it only cuts when and where desired. The bougie is first introduced through the stricture or strictures down into the bladder. The knife is then put in position in the instrument by passing the notched end uppermost through the groove until it is enclosed in the end of the instrument. This knife is held in place by a set-screw. The knife and instrument, when ready for use, are threaded and the instrument is passed into the urethra up to the stricture. The urethra is then dilated, and with the thumb-screw on the side of the instrument, the knife is turned out of the end of the instrument down to the stricture. After the stricture has been cut, the knife is withdrawn in the same way, and the dilated instrument is closed. Other strictures, if present, are cut in the same manner. The knife cuts through the center of the stricture both anteriorly and posteriorly, thus lessening the liability of a contraction result. The knife working in front of the instrument is said to make a clean cut instead of a laceration, thereby rendering infection less liable and healing more prompt. Washburn says that the instrument does not cause any irritation of the urethra.

University of Pennsylvania Medical Bulletin, Philadelphia.

December.

- 25 A Schematic Eye. E. T. Reichert, Philadelphia.
- 26 *Tuberculous Peritonitis: A Statistical Review. W. T. Cummings, Philadelphia.
- 27 Cage for Use in Metabolism Experiments on Dogs: New Method for the Preservation of Meat Used in Such Experiments. P. B. Hawke, Philadelphia.

38 Comparative Study of the Systematic Action of Potassium Sulphocyanid. E. Lodholz. Philadelphia.

39 Suggestions for Preventive Medicine in the Country. A. C. Abbott, Philadelphia.

36. Tuberculous Peritonitis.—Cummins reviewed 3,405 autopsy records of four hospitals. Of these 835 cases, or 24.5 per cent., presented some type of tuberculosis. In addition 76 records showed healed tuberculous foci. Tuberculous infection of the peritoneum was found in 92 cases, or in 2.7 per cent. of the total, and in 11 per cent. of the cases of tuberculosis. Males were more frequently affected than females, in the proportion of 2 to 1. The disease was most prevalent between the ages of 20 and 40 years, and these cases represent over 40 per cent. of the total. Cummins says that after the fiftieth year the disease is comparatively rare in the female. Cases are rather more frequent in the negro than in the white race. The most frequent complication is tuberculosis of the lung. Among women genital tuberculosis is responsible for 40 per cent. of the cases. Among men only a small percentage show some lesion of the genitourinary tract. The other serous surfaces are frequently involved, but instances of true serositis number about 5 per cent. of the peritoneal cases. In laparotomies the fibrous form of the disease gives the greatest percentage of cures, and the ulcerous the smallest percentage. The average mortality is about 3 per cent. Not a few cases undergo spontaneous cure, but the ulcerous form is incapable of such restitution.

Therapeutic Gazette, Detroit, Mich.

December 15.

40 *Treatment of Shock, with Special Reference to Strychnin. W. W. Keen, E. E. Montgomery, E. Martin, J. C. Da Costa, W. L. Rodman and E. LaPlace, Philadelphia.

41 Management of Cases of Diabetes Mellitus. J. Tyson, Philadelphia.

42 Treatment of Insanity with Special Reference to Extramural Cases. F. X. Dercum, Philadelphia.

43 *Certain States of Vascular Spasm and Fibrosis. H. A. Hare, Philadelphia.

40. Treatment of Shock.—Keen has practically given up the use of strychnin and has substituted adrenalin for it. Montgomery does not believe strychnin to be the best drug for continued use. He says that after the preliminary dose of strychnin better results can be secured from the administration of some preparation of aseptic ergot. Next to intravenous injection of salt solution he has learned to rely on ergot as the most effective agent in shock. Martin says that the only drug which seems to have a distinct action in desperate cases is adrenalin chlorid. This, to be effective, must be given intravenously in extreme dilution (1 to 20,000 normal salt solution) and allowed to flow slowly into a vein. It is transitory in its effects, however, and the injection may have to be repeated. This may be done for from twelve to twenty-four hours through a cannula left in the vein.

Da Costa favors adrenalin administered intravenously with salt solution, and given very slowly and gradually for a considerable time. Rodman says that in mild cases due to anesthesia and the operation combined nothing more is required than oxygen, a decided lowering of the head, and artificial heat. In cases of moderate severity, in which the temperature is from one to two degrees below normal, but unaccompanied with great cardiac and respiratory involvement, enemata of hot coffee and whisky or enteroclysis of hot saline solution, in addition to position and artificial heat, will be all that is necessary. If in addition to a cold, clammy skin, and temperature 96 F. or below, there is much pain, a hypodermic of 1/6 grain of morphin with 1/150 of atropin is added to the above. Hypodermoclysis may be substituted for or used in conjunction with enteroclysis. If the pulse is short, frequent and jerky, above 130, and of poor volume, intravenous infusion, preferably with adrenalin chlorid, is called for; one-half pint to a pint, frequently given, is better than three or four pints at once. Laplace thinks that strychnin as a cardiac tonic is of the utmost value, but that it fails in its purpose if the circulation be at the time too weak to have it produce a stimulating effect on the brain. It is, however, the best agent for reducing shock to a minimum during an operative procedure.

43. Vascular Spasm and Fibrosis.—Hare emphasizes the following points: In cases of high tension due to fibrosis the nitrites can be of but little value, and the iodids, with rest and

massage, are needful. Cases of very high tension are usually those in which the heart escapes sufficiently to help maintain the tension. As fibrosis in the peripheral vessels increases, the muscles of the larger vessels undergo hypertrophy, as does that of the heart. It is quite as possible for vascular compensatory hypertrophy to rupture as for the cardiac compensatory hypertrophy to do so. This rupture of vascular hypertrophy often gives the heart a rest and permits it to recover from its fatigue, and so life is saved. It is possible, if the peripheral fibrosis is arrested, for the vessels also to regain power and for a general improvement to ensue. The cardiac stimulants are not needed in these cases as much as rest and the skillful use of alteratives and vascular sedatives.

Texas Medical News, Austin.

December.

44 Prayer and Medicine. A. S. Garrett, Springtown, Texas.

45 *New Method for Generating Formaldehyd Gas. E. F. Schoch. 46 Whooping Cough. J. R. Landers, Bernadotte, Ill.

47 Tetanus. W. N. Watt, Austin.

45. New Method for Generating Formaldehyd Gas.—Schoch claims for his method that it has the advantages of not requiring any special form of apparatus, of cheapness and freedom from danger of fire. The following substances are required: Good quicklime in lumps, commercial sulphuric acid, and ordinary 40 per cent. formaldehyd solution. A shallow vessel of earthenware or metal is all the apparatus necessary. Sulphuric acid may be purchased at any drug store for 10 cents a pound, and 40 per cent. formaldehyd solution for from 40 to 50 cents per pound. For every 1,000 cubic feet of space are required one pound of formaldehyd solution, one-half pound of sulphuric acid, and three pounds of quicklime. It has been found that just half of these quantities are enough for 1,000 cubic feet, but to guard against excessive loss by leaks these quantities are recommended. The acid and the formaldehyd are first mixed in an earthenware vessel by pouring the acid into the formaldehyd. Then the lime is placed in the shallow vessel in the center of the room. All openings to the room are carefully closed, the mixture is poured on the quicklime, and the operator leaves the room. The rooms should remain closed for from five to eight hours.

American Journal of Surgery, New York.

December.

48 Plaster of Paris and How to Use It. M. W. Ware, New York.

49 Nerve Blocking to Prevent Amputation Shock: Illustrative Reports of Two High Amputations. H. E. Gessner, New Orleans.

50 *Some of the Fallacies of the Clinical Diagnosis of Gonorrhea. G. F. Lydston, Chicago.

51 Radical Cure of Chronic Nasal Suppuration. A. P. Vols-jawsky, New York.

52 Umbilical Cord Hernia. M. M. Moran, Pinner's Point, Va.

53 *Bartholinitis: Radical Cure by a Simple Measure. A. E. Gallant, New York.

50.—See abstract in THE JOURNAL, Oct. 28, 1905, page 1352.

53. Radical Cure of Bartholinitis.—When occlusion of the duct results with marked distension of the gland, interfering seriously with locomotion and causing such discomfort as to demand immediate relief, Gallant exposes the inner surface of the labium minus and injects into the mucous membrane over the most prominent portion from five to ten minims of a 4 per cent. cocaine solution, or places a pledget of cotton, saturated with a 10 per cent. cocaine solution between the labia until anesthesia is complete. With a pair of plain thumb-forceps, traction is made on the most prominent portion of the gland (taking care not to rupture it), on the inner surface, and with scissors curved on the flat an ellipse of tissue is cut out, including mucous membrane and gland wall, to the extent of one-third of the sac. When the gland is markedly distended and the sac wall thinned, the first cut will usually bring away enough of the sac, but in some instances the sac contracts so closely that it is necessary to cut away, in circular fashion, more of the wall. Occasionally, when the gland has not been markedly distended, bleeding may necessitate the application of catgut ligatures at one or two points. Immediately following the first cut of the scissors, the contents gush out, and the sac contracts, the swelling diminishes to one-third, leaving an irregular circular opening, the base of which is formed by the remnant of the sac wall. This presents an important

point so frequently overlooked when incising for evacuation of abscesses, viz., that with linear incisions the cut edges fall together in close apposition and readily unite, sealing the cavity; whereas elliptical or circular incisions can not assume a position favorable to such coaptation and, therefore, remain open and drain the cavity, and healing must take place from the bottom. When a true abscess is present, the remaining sac wall will be cast off by granulation; but when the condition is that of a retention cyst, the edges of the sac wall and mucous membrane will unite to fill in the gap made by the excised mucous membrane. The only dressing used has been a pad of sterile absorbent gauze, on which has been poured a small quantity of a mixture consisting of balsam of Peru, 5 per cent., and oleum ricinis, 95 per cent., placed between the labia, to be changed and replaced by the patient each time she urinates. No packing or sutures are required, and the patient can at once walk with freedom from suffering, and with little interference with the ordinary gait. The healing is complete within from seven to ten days.

Surgery, Gynecology and Obstetrics, Chicago.

December.

- 54 *Experimental Study of the Local Effects of Peritoneal Drainage. J. L. Yates, Chicago.
- 55 *Treatment of Acute Perforation of the Upper Abdominal Viscera. V. B. Knott, Sioux City, Iowa.
- 56 Surgical and Pathologic Studies on Callosus and Other Gasteric Ulcers. E. Ries, Chicago.
- 57 Study of Ranzula. P. F. Morf, Chicago.
- 58 *Treatment of Retrodisplacements of the Uterus by Operations on the Round, Uterosacral and Uterovesical Ligaments. J. W. Boveé, Washington, D. C.
- 59 *Hyperalgetic Zones in Gunshot Wounds of the Head. E. C. Riebel, Chicago.
- 60 Cartilage Plates from the Scapula of the Calf for Liver and Spleen. M. Stamm, Fremont, Ohio.
- 61 *Antiseptic Action of Bromin, with Descriptions and Illustrations of Cases. H. E. Stroud.
- 62 Injection of Air into the Circulatory System of Animals. E. R. Larned, Chicago.

54. Local Effects of Peritoneal Drainage.—Yates concludes that drainage of the general peritoneal cavity is physically and physiologically impossible. The relative encapsulation of the drain is immediate. The absolute encapsulation occurs early (less than 6 hours in dogs), and can be retarded, but not prevented. The serous external discharge is an exudate due to the irritation of contiguous peritoneum by the drain. There is a similar inward current from the potential into the general cavity. This external exudate diminishes remarkably with the formation of encapsulating adhesions. These adhesions, under approximately normal conditions, form about any foreign body. Their extent and density depend on the degree and the duration of the irritation of this body. Primarily fibrinous, these adhesions become organized in a few days (three days in dogs). If the irritation persists, they become progressively more mature fibrous tissue. After irritation ceases, their disappearance depends principally on a mechanical factor—the ability of the involved surfaces to pull themselves or to be pulled loose. Drains should be the least irritating, and should be gradually and finally removed as soon as possible. Irrigation through drains is futile to prevent adhesions and dangerous. After a drain is inserted, all intra-abdominal movements should be reduced to a minimum. As soon as the drain is removed, intra-abdominal activity should be stimulated to aid in the disappearance of the remaining adhesions. Peritonitis, if not too severe, possibly aids in the rapidity of the encapsulation of the drain. A drain in the presence of infection is deleterious to peritoneal resistance, and should only be introduced to exclude more malign influences. Postural methods, unless destined to facilitate encapsulation, are both futile and harmful, as far as drainage is concerned. Peritoneal drainage must be local, and unless there is something to be gained by rendering an area extraperitoneal, or by making from such an area a safe path of least resistance leading outside the body, there is, aside from hemostasis, no justification for its use.

55.—See abstract in THE JOURNAL, Jan. 14, 1905, page 152.

58. Retrodisplacements of Uterus.—Boveé has histories of 61 patients operated on by the vaginal route, and 68 by the abdominal, or both combined, making a total of 129 cases, with no mortality. This does not include cases in which retrodis-

placement was a feature of the conditions present and in which some other surgical procedure followed. By the vaginal route the round ligaments alone were shortened 21 times, the uterosacral alone 16 times, and both in 24 cases. Various other operations were done at the same sittings; curettage was done in every case; trachelorrhaphy was done 21 times; perineorrhaphy, 23 times; colporrhaphy, anterior or posterior, or both, 14 times, and in 10 cases adhesions to the uterus or appendages, or both, were separated, and ovaries and tubes resected or removed; in one, inguinal herniotomy was done, and in another 2 rectovaginal fistule were closed; in 12, transplantation or lengthening of the anterior vaginal wall, including the uterovesical ligaments, was done. In the 68 patients operated on by the abdominal route, curettage was done 62 times; trachelorrhaphy, 12; perineorrhaphy, 16; colporrhaphy, 10; removal of one or both appendages, 51; herniotomy, 6; appendicectomy, 29. Pelvic adhesions were separated and diastasis of the recti abdominales relieved 6 times. The round ligaments were shortened by the the Baldy method in 60 patients, and the uterosacral in 52. Boveé concludes that the complications, rather than the uterine displacement, furnish the cause for surgical relief. All operations done, having in view the correction of uterine displacements, should be based on the pathologic and anatomic abnormalities of the uterus and adjacent structures. Any operation that changes one dislocation of the uterus into another is illogical, and hence unsurgical. As a rule, the largest proportion of cases of retroversion of the uterus that require special operations are best treated by proper procedures on the round and uterosacral ligaments.

59. Hyperalgetic Zones in Gunshot Wounds of the Head.—Riebel shows that the areas of hyperalgesia observed in gunshot wounds of the head are identical with those observed by Head: (a) By showing segmental arrangement; (b) by not corresponding with peripheral nerves or posterior root areas; (c) tactile and temperature sense are normal; (d) decreasing intensity. Injury of the peripheral sympathetic (intracranial), either at the base of the brain or in the membranes, can not at present be considered causative of the hyperalgesia. Removal of the Gasserian ganglion (intracranial) or evulsion of branches of the ganglion (extracranial) are not associated with hyperalgesia. Injuries of the dura in other than gunshot lesions do not present referred pain. Besides, fractures of the lighter type with recovery (when injury to the sympathetic might be expected) so far have not shown hyperalgetic zones. The frontal lobes were affected in all cases observed by Riebel. Injuries of the frontal lobes not due to gunshot wounds have not been associated with hyperalgesia. The phenomenon has been observed in gunshot wounds only (in traumatic cases).

61. Antiseptic Action of Bromin.—Stroud sets forth the value of bromin as an antiseptic of the highest order. His mode of use is as follows: Bromin 2 drams, bromid of potash 2 drams, and one pint of water are mixed and kept in glass-stoppered bottles. The part to be treated is cleaned as well as possible and wrapped in a single thickness of plain gauze, and over this is applied a thick layer of absorbent cotton. Into a glass jar he puts from 6 to 20 gauze sponges of ordinary size, and pours over these as much bromin solution as they will take up, squeezing out the excess. The glass should be very closely covered, as the fumes of the bromin are very irritating. With a pair of forceps he quickly lays these pledgets on the part, and instantly covers with a thick layer of cotton, and also instantly winds the whole part up in oiled silk, and bandages it very loosely. The result is that the fumes of the bromin, but not the solution, are brought in direct and constant contact with the diseased part. This dressing may be renewed in from 6 to 24 hours. In very severe cases of infection Stroud injects a few drops of the solution, but ordinarily reduces it 1 to 10 with water, and uses this solution to syringe pus cavities and gangrenous patches.

Journal Missouri State Medical Association, St. Louis.

December.

- 63 Case of Unusually Large Abdominal Aneurism. H. Godlee, St. Louis.
- 64 Neurasthenia: Its Complications and Treatment. J. Panton, Kansas City, Mo.

Journal of Kansas Medical Society, Lawrence.

December.

- 65 Esophageal Stricture. D. W. Basham, Wichita.
- 66 Therapeutic Action of Chemic Salts. B. D. Eastman, Topeka.
- 67 Hydrocephalus. G. W. Coffey, Concordia.
- 68 Puerperal Eclampsia. H. L. Clarke, LaCygne.

American Journal of Obstetrics, New York.

January.

- 69 *Metrorrhagia Myopathica. B. M. Anspach, Philadelphia.
- 70 *Complications Arising in Ovarian Tumors with Special Reference to Malignancy. C. C. Norris, Philadelphia.
- 71 Injuries to the Child Inflicted at Birth. J. C. Hoag, Chicago.
- 72 *Pregnancy Associated with Diabetes. M. A. Tate, Cincinnati.
- 73 Myomectomy. W. P. Manton, Detroit.
- 74 Aseptic Midwifery. A. F. Van Horn, Plainfield, N. J.
- 75 Physiology of Temperature with Special Reference to that of the Puerperium. F. A. Rhodes, Pittsburg, Pa.

69. **Metrorrhagia Myopathica.**—According to Anspach, metrorrhagia myopathica stands for a distinct class of cases, which have heretofore been variously and incorrectly grouped under apoplexia uteri, endometritis senilis and preclimacteric bleeding. Metrorrhagia myopathica is a symptom immediately dependent on an anatomic or a physiologic lesion of the uterine muscle. No anatomic lesion has as yet been demonstrated, but it will probably be found in the elastic tissue constituents of the vessel walls and the subserous and supravascular layers. The physiologic lesion is most likely an insufficient contractile power of the uterus. It is possible that the condition is purely functional and that there is no anatomic change which can be recognized. In cases of metrorrhagia myopathica the uterus is enlarged and softened; the os is patulous. Metrorrhagia myopathica does not occur in nulliparous women and, therefore, it must have some connection with the child-bearing process. Anspach claims that the diagnosis of metrorrhagia myopathica is only justified when all other possible causes for uterine hemorrhage have been excluded. This can not be too strongly urged, especially in reference to carcinoma. The terms apoplexia uteri, senile endometritis, and preclimacteric bleeding as applied to these cases are incorrect and unscientific. While curettement, atmocautic, etc., has little effect in cases of metrorrhagia myopathica, palliative measures should always be tried before adopting hysterectomy. Obliteration of the endometrial cavity by means of destructive atmocautic is the alternative of hysterectomy in these cases. Anspach says that it is harder to perform correctly and more dangerous than hysterectomy, which is the operation of choice.

70. **Malignancy of Ovarian Tumors.**—Norris discusses the complications occurring in 63 cases of ovarian tumors. Simple retention cysts, even when of moderate size, are not included in this list. As regards malignancy, he concludes as follows: One in from four to six cases of tumor of the ovaries is malignant, and that this proportion is sufficient to warrant the treatment of all cases of ovarian tumors as malignant until proved otherwise. The operative mortality in cases of malignant disease of the ovaries should not be above 10 or 12 per cent. The number of cures at the end of five years will be relatively small. Carcinoma is by far the most frequent and most dangerous of the malignant diseases of the ovaries, and the recurrence will be largely due to this condition. Every patient with ovarian tumor should be operated on at once, unless there is some strong contraindication. In the so-called "border-line cases" the patients should be operated on because the case may present all the clinical evidences of malignancy, and on operation may prove benign, or the gross specimen may even, together with the clinical symptoms, appear malignant, and on histologic examination prove benign; this is especially true of the adenopapilloma, which frequently, grossly and clinically, closely resemble adenocarcinomatous papilloma. An exploratory laparotomy and the removal of ascitic fluid will make many patients more comfortable, and should certainly be performed when there is any doubt whatever as to the absolute diagnosis of malignancy. All ovarian tumors should be subjected to a rigid microscopic examination, and in cases in which there is any doubt as to the character of the tumor a large number of sections should be taken; and this routine probably, in part, accounts for the high percentage of malignancy occurring in the series of ovarian tumors reported. Norris claims that parovarian cysts

are far less dangerous than true ovarian cysts. In this series of 19 consecutive cases of parovarian cysts there were no complications and no malignant degeneration. Torsion, next to malignancy, he states, is the most frequent and dangerous complication occurring in ovarian tumors, and it occurs in a mild form more often than is generally supposed. In the 63 cases which have been reported, 33.33 per cent. of the patients would surely have died within a short time without operation. The operative mortality for all ovarian cysts should be under 8 or 10 per cent. In the above series it was 3.17 per cent. The operative mortality for benign cyst will be much less. In Norris' series it was less than 2 per cent. The operative mortality for malignant tumors of the ovary should certainly be under 10 or 15 per cent., and early diagnosis and immediate operation on all new growths of the ovary will greatly reduce this proportion.

72.—See abstract in THE JOURNAL, Sept. 30, 1905, page 1021.

Southern Medicine and Surgery, Chattanooga, Tenn.

December.

- 76 Use and Abuse of the Rest Treatment. F. P. Norbury, Jacksonville, Ill.
- 77 Intestinal (External) and Internal (or Cellular) Antisepsis. W. C. Abbott, Chicago.
- 78 Practical Points in X-Ray Therapy. A. L. Gray, Richmond, Va.
- 79 Case of Tubercular Nephritis—with Nephrectomy and Subsequent Incontinence. J. A. Hofheimer, New York.

Denver Medical Times.

December.

- 80 Treatment of Pneumonia. J. T. Melvin, Saguache, Colo.
- 81 Id. E. P. Hershey, Denver.
- 82 Id. S. G. Kahn, Leadville, Colo.
- 83 Id. G. N. Macomber, Denver.
- 84 Id. C. A. Ferris, Georgetown.
- 85 Id. A. Mann, Denver.
- 86 Id. S. Simon, Denver.
- 87 Two Cases of Rocky Mountain Spotted Fever. K. H. Kellogg, Stevensville, Mont.

Cleveland Medical Journal.

December.

- 88 Intestinal Obstruction. G. A. Armstrong, Montreal, Can.
- 89 Right to Practice Medicine. H. P. Sheffield, Cleveland.
- 90 Sphere of Sanatoriums and Dispensaries in the Anti-Tuberculosis Struggle. M. M. Corrois-Suffit, and Ch. Lauby, Paris.

Journal of New Mexico Medical Association, Albuquerque.

December.

- 91 Causes and Treatment of Appendicitis. C. F. Beeson, Roswell.
- 92 One Hundred Cataract Operations Performed in New Mexico and Southern Colorado. L. Hernandez.
- 93 Nephritis. S. S. Swope, Deming.

The Postgraduate, New York.

December.

- 94 Panhysterokelpectomy. R. Waldo, New York.
- 95 Device for Collecting Infants Urine for Examination. H. D. Chapin.
- 96 New Neeble Holder. G. M. Edebohis, New York.
- 97 Lobar Pneumonia in a Child Mistakenly Supposed to be Appendicitis. J. S. Evans, New York.
- 98 Cesarean Section for Severe Puerperal Eclampsia on a Child Twelve Years and Eight Months Old, with Contracted Pelvis. H. J. Boldt, New York.
- 99 Differential Diagnosis Between Sporadic Cretinism, Rachitis and Achondroplasia. H. P. Sheffield, New York.
- 100 Importance of Examination Through the Rectum in Children. G. R. Fisek, New York.
- 101 Roentgen Ray in Primary Carcinoma of the Breast. A. Judd, New York.

Columbus Medical Journal.

December.

- 102 Treatment of Valvular Diseases of the Heart. G. M. Waters, Columbus.
- 103 Complications of Acute Appendicitis. R. E. Skeel, Cleveland.
- 104 Retrospective Medicine and Surgery. H. B. Gibbon, Tiffin, Ohio.

Journal of Nervous and Mental Diseases, New York.

December.

- 105 Diet in Epilepsy. A. J. Rosanoff, New York.
- 106 Epidemic Multiple Neuritis of Obscure Origin. M. A. Bliss, St. Louis.
- 107 Study of Dementia Praecox. D. O. Hecht, Chicago. (Continued.)

Colorado Medicine, Denver.

December.

- 108 Radical Mastoid Operation for the Cure of Chronic Otorrhea. J. M. Foster, Denver.
- 109 Ear Sequela of Adenoids. R. G. Davenport, Trinidad.
- 110 Case of Bronchectasis. O. M. Gilbert, Boulder.
- 111 Colorado Medical Law in Operation. W. F. Church, Greeley.

Medical Sentinel, Portland, Ore.

December.

- 112 Surgical Treatment of Nasal Obstructions. A. Blitt, Boise, Idaho.

- 113 Gastric Ulcer; Gastric Cancer; Obstruction of Pylorus. E. F. Tucker, Portland, Ore.
 114 Treatment of Pneumonia—Based on 203 Consecutive Cases. E. F. Conyngham, Phillipsburg, Mont.
 115 Reciprocity. J. W. Gue, Caldwell, Idaho.

California Medical and Surgical Reporter, Los Angeles.
December.

- 116 Etiology of Chronic Interstitial Nephritis. J. L. Hagadorn, Los Angeles.
 117 Pathology and Urinalysis of Chronic Interstitial Nephritis. R. Smith, Los Angeles.
 118 Symptomatology and Diagnosis of Chronic Interstitial Nephritis. J. H. Utley, Los Angeles.
 119 Ingestion of Fluids in Chronic Interstitial Nephritis. J. A. Collier, Los Angeles.
 120 Nervous Manifestations of Chronic Interstitial Nephritis. H. G. Brainerd, Los Angeles.
 121 Treatment of Chronic Interstitial Nephritis. E. Sweet, Los Angeles.

Journal of Mississippi State Medical Association, Vicksburg.
December.

- 122 Value of Organization. F. L. Wilburn, Kilmichael.
 123 Abortion. L. E. Stennis, McComb.
 124 Acute Suppurative Arthritis in Infants. F. C. Spalding, Gunnison.
 125 Adenoids. E. T. Wilkinson, Boyle.

Albany Medical Annals.

December.

- 126 Sequence of the Pathologic Changes in Appendicitis. E. MacD. Stanton, Albany.
 127 Primary Carcinoma of the Vermiform Appendix. L. K. Talmont, Albany.
 128 Retention Cyst and Diverticulum of the Vermiform Appendix. E. Corning, Albany.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

January 6.

- 1 Medical Aspects of Carcinoma of the Breast. W. Osler.
 2 Three Cases of Arterial Disease. T. C. Allbutt.
 3 Lecture on Action and Uses of Digitalis in Cardiac Failure. J. M. Bruce.
 4 Lepra Ophthalmica. K. Grossmann.
 5 Investigation of the Mechanism of Condylytomy for the Cure of Genu Valgum (Reeves' Operation). W. C. Stevenson.
 6 Influence of Acid on Guinea-Worm Larvae Encysted in Cysts. R. T. Lelper.

5. **Mechanism of Condylytomy.**—By means of taking a series of skiagrams in a case of knock-knee requiring operation (Reeves' operation) on both knees, Stevenson found that the alterations brought about for the operation are as follows: 1. The inferior epiphysis of the femur retains its relation to the resected portion of the diaphysis, and the two together may be described as the lower fragment in a complete fracture. 2. The lower fragment is dislocated inward, causing the diaphysis to project outward beyond the external condyle. 3. The lower fragment is also rotated upward and inward round an antero-posterior axis passing through the epiphyseal line in the neighborhood of the intercondylic notch. This displacement is more clearly understood if one considers the direction of the forces applied in straightening the limb. The above rotation or tilting up of the lower fragment has the following consequences: (a) The separation of the epiphysis from the diaphysis externally; (b) the impaction of the compact tissue of the lower end of the upper fragment into the cancellous tissue of the resected portion of the diaphysis in the lower fragment (c) the assumption of a more vertical position of the internal portion of the epiphyseal line. 4. The relations of the tibia to the condyles of the femur are not materially altered. 5. The relation of the epiphyseal line. 4. The relations of the tibia to the latter is not fractured through, although the osteotome penetrates the inferior epiphysis of the femur near the intercondylic notch.

The Lancet, London.

January 6.

- 7 Therapeutic Value of the Treatment of Consumption on Sanatorium Lines. R. D. Powell.
 8 Sanatorium Treatment of Pulmonary Tuberculosis. W. H. Broadbent.
 9 Objects and Limitations of Sanatoriums for Consumptives. C. T. Williams.
 10 Therapeutic Value of Sanatorium Treatment in Pulmonary Tuberculosis. J. K. Fowler.
 11 Sanatorium Treatment of Pulmonary Tuberculosis. F. J. Wethered.
 12 Economic Value of Sanatoriums. A. Latham.
 13 Sanatoriums for Consumptives. F. R. Walters.

- 14 A Medley of Surgery. E. E. Goldmann.
 15 Case of Ochronosis. F. M. Pope.
 16 Case of Operation on the Vestibule for the Relief of Vertigo. R. Lake.

7-12. **Sanatorium Treatment of Consumption.**—Powell has no doubt of the therapeutic value of the treatment of consumption on sanatorium lines which need not necessarily be carried out in sanatoriums. He says that the employment of sanatoriums in the treatment of phthisis is essential in the great majority of cases for the reason that few people, even among the well-to-do, can command those conditions of locality, facilities, space, help and medical supervision which are the important elements of the treatment. He is convinced that there is an unfortunate and exaggerated belief in the person to person infectiousness of phthisis which has grown under the advocacy of sanitarian and antituberculosis societies.

Broadbent believes in sanatorium treatment. He says that sanatoriums serve two distinct purposes—the arrest of the disease in early cases and the prevention of its spread by advanced cases.

According to Williams, sanatoriums are intended for cases of consumption of recent origin, with limited lesions and with little or no fever. They are not places where severe cases ought to be segregated. Hospitals should be provided for such cases, as is done in Sweden and Denmark. For the treatment of consumption three institutions are required: 1. A consumption hospital to deal with acute and advanced cases; 2. a sanatorium for patients with incipient and limited lesions, and who are for the most part able to take exercise, and, 3. a settlement or colony for patients with arrested consumption where they can be employed on work adapted to their strength and capabilities.

Fowler says that experience has demonstrated the therapeutic value of sanatorium treatment, and that the results obtained may be equally successful with well-to-do patients and with the working classes.

Wethered also is convinced of the therapeutic value of sanatorium treatment, provided that certain conditions have been fulfilled. In the absence of these the results are not so good. The chief of these conditions are three in number: 1. If the disease is in the incipient stage and not acute when the patient first comes under treatment; 2. if the patient remains under active treatment for a sufficiently long period, which, in most cases, should be at least six months; and, 3. if a healthy outdoor life can be followed subsequently. Although sanatorium treatment of pulmonary tuberculosis is the best that has been introduced, it is by no means a specific, and only a certain proportion of the patients show partial or complete recovery. Further, the more independent the patient as regards the necessity of earning a living the better is the result likely to be.

Latham thinks that sanatoriums are essential to the treatment of tuberculosis and that, if properly used as an important part of a co-ordinated system, they are invaluable to a campaign directed toward the eradication of tuberculosis.

16. **Operation for Vertigo.**—Lake's patient, a woman, had been deaf in both ears for some time. Both ears had been operated on several times for the cure of suppurative otitis with an eventually successful result on the right side. For four years she suffered very severely with bilateral oral vertigo. The patient was operated on in the following manner: After exposing the bony semicircular canal its upper surface was cut away with the electric burr until the membranous canal was opened. This canal was then followed up anteriorly and posteriorly to the entrance into the vestibule. Then, by means of a small chisel, these two openings were connected by cutting away the intervening bone. Having once obtained a wide entry into the vestibule the whole of its upper surface, or the vestibular roof, was rapidly removed in such a way as to expose the entrance to the posterior ampullary dilatation. All the exposed parts of the vestibule and ampullae were carefully curetted with a fine curette. Thorough drainage was afforded to the small bone-locked cavity by removing the footplate of the stapes. This completed the operation, the facial nerve, sheathed in bone, lying between the openings into the vestibule. At the end of three weeks the patient was able to

walk fairly straight, to go up and down stairs, and to perform any actions she chose without any inconvenience.

Annales des Mal. des Org. Gén.-Urin., Paris.

Last indexed page XLV, page 1990.

- 17 (XXIII, No. 20.) Evolution de l'hypertrophie de la prostate. B. Motz and Perenmann.
- 18 (No. 21.) La synorchidie artificielle. Maclaure.
- 19 Thérapeutique des hématuries chez les prostatiques. M. Deschamps.
- 20 My Second Case of Horseshoe Kidney.—Rein en fer de cheval. Brucher.
- 21 (No. 22.) Contribution à la pathologie de la masturbation. C. Féré.
- 22 Du rétrécissement blennorrhagique de la portion membraneuse de l'urètre. P. Ileresco and D. Daniolopolu.
- 23 Appareil pour lavages uréthro-vésicaux thermo-laveur. Esgrubant.
- 24 New Style of Permanent Sound.—Sonde à demeure de Maérot modifiée. P. Lebreton.
- 25 Hématuries des néphrites. Albarra.

18. Grafting or Uniting the Testicles.—The indications for this operation are multiple, according to Maclaure. In case of ectopic testicle, synorchidism fastens the testicle in its place and insures better conditions for nourishment. It renders the same service in varicocele and banishes the pain. In case of resection of the vas deferens, intertesticular anastomosis or synorchidism re-establishes an outlet for the sperma by way of the intact organ. The operation is contraindicated after epididymectomy for a progressing bacillary affection, but may be useful after the lesions have long healed. In case of obstruction to the outflow of sperma from a gonorrhoeal nodule in the tail of the epididymis, synorchidism might prove useful to supplement the implantation of the vas deferens in the head of the epididymis or in the testicle. This aids in re-establishing an outlet for the sperma, and proved successful in a personal case, the details of which are related. Maclaure has also been successful with the synorchidism in a case of multiple and recurring cysts in the epididymis. All these various methods of anastomosis and grafting may prove useful in the delicate and complex treatment of sterility in males. He has had considerable experimental and clinical experience with the various operations. The preferred method is to freshen the inner surfaces of the testicles with two small crescent-shaped raw surfaces on each and to suture the lozenge-shaped wounds in each testicle to the corresponding wound in its mate. The tunica vaginalis is then sutured around them in such a way as to have but a single tunica for the two. This is his typical operation. The description is illustrated. The ultimate results in his cases have been eminently satisfactory.

Bulletin de l'Acad. de Médecine, Paris.

- 26 (Year XLIX, No. 42.) *Transmission des maladies contagieuses dans les écoles municipales par le passage des livres des élèves d'une année à l'autre. A. Josias.
- 27 (No. 43, December 26.) Névroses de l'enfance et problèmes d'éducation. M. de Fleury.
- 28 *Sur la régénération de l'air confiné vicié par la respiration. N. Gréhan.
- 29 *Action des iodures sur la circulation. Pouchet.
- 30 *Hygiène de l'enfance (of childhood).

26. Disinfection of Books.—Josias discusses the danger of transmission of infectious diseases by the school books used by successive classes. He also reviews the various methods of disinfection that have been proposed, concluding that all technics need improving. For a small number of books he recommends the Miquel technic. The disinfectant used is a combination of two parts of formic aldehyd to one part of calcium chlorid. A strip of cloth is wound on a roller and placed in a vessel containing the disinfectant. The cloth is then wound from the first on a second roller, every part of the cloth being thoroughly impregnated with the fluid. The cloth is then stretched horizontally in the box in which the disinfection is to be done, the cloth having been fitted to the size of the box beforehand. A box of one-half or three-fourths of a cubic meter is the usual size. In twenty-four hours all the articles in the air-tight box are thoroughly sterilized by the fumes of the disinfectant evaporating from the cloth. This technic will readily sterilize books placed on a grating above, with the pages flaring, while the books are not injured in the least. The fumes must have access to every leaf.

28. Potash for Regeneration of Vitiated Air.—Gréhan states that experiments with a dog breathing into a bag showed that

the air exhaled was deprived of the carbon dioxide by passing the exhaled air through a tank containing 450 gm. of pure, dry potash. The bag into which the animal breathed contained about 300 liters of air. At the end of twelve hours not a trace of carbon dioxide could be detected in the air. The potash was arranged in small pieces on wire netting-trays to insure as large a surface for absorption as possible. The tank grew hot during the experiences, but the potash finally became saturated and ceased to absorb the gas further. When the potash in the tank was dissolved with boiling water later about 71 liters of carbonic acid were derived from the alkaline fluid. Gréhan used in his experiments the Gugliemini-Dräger compressed oxygen and potash apparatus, devised for chemical anesthetics.

29. Action of Iodids on the Circulation.—Pouchet's historical sketch of this subject is supplemented by the conclusions of much personal experimentation and clinical research. He remarks in regard to iodized albuminoids, such as iodized peptone, that they spoil readily and that their use should be under stricter surveillance than at present. Their action on the vascular system declines rapidly in intensity as the preparations grow older, but not their poisonous properties. Their effect on the nutrition and on the nervous system has been injurious in many instances, but the results have generally been ascribed to the affection for which they were being taken. Iodin and the iodids, on one hand, and the extract of the fresh thyroid gland and the iodized albuminoids, on the other hand, have an opposite action on the heart and the extracardiac nervous apparatus. The former induce hypertension, the latter hypotension, in the medicinal dosage. In toxic doses both induce hypotension by their depressing action on the myocardium and by paralysis of the nervous system. The iodids can not be considered heart drugs, in the proper sense of the word, their action on the circulation, in therapeutic dosage, being secondary and subordinate to their action on the lymphatic system and on the blood, as Pouchet relates in detail.

30. Hygiene of Childhood.—More than 154 pages are devoted to the various communications and reports presented to the Académie during the year bearing on the physical protection and hygiene of infants and children. They form an imposing list and testify to immense activity in this line in France on the part of medical men, municipal and state authorities, charitable organizations and private and corporate philanthropy.

Presse Médicale, Paris.

- 31 (No. 101.) La graphologie en médecine. R. Romme.
- 32 Les troubles de l'élimination chlorurée urinaire facteurs d'obésité. H. Labbé et L. Furet.
- 33 *L'index endémique du paludisme. H. Gros.
- 34 *Traitement des névralgies rebelles par les injections profondes d'alcool. Ostwalt.
- 35 (No. 102.) *Chewing Gum in Treatment of Hyperchlorhydria.—Les masticateurs comme traitement de l'hyperchlorhydrie stomacale. L. Meunier.
- 36 Technic of Examining the Apex.—Examen du sommet du poulmon. M. Letulle.

33. Endemic Index of Malaria.—In the experience of Gros in Algeria, no young children showed any evidence of malaria, while it was frequent among older children. This is because the natives live among the hills, and the young children are not exposed to malaria. When the children are old enough to be sent to tend the flocks in the pasture lands along the rivers they become infected. Examination of the younger children in this region—according to Koch's formula for the endemic index—would indicate that there was no malaria in the country.

34. Deep Injections of Alcohol in Neuralgia.—Ostwalt states that he has made 250 deep injections of alcohol in cases of the douloureux or facial neuralgia, and never has had the slightest mishap or unpleasant by-effect. The pain was arrested at once. The effect is like a transient Gasserectomy, as for the time being the functions of the Gasserian ganglion are suspended. In at least 90 per cent. of the cases the neuralgia was cured by the procedure. In about a third of the patients recurrence was observed after four or five months, but one or two more injections definitely banished the pain. He injects 1 or 1.5 c.c. of 80 per cent. alcohol, to which .01 gm. of cocaine or stovain has been added, making the injection along the

trunk of each of the branches affected at the point where they emerge from the bone. He prefers a bayonet-shaped needle and has found these deep injections of alcohol effectual in case of neuralgia elsewhere in the body, in sciatica, etc. He has also cured cases of rebellious facial hemispasm by injecting, a drop at a time, 70 per cent. alcohol along the trunk of the facial nerve, according to Schlösser's technic.

35. Chewing Gum in Treatment of Hyperchlorhydria.—Meunier has been traveling in this country and he informs his countrymen that one in every four American women is chewing gum constantly, and one out of every two men is chewing tobacco or gum. This constant chewing, he was told, is to aid digestion, and he has noticed that the persons chewing presented evidences of hyperchlorhydria. This affection is common among Americans, he adds, as they eat quantities of meat, drink a great deal, and are so devoted to business that they have little time for mastication of their food. On his return home Meunier began to study whether this chewing gum custom was a mere fad or whether it was really beneficial. In hyperchlorhydria the digestion of starch in the stomach is checked by the presence of an excess of hydrochloric acid, and, on the other hand, the presence of the undigested starchy matters induces excessive secretion of the hydrochloric acid. In both of these phases the indications are to help the digestion of the ingested starch, and this is what chewing gum accomplishes. If a person chews gum for an hour and ejects the accumulated saliva into a graduated recipient, from 100 to 150 c.c. of saliva will be found in the vessel. In chewing 100 gm. of bread only from 15 to 20 c.c. of saliva is secreted and swallowed with the bread. Experiments with the Ewald test breakfast confirmed his theoretical reasoning and showed that chewing gum or some similar substance after a meal has a marked influence on the digestion of starch, promoting it by the large supplementary amounts of saliva swallowed, thus eliminating the second phase of hyperchlorhydria. He now orders chewing gum for all his patients of this class.

Semaine Médicale, Paris.

37 (XXV, No. 52.) *Le traitement opératoire des sinusites frontales chroniques. J. Guisez (Paris).

37. Chronic Frontal Sinusitis.—The principle which Guisez has adopted in case of chronic frontal sinusitis is that the ethmoidal sinus is always involved in the process. This necessitates thorough evacuation of its contents. He accomplishes this by turning back a flap, made by an incision in the upper third of the eyebrow, extended .5 cm. below the inner angle of the orbit. The flap thus made can be replaced without leaving a trace, while it allows ample access to the sinus. The frontal sinus is trephined. The results have been very satisfactory in 18 cases in which he has operated by this technic. The only drawback is that the nasal fossae become enlarged by it. He overcomes this by injection of paraffin afterward. The skin wound heals in a week or two, but the intranasal healing is a slower process, requiring treatment for a time. Cure is not complete until all traces of exudation, scabs and crusts have vanished.

Archiv f. klinische Chirurgie, Berlin.

Last indexed XLV, page 128.

- 38 (LXXVII, No. 3.) Test time to operate in Appendicitis.—Über den günstigsten Zeitpunkt des oper. Einschreitens bei der Wurmfortsatzentzündung. W. Körte.
- 39 Gefäßverletzungen und traumatische Aneurismen im rüssisch-japanischen Kriege. L. Borchardt.
- 40 Einige weitere anatomische Präparate von Fracturen des Os naviculare der Handwurzel nebst Bemerkungen und Experimenten über die Entstehung dieser Fracturen. R. Wolff.
- 41 Über eine eigenthümliche Form chronischer Dickdarm-Stenose an der Flexura coli sinistra. E. Payr.
- 42 *Über maligne Gesichtsfurunkel und deren Behandlung (furuncles on face). F. J. Rosenbach.
- 43 Amount of Discharge After Fracture of Patella.—Über die Grösse der Unfallsfolgen bei der blutigen und unblutigen Behandlung der einfachen subcutanen Querverbrüche der Kniekehle. C. Thiem.
- 44 Intraresulata blutiger und unblutiger Behandlung von Patellafracturen. F. Oehlecker.
- 45 Über Pharynx-Plastik. Hofferle.
- 46 *Über Peru-Balsam als Mittel zur Wund-Behandlung. H. Schlösser.
- 47 Cause of Necrosis of Cancer Tissue.—Ursache der Nekrose im Krebsgewebe. C. Ritter.
- 48 Fibrolipom des Magens, complétiert durch Tetanie (fibrolipoma of stomach). H. Fischer.

49 *Operative Beeinflussung des Epileptiker-Gehirns (brain). P. Friedrich.

50 Cholesteatom der hinteren Schädelgrube (in posterior cranial fossa). M. Borchardt.

42. Treatment of Malignant Furuncle on the Face. Rosenbach relates the particulars of 3 cases in which a furuncle on the face had developed into a malignant phlegmon with impending pyemia and sepsis. The *Staphylococcus aureus* was found in pure cultures, but it must have been exceptionally virulent. He is positive that this enhanced virulence is the result of the anatomic conditions of the parts. The muscles of the face are continually forcing and pumping material from the furuncle into the adjoining tissues, causing the spreading of the inflammation and suppuration in lines radiating from the original focus. He was able to trace the development of these cords of suppuration radiating from the furuncle, and interfered by making an incision along each of these radiating cords, as well as in the furuncle itself. The result was the gradual healing of the lesion. One of the 13 illustrations shows a young man with eight of these incisions. The furuncle in all Rosenbach's cases was on the upper lip. One of the incisions encircled the base of the nose, three were on the chin and the rest were on the cheeks near the focus. The incisions allowed the evacuation of pus and necrotic tissue and cocci, or at least of toxic fluids abounding in cocci, and also permitted local treatment with iodoform. The incisions and local treatment seemed to transform the negative into positive chemotaxis. One of his patients presented metastases in the ear, ankle and parotid gland.

46. Peruvian Balsam in Treatment of Wounds.—Schlösser has treated more than 100 cases of wounds with Peruvian balsam and his experience has convinced him that the balsam has certain properties which surpass those of any other substance at our disposal for the treatment of wounds, especially in crushed and soiled tissues. Severe inflammation never develops in any wound treated with the balsam in the first twenty-four hours. The balsam is poured into the wound and every crevice filled. It attracts the leucocytes to the spot and has a kind of mummifying effect on the dead tissues, while it mechanically checks the development of micro-organisms.

49. Operative Treatment of Epileptics.—Friedrich tabulates the particulars of 11 cases of epilepsy of supposed traumatic origin in which an operation was undertaken. Among the lessons learned from this experience is that operative intervention may prove useful when the symptoms of the aura and the objective findings suggest traumatic conditions, even although the beginning of the seizure may not correspond with the point of the supposed trauma according to the accepted topography of the cortex. During the interval also careful search should be made for symptoms suggesting organic trouble, especially headache at a certain point recurring after physical or mental exertion or after emotions or certain pleasures or in sleep. The onset of the seizure should be studied, whether the same groups of muscles are always involved and whether the subsidence of the seizure obeys certain territorial limitations. Some of the 11 patients were remarkably improved and one completely cured, while a number were only transiently benefited.

Jahrbuch für Kinderheilkunde, Berlin.

Last indexed XLV, page 130.

- 51 (LXII, No. 3.) Die Veränderungen des "neutrophilen Blutbildes" bei Infektionskrankheiten (changes in blood in infections). H. Fleisch and A. Schlossberger.
- 52 *Die Behandlung der überkollösen Bauchfellentzündung im Kindesalter, mit besonderer Berücksichtigung der Laparotomie (peritonitis in children). G. Faldut.
- 53 Zur Symptomatologie der Rückenmarkstuberkulose (of spinal cord). F. v. Geisze.
- 54 Über eine eigenartige Degeneration der Marksubstanz bei Tuberkulose des Rückenmarkes (spinal cord). Id.
- 55 *Über Indikationen zur operativen Behandlung der Blasen-Steine bei Kindern (bladder stones in children). A. M. Wintermüt.
- 56 *Über Ovarial-Geschwülste bei Kindern (tumors in children). Id.
- 57 *Über Teratome der Schilddrüse und ihre operative Behandlung (in thyroid gland). H. Fleisch and A. M. Wintermüt.
- 58 *Über die Behandlung der skarlathinösen Urimie mit Vena-sektion. G. Singer.
- 59 Meine neueren Erfahrungen über das Moseische polyvalente Scharlach-Serum (in scarlet fever). J. v. Bokay.
- 60 Zur Behandlung der Leukämie mit Röntgen-Strahlen. H. Fleisch.
- 61 Die Skrofulose. K. Preislich.

52. **Tuberculous Peritonitis in Children.**—Faludi sifts the literature on this subject and reviews the material at the Stephanie Hospital, his conclusions being all in favor of laparotomy at the earliest moment in cases of ulcero-caseous or fibro-adhesive tuberculous peritonitis in children. The results are liable to be excellent in such cases. In the form with effusion, hygienic-dietetic treatment should first be given a thorough trial. If it fails or is not convenient, then laparotomy should be done without delay. Punctures should not be attempted. A serious tuberculous affection in another organ is a contra-indication to laparotomy, but not so fever or debility. Circumscribed tuberculous inflammations in children always demand surgical intervention. The after-treatment in all these cases is of vital importance, the dietetic and hygienic measures being supplemented by the proper anti-tuberculosis medication.

55. **Bladder Stones in Children.**—The tabulated results of Winternitz's operations for bladder stones in children certainly speak in favor of his technic. He crushes the stones and removes them by suction through a tube when the concretions are movable and crushable, the bladder and upper urinary passages free from infection, and the urethra at least as wide as a No. 16 Charnière sound. When the urethra is smaller than this, or when obstinate catarrh of the bladder or posterior urethra resists treatment, then he resorts to the high incision. He examines with the cystoscope to see if any fragments have been left behind after crushing the stones, and on this account does not attempt to crush them when the children are too small to allow the introduction of the cystoscope. He tabulates the details in 28 cases.

56. **Ovarian Tumors in Children.**—Winternitz reports 4 cases cured by operation. The tumor was an embryoma in all but one. Palpation of the tumor usually differentiated the ovarian growth, but appendicitis had been diagnosed in one instance. In this case a dermoid cyst of the ovary, after torsion of the pedicle, had suppurated and perforated through the abdominal wall.

57. **Teratoma of Thyroid Gland.**—Two cases are reported, both cured by operation. They were in infants of 2 and 8 months, respectively. If such a tumor causes no disturbance it might be advisable, he states, to wait until the child is from 1 to 3 years old, but in case symptoms develop earlier prompt interference is required. The total excision of the tumor, as large as a fist, in the left lobe of the thyroid, was borne well by the 8 months' infant. Careful preliminary ligation of the vessels is indispensable. Cartilage tissue was prominent in each of the tumors removed. The tumor in the younger infant originated in the isthmus and was readily removed, the infant being dismissed in good health a week later.

58. **Venesection in Scarlatinal Uremia.**—Singer advocates venesection as the most rational and beneficial measure in scarlatinal uremia. It is especially indicated in cases showing symptoms indicating irritation of the brain. When there is a tendency to coma and depression, venesection can do no harm, but not much can be hoped from it at this stage. It is applicable to both robust and weakly children. If the pulse is filiform, the internal organs are generally irreparably injured at this stage and the operation is generally useless. Venesection should be done as early as possible, during the first uremic attack. The amount of blood to be withdrawn must be decided by the age, strength and severity of the attack. Venesection can be repeated at need after from twenty-four to forty-eight hours. Baginsky thinks that from one-fifteenth to one-twentieth of the total amount of blood can be let out without danger. In Singer's 17 cases of acute scarlatinal uremia treated by venesection, all the patients recovered but 2, that is, the mortality was 12 per cent. In the 9 cases treated without venesection the mortality was 56 per cent.

Wiener klinische Rundschau, Vienna.

Last indexed XLV, page 881.

- 62 (XIX, No. 24.) Krankhafte Gangarten bei Ischias (morbid gait in sciatica). P. Weiz.
63 Ueber die Wirkung der Hämolyse. K. Landsteiner and M. v. Elsler.
64 (No. 25.) *Zur Diagnostik der Lungen Krankheiten. Düniges.

- 65 *Die orthopädische Behandlung von Erkrankungen des Nerven systems. M. Haudek. (Concluded.)
66 (Nos. 28-29.) *Test for "Occult" Gastrointestinal Hemorrhage.—Der Wert der Barbados-Aloin-Blutprobe bei Magen und Darmblutungen. A. v. Torday.
67 Beitrag zur Diagnostik der Tuberkulose und Lues des Kehlkopfes (of larynx). R. Landesberg.
68 Beiträge zur Onychopathologie. G. Nohl.
69 Der psychophysische Parallelismus. K. C. Schneider.
70 Elastic Fibers in Sclera in Myopic Eyes.—Die elastischen Fasern in der Sklera myopischer Augen. A. Elschning.

64. **Diagnosis of Lung Affections.**—Düniges tabulates the findings in 46 patients with special regard to comparison of the elasticity of the soft parts on both sides of the chest in pulmonary affections. The course of the cases confirmed the finding that the tonicity on the affected side is materially diminished in case of unilateral apical affections. In the bilateral affections, the tonicity is less on the side most involved. Careful symmetrical palpation of both sides of the chest will reveal a difference in the tonicity of the soft parts before any other evidences of a pulmonary affection are evident. It is well to mark a number of points on the skin to insure symmetrical examination. The physician stands behind the patient and palpates especially in the clavicular fossa with his fingers, his thumbs in the infraspinous fossa, pressing on the muscles and comparing the resistance on the two sides. Düniges is confident that systematic palpation to compare the elasticity of the soft parts on each side will reveal many an unsuspected incipient tuberculous affection in the apices.

65. **Orthopedic Treatment of Nervous Affections.**—Haudek reviews the various ways in which orthopedics and physical measures are now summoned to the aid of nervous affections. They have contributed to improve the prognosis to a remarkable extent in many cases of paralysis, etc.

66. **Aloin Test for Invisible Blood in Feces or Stomach Contents.**—Extensive tests by von Torday have confirmed the great value of the constant finding of blood in the feces or stomach contents as a sign of cancer. The guaiac test is too delicate for general use, but the aloin modification can be recommended in high terms, he says, corroborating the similar assertions by others. For the modified aloin test, about 5 c.c. of the feces or stomach content to be examined, after removal of the fat, is rubbed up with ether, with a little alcohol if necessary, which is afterward filtered out. About 5 c.c. acetic acid are then rubbed in and 10 g. of ether are mixed with the material and the whole filtered. Then 1.5 c.c. of ozonized turpentine is poured over the extract resulting from the filtering and also .5 c.c. of an alcohol solution of aloin. If blood coloring matter be present, a red ring forms at the junction of the turpentine and the whole of the fluid assumes a diffuse red tint. The turpentine may float on the surface or sink to the bottom, the characteristic red ring forms along its edge. Food containing much chlorophyll does not interfere with the test, but large amounts of urobilin in the feces must be extracted with alcohol beforehand. It is important, also before the test, for the patient to refrain from eating meat with red juices and medicines containing iron. This test will reveal "occult" hemorrhages without fail, and when the test is constantly positive some cancerous lesion should be suspected.

Wiener klinische Wochenschrift, Vienna.

Last indexed XLV, page 1913.

- 71 (XVIII, No. 34.) *Lymphatisches System und Tuberkulose-Infektion. J. Bartel.
72 *Ueber Cholecystitis typhosa. R. Dörr.
73 *Camphor and Atropin Poisoning.—Vergiftungsfälle. W. Löbl.
74 *Standard for Normal Feces.—Aufstellung eines Normalkotes. v. Oefele (Nebenabr.).
75 (No. 35.) Welche Rolle spielt das Leztthin bei der Sublimat-Hämolyse? H. Sachs.
76 Zur Frage der Bildungsstätte der Antikörper (place of formation). E. Brezina.
77 Zur Symptomologie der Pellagra. P. Delacoe.
78 (No. 36.) Ueber Giftstoffe in den Kulturen des Gasphlegmon-Bacillus (toxic substances in cultures). P. Passini.
79 *Versuche mit Cholin (in radium treatment). R. St. Hoffmann.
80 Ueber den Cytotrykts Lins (Siegel). L. Merk.
81 Gefahren der Punktion der Echinokokkus-Cysten (dangers of puncture). A. Zirkelbach.

71. **Lymphatic System and Tuberculosis Infection.**—Bartel noted in some experiments on rabbits fed with virulent tubercle bacilli that a latency of 104 days was evident in some in-

stances. This fact, in connection with the finding of virulent tubercle bacilli in glands which showed no trace of the characteristic tuberculous process, has convinced him that a tuberculous process passes through a phase of small-celled hyperplasia the same as a pyogenic infectious process. There can be no doubt, he thinks, that the lymphocyte is capable of exerting an inhibiting influence on the tubercle bacillus in respect to its action on the living organism.

72. Typhoid Inflammation of Gall Bladder.—The pus from an empyema of the gall bladder in a woman who had long presented evidences of cholelithiasis revealed typhoid bacilli in large numbers. There was a history of a brief febrile affection a year or so previously which must have been typhoid. Dörr injected various bacteria into a vein in rabbits and found that they penetrated into the gall bladder in the course of eight hours or less. Typhoid, paratyphoid, colon and dysentery bacilli proliferated in the gall bladder and were found flourishing there after four months, long after the bacilli had vanished from the marrow, urine and liver. Intravenous injection of typhoid bacilli was always followed by a suppurative but rapidly healing inflammation of the mucosa of the gall bladder. The proliferation of the typhoid bacilli in the gall bladder did not confer agglutinating power on the blood. The typhoid bacilli in the gall bladder are liable to be eliminated in the feces from time to time. It proved impossible to free the bile from injected germs by any therapeutic measures; even intravenous injection of antiseptics failed to render the bile sterile.

73. Camphor and Atropin Poisoning.—Löbl analyzes 6 cases of severe poisoning from the use of camphor and the same number of cases of belladonna or hyoscyamin poisoning, all terminating in recovery. The atropin or oil of hyoscyamus was taken internally by mistake in 4 instances. In the fifth eczema on a child was treated with a lotion prescribed for the mother's rheumatic pains, followed by symptoms of atropin poisoning on the part of the child. In the sixth case, a physician prescribed atropin suppositories in mistake for belladonna. The woman presented the typical picture of atropin poisoning when seen soon after she had used the suppositories. The atropin in the stomach should be removed by emetics, followed by lavage after an injection of morphin. Purgatives and enemas are also useful in case the poison was taken by the mouth. If injected, the place of injection should be cut into and the blood squeezed out. Potassium permanganate is said to be a chemical antidote to atropin. The lavage can be done with water tinted with the permanganate to a pale bluish pink; the permanganate can be given internally in spoonfuls of a .25 to .5 per cent. solution. Husemann recommends administration of tannin, and others iodine and potassium iodid. Morphin is extremely valuable, but it has no action on the heart, and in case of stupor, coma or paralysis it may do actual harm. In such case stimulation of the skin, black coffee, camphor, caffeine, etc., are indicated. The nervousness and insomnia are best combated by tepid baths, and the patient should drink as copiously as possible. A large proportion of the atropin poisonings on record were due to carelessness in prescribing. Very small doses may affect a susceptible person. Fejer's patient presented serious symptoms after the mere instillation of a little atropin in the eye. Intoxication has followed even doses of 1 or 2 mg. and .01 gm. has proved fatal to children. In using the scopolamin-morphin method of anesthesia, extreme caution is required to prevent poisoning. In regard to camphor poisoning, Dörr advises lavage of the stomach as less weakening than repeated vomiting. The intestines can be emptied with sulphate of magnesium or of soda or calomel. Castor oil should be avoided, as also alcohol and milk, as these dissolve the camphor. In case of collapse, stimulation of the skin, and opiates for excitement, injection of morphin, chloral by the rectum or sodium bromid. The patient must be kept warm. Jaksch recommends venesection and saline infusion, and Berkholz advises white sugar as an antidote. Possibly the sugar acts by hastening the transformation of the camphor into campho-glycyronic acid.

74. Standard for Normal Feces.—Oefele's pioneer work in the study of the feces requires a normal standard for compar-

ison before the results can be applied to practical use in the clinic. He suggests as a basis for study that the feces of well-to-do persons, such as those who visit the spas and take courses of mineral waters, should be used to get the average of a large number. It might be desirable if a standard test diet could be arranged for the purpose, free from waste material; but, on the whole, it is better, he thinks, to study large numbers of persons rather than a small number on a prearranged diet. Examination of the feces of large numbers of guests at a watering place would produce a composite standard for the average feces, which could be utilized in study of the coprology of well-to-do patients. The expense of such research confines it exclusively to such material. Unless a normal standard is determined in some such way, the study of coprology will be aimless.

79. Experimental Injection of Cholin.—A weak solution of cholin injected directly into the testicles or spleens of small animals caused changes similar to those observed under exposure to radium.

Zeitschrift f. Geb. und Gynäkologie, Stuttgart.

Last indexed XLV, page 1124.

- 82 (LVI, No. 1.) "Ergbnisse der abdominalen Radikal-Operation des Gebärmutterkrebses mittels Laparotomie hypogastrica (utero-vaginal cancer). G. Brunet.
- 83 Ueber epitheliale Schläuche und Cysten in Lymphdrüsen (glands). Id.
- 84 Zur Frage der konservativen Myom-Operationen. R. Graf.
- 85 Zur Lehre vom Scheidend der Neugeborenen (apparent death of newborn). F. Abfeld.
- 86 Ueber den Kohlehydratstoffwechsel und alimentäre Lävulose in der Schwangerschaft (carbohydrate metabolism, etc., in pregnancy). H. Schroeder.
- 87 Zur Kenntnis des primären Chorion-Epithelioms der Tube. W. Rissel.
- 88 Ueber die prophylaktische Wendung (version). E. Kraus.

82. Results of Abdominal Ablation of Utero-vaginal Cancer.—Brunet devotes 87 pages to the pathologic anatomy of the 70 patients with uterovaginal cancer operated on at Mackenrodt's private clinic. In determining whether the regional glands are involved, the discovery in regard to a gland of adhesions to the wall of the vessel; or of laceration of a gland during the operation, was always followed by the finding of unmistakable cancerous involvement of the gland.

Brazil-Medico, Rio de Janeiro.

Last indexed XLIII, page 1129.

- 89 (XVIII, No. 36.) *Anestesia cirurgica na infancia. A. Guimarães.
- 90 (Nos. 37-38.) Favus atypico. F. Terra.
- 91 *Embalming in Rio.—Embalmsentoms no Rio de Janeiro. I. da Rocha.
- 92 (No. 39.) Prophylaxia da febre anarela (Report of chief of anti-yellow fever sanitary service). C. C. de Mendonça.
- 93 (No. 40.) *Da ignipunctura nas artrites tuberculosas. A. Guimarães.
- 94 (No. 41.) Da osteotomia obliqua subtrochanteriana nas anquiloses do quadril. A. de P. Guimarães.
- 94½ Das indicações de intervenções cirurgicas nas lesões cerebraes. Paes Leme. (Continued.)
- 95 (No. 42.) Considerações geraes sobre o meningismo e a meningite. P. Moraes.
- 96 Sobre o granuloma venereo no Rio Grande do Sul. F. Terra.
- 97 (Nos. 43-5.) Do chorion-epithelioma maligno de Marchand. J. T. N. de Gouvea.
- 98 (No. 46.) Edema agudo angio-neurotico. H. Roxon. One case.
- 99 Notificação compulsoria. L. M. dos Santos.
- 100 (XIX, No. 1.) *Complicações oculares da varíola. Abreu Fialho.
- 101 A "fourth disease" em Petropolis. M. Guimarães.
- 102 (No. 3.) Das perforações da membrana tympanica e seu tratamento. L. Rocha.
- 103 Fracturas de lmaxacos. A. de Mello. (Concluded.)
- 104 (No. 4.) Neurasthenia. M. Pereira.
- 105 (No. 6.) Prophylaxia da febre amarela (yellow fever). B. Carvalho.
- 106 (No. 7.) Pathogenia e therapeutica dos edemas. P. Guimarães.

89. Anesthesia for Children.—Guimarães advocates chloroform for long operations and ethyl chlorid for short ones when they are to be performed on children. Spinal anesthesia is good and effectual, but it frightens the children too much.

91. Embalming in Rio.—Da Rocha gives a list of prominent persons who have been embalmed in his city and exposed to public view weeks or months afterward. The list includes the pianist Gottschalk, whose public funeral later at Philadelphia was an ovation to his memory. Only one medical name is in the list.

93. **Ignipuncture of Tuberculous Joints.**—Guimaraes reviews the history of this intervention and describes the excellent results attained in a case of a tuberculous hip-joint affection in his own experience. After ethyl chlorid anesthesia, five times the actual cautery was inserted in the joint down to the bone, and a compressing bandage then applied. About three weeks later chlorid of zinc was injected into the joint, and the injection was repeated a fortnight later. The results were most excellent, both in regard to the prompt healing of the tuberculous lesions and the restoration of function.

100. **Eye Affections in Smallpox.**—Abreu Fialho has observed ocular affections in a large number of cases of smallpox. Both eyes were affected in 16 out of the 65 patients with eye troubles from this cause; total blindness resulted in 4, and in 15 the sight of one eye was completely lost. About 50 of the patients were under 18. Fourteen different kinds of ocular lesions were observed, but the majority were superficial keratitis and keratoiritis with hypopyon. It is important, he says, to open the eyelids by mechanical measures when they are much involved, and to instill an antiseptic or to apply an eye wash of methylene blue in a concentrated solution.

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- 107 (X, No. 2.) * Necesidad de la vacunación y de la revacunación a todas aquellas personas que han tenido la viruela (vaccination after smallpox). V. de la Guardia.
- 108 (No. 3.) *Polineuritis mecánica de la toral (in women). R. P. Vento.
- 109 Estudio de las anafilaxias piodérmicas. F. Torralbas.
- 110 (No. 4.) Oftalmía simpática por traumatismo de larga fecha (accident 20 to 24 years before). J. L. Dehognes.
- 111 Valor de la intervención quirúrgica en un caso de fractura completa del cráneo sin herida exterior (skull wound without external lesion). F. G. Roura.
- 112 (No. 5.) *Rápida purificación de la vacuna anti-variolosa. V. de la Guardia.
- 113 (No. 6.) Anatomía topográfica del bazo (of spleen). C. A. C. Bastillos.
- 114 (No. 7.) Cheese.—Queso. L. M. Cowley.
- 115 (No. 8.) Anatomía topográfica del páncreas. A. Serra y Perez.
- 116 L'estorvina como anestésico local. I. Tonarely.
- 117 (No. 9.) Nuevo procedimiento de nefrectomía subcapsular. J. Albarran.
- 118 Necrosis de origen gripal en un sífilítico. O. Amodeo.
- 119 Forma insolita de impaludismo pernicioso. C. M. Garcia.
- 120 *Neumococo pneumoniae. Localización de la infección en el aparato genital. R. Menocal.
- 121 Tratamiento de la fiebre tifóidea. R. G. Mon.
- 122 Profilaxia de las complicaciones articulares de las fiebres eruptivas y de la gripe. G. M. Landu.
- 123 Efectos nocivos del tabaco en el aparato auditivo. Id.
- 124 Vómitos acetónicos, periódicos, cíclicos en los niños (in children). G. Arostegui.

107. **Necessity for Vaccination After Smallpox.**—De la Guardia is chief of the vaccination service in Cuba, and he says that he has had occasion to vaccinate 1,599 persons within a certain period, 328 of whom presented signs of having already had smallpox. Of these 328, 47 had never been vaccinated, and the vaccination resulted positively in 17. The results were also positive in 48 of the 263 who were revaccinated. The results were thus positive in 65 out of 328 persons who had already passed through smallpox, about 20 per cent. of the total.

108. **Mechanical Polyneuritis in Women.**—Vento's patient was a woman of 31—a vi-pará—who had suffered from paralysis of arms and legs two years previously, with considerable pain in the muscles. The attack of paralysis lasted about two months, and then the patient gradually recovered the use of her limbs, but the paralysis recurred about a year later and persisted for several weeks. The paralysis of the arms finally yielded to hypodermic use of strychnin, but the legs remained paralyzed. The uterus was in retroversion, with cervical endometritis and laceration. The displacement of the uterus was corrected, after which the paralysis of the legs rapidly subsided and the patient was discharged, quite cured, in less than three weeks. Vento accepts compression of the sacral plexus and its branches by the retr. vertes uterus as the direct cause of the paralysis of the legs. The compression of these nerves also induced vascular disturbances which interfered with normal circulation in the spinal cord and prevented its proper nourishment, thus secondarily entailing the paralysis of the arms. This assumption of a mechanical polyneuritis was confirmed by the gradual subsidence of all the symptoms under treatment based on it.

112. **Purification of Vaccine.**—De la Guardia relates experiences which sustain the claims made for the method of purifying vaccine by passing air charged with chloroform through it according to the technic of Alan Green.

119. **Rare Form of Pernicious Malaria.**—Garcia's patient was a 9 months' babe whom he found absolutely unconscious and insensible, temperature subnormal, pulse filiform, 130 to the minute, the skin pale and dry, respiration rapid but regular, and no contractions. The attack had come on suddenly with a dry cough; the comatose condition followed in a few minutes. There were no pathologic antecedents in the child or the parents, but the locality (Vera Cruz) suggested the possibility of malarial intoxication, and Garcia made a subcutaneous injection of 1 gm. (15 grains) of quinin hydrochlorid. He always uses this dose in pernicious malaria, irrespective of the age of the patient. He also gave a rectal injection of 2 liters of warm artificial serum and had the child wrapped in hot wet sheets, with cold applications to the head. The drop of blood that escaped when the quinin was injected was almost black. A few minutes after the injection the symptoms began to subside, and in less than four days there was no trace of the child's illness except a small abscess on the left buttock where the quinin had been injected.

120. **Pneumococcus Infection of Genital Apparatus.**—Menocal describes 3 cases in which pneumonia of the lungs was complicated by a pneumococcus vaginitis and thrombophlebitis of both spermatic cords in two patients and by orchiepididymitis in the third. The patients were men of from 38 to 51 years of age. No pneumococci could be found in the genital lesions, but the pneumococcal origin of the complications, he thinks, is beyond question, for reasons which he enumerates.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

JAHRESBERICHT ÜBER DIE FORTSCHRITTE IN DER LEHRE VON DEN PATHOGENEN MIKROORGANISMEN UMFASSENDE BACTERIEN, PILZE UND PROTOZOEN Unter Mitwirkung von Fachgenossen bearbeitet und herausgegeben. By Dr. med. P. von Baumgarten and Dr. med. F. Tancal. Neunzehnter Jahrgang, 1905. Paper. Pp. 1,220. Leipzig: Verlag Von S. Hirzel, 1905.

A LABORATORY MANUAL OF PHYSIOLOGICAL CHEMISTRY. By E. W. Rockwood, Ph.D. Second Edition, Revised and Enlarged, with one colored plate and three plates of Microscopic preparations. Cloth. Pp. 229. Price, \$1.00 net. Philadelphia: F. A. Davis & Co., 1906.

BODILY DEFORMITIES. The Nature, Causes, Variety and Treatment. A Series of Lectures. By E. J. Chance, F.R.C.S. Edited by J. Poland, F.R.C.S. Second Edition, in two volumes. Vol. 1. Cloth. Pp. 315. Price, 6s. net. London: Smith, Elder & Co., 1905.

MASSAGE AND THE ORIGINAL SWEDISH MOVEMENTS, their Application to Various Diseases of the Body. By K. O. Osterlin. Sixth edition, revised and enlarged, with 115 illustrations. Cloth. Pp. 184. Price, \$1.00. Philadelphia: P. Blakiston's Son & Co., 1905.

NASAL SINUS SURGERY, with Operations on Nose and Throat. By B. Douglass, M.D. Illustrated, with 67 full-page half-tone and colored plates, including nearly 100 figures. Cloth. Pp. 264. Price, \$2.50 net. Philadelphia: F. A. Davis & Co., 1906.

A MANUAL OF BACTERIOLOGY. By H. W. Williams, M.D. Revised by W. M. Bolton, M.D., 108 illustrations. Fourth edition, revised and enlarged. Cloth. Pp. 357. Price, \$1.75. Philadelphia: P. Blakiston's Son & Co., 1905.

WALKING FOR EXERCISE AND RECREATION, with Rules and Special Exercises for Overcoming Common Faults in Walking. By W. R. C. Latson, M.D. Illustrated. Paper. Pp. 38. Price 10c. New York: Health-Culture Co.

REFRACTION, including Muscle Imbalance and the Adjustment of Glasses. By E. S. Copeland, A.M., M.D., and A. E. Ivershoff, M.D. Cloth. Pp. 144. Price, \$1.50 net. Philadelphia: Boericke & Tafel, 1906.

THE PHYSICAL EXAMINATION OF INFANTS AND YOUNG CHILDREN. By T. W. Kilmer, M.D. Illustrated with 59 half-tone engravings. Cloth. Pp. 86. Price 75c net. Philadelphia: F. A. Davis & Co., 1906.

TWENTY-FIRST REPORT OF THE SOCIETY FOR INSTRUCTION IN FIRST AID TO THE INJURED. Paper. Pp. 22. New York: Published by the Society.

CHRISTIANITY AND SEX PROBLEMS. By H. Northcote, M.A. Cloth. Pp. 257. Price, \$2.00 net. Philadelphia: F. A. Davis & Co., 1906.

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Original Articles

GANGRENE OF THE GALL BLADDER. RUPTURE OF THE COMMON BILE DUCT, WITH A NEW SIGN.*

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In 1879 I had the privilege of reporting my first gall-stone operation to the American Medical Association. In the intervening years, the surgery of the gall bladder and bile ducts has been so far developed that individual case reports have no place in our overburdened literature, unless, as by their aggregated number, they add weight to some general principle involved in the choice of and time for operation, or throw light on the causes of death in seemingly simple cases. The two case reports, I submit, do not belong to either category, but their comparative rarity must serve as my excuse for presenting them.

GANGRENE OF THE GALL BLADDER.

Patient.—A. B., male, aged 21, was admitted to the Jewish Hospital June 25, 1905.

History.—The patient, whose father and mother are both living, has never, to his knowledge, been ill, except for a pneumonia four years before the onset of the present trouble. Three days before admission he was taken with very violent pain in the lower part of the abdomen. He attributed it to rather free indulgence in beer, which he vomited after ingesting it. Four hours after the beginning of the symptoms the physician who was summoned administered morphia hypodermatically for the relief of the pain, which had become intolerable. Ice bags were ordered and applied continuously. Although the starvation treatment had been rigidly carried out, the vomiting continued at frequent intervals, except when the patient was under the influence of morphia. The diagnosis of appendicitis had been made and operation advised within twenty-four hours of the beginning of the attack. The bowels were moved by enemata.

Condition on Admission.—The patient was well developed and well nourished. Temperature 100 plus; pulse fluctuated between 100 and 120. The patient had a very anxious facial expression and vomited frequently large quantities of bile-tinged fluid. The tongue was dry and heavily coated. The abdomen was very much distended, with marked muscular rigidity on the right side. Percussion showed excessive tympany which had pushed the liver dullness upward. Although the entire right side of the abdomen was tender to the touch, the tenderness seemed most acute in the lower quadrant and in the loin. The blood count showed leucocytosis of 31,600 white.

Diagnosis.—Acute appendicitis, with gangrene probable.

Operation.—An incision was made through the right rectus. When the peritoneum was opened, a considerable quantity of turbid serum escaped. The coils of distended and congested intestine appeared in the wound covered in many places with flakes of whitish lymph. They were held aside with considerable difficulty. The appendix was readily brought

into view and removed. While it presented evidence of inflammation like the adjacent coils of intestine, there were no adhesions and no signs of perforation. It seemed evident that this was not the source of the peritonitis. The incision was, therefore, elongated for better exploration. There was revealed a tensely distended gall bladder almost uniformly black and without any luster. This appearance of the gall bladder could be seen, through the large wound, to extend to the very neck of the viscus. The examination was made easy by the absence of adhesions, either recent or old. Before deciding to open the gall bladder, as is my invariable custom, the common duct was carefully palpated for a stone or other tangible cause of obstruction, but none was found. After carefully protecting the intestine with aprons, the gall bladder was incised and about ten ounces of ropy, viscid bile mixed with blood clots were removed. There was no pus. The vesical contents were free of odor, and a number of cultures on agar-agar and blood serum were made. All remained sterile. Most careful exploration of the gall bladder failed to reveal either stones or biliary sand. The operation was completed as an ordinary cystotomy, except that enough gauze packing was inserted about the gall bladder to protect the general peritoneum from a new infection from the sloughing process which was sure to ensue. After thorough toilet of the abdomen, the lower part of the wound was closed by layer sutures.

Result.—The operation left the patient with a pulse of 150; the recovery, nevertheless, was rather rapid. Vomiting ceased at once. For ten days the temperature fluctuated between 101 and 103, when it and the pulse rate returned gradually to the normal. On the third day after the operation, the dressings were saturated with bile, which did not come through the intravesical drainage tube. Five weeks after the operation the gall bladder was discharged almost en masse from the wound. The black slough showed the various coats quite down to the cystic duct. After the expulsion of the gangrenous mass, the biliary fistula healed rapidly. The patient left the hospital September 3. He has since regained full health and weight. The wound is solidly closed.

RUPTURE OF THE COMMON DUCT, WITH AN UNUSUAL SIGN.

For the following history I am indebted to Dr. J. E. Greiwe:

Patient.—W. B., aged 53, occupation, merchant; residence, city.

Family History.—Father died at the age of 65 from cancer of the stomach. Mother died at the age of 84; cause of death, "old age." One sister died at the age of 48 from cancer of the breast. One brother died in infancy; cause unknown. Four brothers are living; one is now suffering from locomotor ataxia. Another of the brothers, at the age of 6, had an attack of infantile cerebral palsy. Two sisters are living and well.

Personal History.—Patient claims not to have had the ordinary diseases of childhood; in fact, not to have been ill until 6 years previously, when he passed through a moderately severe attack of typhoid fever, from which he made an apparently perfect recovery. In April, 1905, he had what appeared to be a very mild case of acute indigestion, lasting not longer than twelve hours. At that time he had no fever, no vomiting, and considered himself perfectly well on the following day. On Aug. 19, 1905, while on a vacation at Prince Edward Island, he was seized with severe, sharp, colicky pains, which he lo-

* Read before the Southern Surgical and Gynecological Association.

cated in the region of the umbilicus. The pain began at 11 o'clock at night after he had retired and continued to be severe all night; it was partially relieved by an enema on the following morning. He was seen by his physician the next day, who pronounced the attack one of acute indigestion, and ordered a dose of castor oil, which secured a very free movement of the bowels. The pains continued, however, but became less and less intense and disappeared after four or five days, during which time the patient remained on a restricted diet. There was neither fever nor chill during this attack, nor was the patient at any time jaundiced. From that time until the onset of the present trouble, October, 1905, the patient considered himself absolutely well, attending to his business and enjoying perfect health. Even on the morning and afternoon of the day when the trouble began he performed his usual duties about the office. The attack came on suddenly at 6:30 p. m., beginning with a severe chill, which lasted about twenty minutes.

Examination.—I saw the patient half an hour after the chill had subsided. He was resting in bed and seemed fairly comfortable, except for a slight uneasiness, not a severe pain, in the upper right quadrant of the abdomen. Pulse and temperature were normal. There was neither nausea nor vomiting. The bowels had acted freely early in the morning. An examination of the abdomen revealed a tenderness, but very little rigidity, in the right hypochondrium. The region of the ileocecal valve was absolutely free from pain and tenderness. The abdominal walls were very soft and relaxed.

Course of Disease.—The patient was ordered to remain in bed and was given nothing, except a dose of Carlsbad salt early on the following morning. During the night the pains in the right hypochondrium became more severe, and when seen early in the morning there was some slight rigidity of the abdominal wall in this region. The Carlsbad salt had been rejected by the stomach. Pulse was 76; temperature, 99. The region of the ileocecal valve was free from pain and tenderness. During the day he was seen at frequent intervals, and, on account of the severity of the pain, which was sharp and cutting in character and now equally distributed over the whole right side of the abdomen, he was given hypodermic injections of morphia. During the day the pulse and temperature, taken at intervals of every three hours, ranged between 76 and 92, temperature 99.2 to 99.8; the pulse was full and regular. An examination of the thoracic organs revealed heart and lungs in good condition. The urine was high colored and acid; the specific gravity was 1024, and there was a trace of albumin. There was no sugar and only a slight trace of indican. The abdomen became very much distended and decidedly tympanitic; no bowel movement was obtained, in spite of repeated lavage of the colon. The patient suffered excruciating pains, which were now localized very definitely on the right, with the seat of the greatest intensity over the lower right quadrant of the abdomen. There was exquisite tenderness over McBurney's point. Again during the night repeated injections of morphia were given to relieve the pain. All efforts to obtain an evacuation of the bowels during the night and following day were unsuccessful. On Saturday the distension of the abdomen continued; there was extreme tympanitis, pain and tenderness, most marked on the right side, and particularly over McBurney's point. There was no dullness on percussion over this area. After this the patient referred all his pain to the lower right quadrant of the abdomen. The temperature at no time on Saturday rose above 99.2, the pulse varying from 86 to 96. In the evening, at 7 o'clock, lavage of the bowels with warm water, glycerin and Epsom salts produced an evacuation of mucus, which was slightly bile tinged and which had a distinctly fecal odor. After this evacuation of the bowel the patient rested somewhat easier, but on Sunday morning, at 3 o'clock, I was called again to see him. The pains in the right lower quadrant of the abdomen had become very intense, requiring the injection of a half-grain of morphia. There was a distinct change in his facial expression, the breathing had become shallow and rapid, the pulse was small, easily compressible and irregular. The abdomen was more distended and very tender on pressure on the right side low down. There was very little tenderness to pressure over the region of the gall bladder. It was evident from the severity of the peritonitis, the extreme distension and

the changes in character of the pulse and respiration that the time for an abdominal section had come. The patient at no time had been jaundiced, and it was left for the operator to determine the nature of the peritoneal inflammation.

Condition on Admission to the Hospital.—Patient was a large-framed man, with every indication of intestinal obstruction from peritonitis. His facial expression was anxious, pulse about 130, temperature 100. Examination of the abdomen revealed extreme tympany, with the liver dullness very much pushed up and reduced in area. On inspection of the abdomen, attention was called to a marked jaundice of the umbilicus. The navel was of a distinct saffron-yellow color in strong contrast with the rest of the skin over the abdomen. It was the only evidence of jaundice. Tenderness was extremely marked over McBurney's point.

Probable Diagnosis.—Peritonitis of appendiceal origin.

Operation.—Gas-ether anesthesia. An incision was made through the outer border of the right rectus muscle. When the subperitoneal fat was reached, it was found markedly tinged with yellow. With the opening of the peritoneum, there poured forth a quart or more of free bile mixed with serum. The coils of the small intestine were loosely agglutinated and in many places covered with shreds of lymph. It being evident that we had to deal with a rupture of either the gall bladder or of one of the bile ducts, the incision was rapidly elongated. The gall bladder was found quite empty and retracted under the liver. It could readily be traced to the cystic duct, and neither in the latter nor in the gall bladder was there any sign of inflammation beyond the general redness which appeared everywhere on the peritoneal surfaces exposed. The gall bladder did not seem particularly thickened. After thoroughly removing with gauze sponges the free bile in the peritoneal cavity, it was evident that the flow of bile continued from the aperture behind the gastrohepatic ligament. The fat in the great omentum was very deeply stained with bile. By holding the latter aside and pressing the viscera, with gauze aprons to the left, a tear could be felt in the posterior wall of the common duct, through which the bile without question had escaped. The tear admitted the end of the little finger and it was in the supraduodenal part of the common duct. It could not be brought into view. As careful a search as possible was made for a stone, but none was found. The condition of the patient did not warrant unnecessary prolongation of the operation, which was completed by making a stab puncture through the loin and inserting through it a half-inch drainage tube. A second tube was inserted to the anterior surface of the gastrohepatic ligament. About this considerable packing was placed. The flow of the bile from the posterior tube was very free for three or four days, from which time on it gradually became less and ceased altogether in ten days. From this time on the recovery was uneventful.

REMARKS.

Although the cases presented differ in many important points, they have enough factors in common to warrant their consideration together. In the first place, in each of them, a rapidly developing peritonitis made an operation absolutely imperative as an *indicatio vitalis*. In each of the cases the operation revealed a condition which to the naked eye, at least, had all the signs of a peritonitis, which might speedily cause death. In one of the cases there was an unruptured, but gangrenous gall bladder, the contents of which were proved to be sterile; in the other, free bile in large quantities was found in the peritoneum. Unfortunately in this case cultures were not made, but the gall bladder appeared normal. Since the reports of Naunyn,¹ Hayem,² Lane³ and others, which appeared some fifteen years ago, it has become the vogue to look on normal bile as a rather inoffensive agent when thrown into the peritoneum, and experiments in animals have been often made, notably by

1. Naunyn: *Klinik der Cholelithiasis*, 1892.

2. Hayem: *Gaz. des Hôpitaux*, 1889, p. 12. Cited Erhardt.

3. Lane: *London Lancet*, 1891, vol. 1.

Erhardt,⁴ to bear out this view. That bile has a tendency to destroy the virulence of the bacteria with which it comes in contact has been fully established, and this doubtless explains the fact that the peritonitis consequent on lesions of the biliary ways is less likely to become rapidly generalized and fatal than is perforation peritonitis from other causes, such as appendicitis. The tendency to the formation of protective adhesions is greater perhaps also because of the natural diaphragm which the colonic arch and the mesentery form between the biliary ways and the general peritoneal cavity below. Abscess formation and even spontaneous recovery, therefore, are not uncommon. It appears even that post-operative results are excellent. Neck⁵ has collected eleven cases of spontaneous rupture of the gall bladder containing stones, with eight recoveries. On the other hand, Korte⁶ has seen nine such patients, of whom five were beyond operative help. Of four patients operated on, two recovered. In the fatal cases, death resulted between the third and tenth days. Moynihan⁷ and Mayo Robson⁸ cite a number of cases in which death resulted from uncomplicated wounds or tears in the biliary ways. It is not safe, therefore, to regard the bile as a too innocuous agent when poured into the free peritoneum. Hahn⁹ has recently collected seven cases of rupture of the ductus choledochus of traumatic origin, in all of which the patients died with one exception. In the case of rupture of the common duct reported, it is more than likely that it resulted from the impaction of a stone. That none was found at the operation does not militate against this theory in view of the previous history of the case. Just when the rupture took place it is impossible to state, but probably not later than thirty-six hours after the onset of the symptoms.

Regarding the diagnosis in the cases presented, it must be regretted that a correct diagnosis was not made of the cause of the existing peritonitis. In the case of gangrene, a diagnosis of appendicitis was positively made, and in that of rupture of the common duct it seemed probable that a perforated appendix would be found. The age of the patient and the history of previous attacks of indigestion and of severe colic made us think of the gall bladder as the source of the peritonitis, but concentration of the tenderness in the lower quadrant of the abdomen made it probable that an appendicitis was present. Both cases emphasize the fact that in the presence of peritonitis a doubt as to its source makes for, rather than against, the advisability of an operation.

I wish here to call attention to a sign which was referred to in the case of the ruptured duct before the incision was made, and one to which I believe attention has never before been directed. It is the localized jaundice of the umbilicus. Although a single case is not usually sufficient to warrant the assumption that something new has been observed, this feature was so marked that I can not refrain from believing that further observation will give to this localized jaundice some value as a sign of free bile in the peritoneal cavity. In the case presented, this feature gained in interest as the staining of the subperitoneal fat with bile was observed in the incision through the abdominal wall. The jaun-

dice is probably the result of inhibition. It makes itself manifest first in the integument of the navel, because this part is thinner than the rest of the abdominal wall.

It is possible, of course, that by reason of the anatomic relations of the round ligament of the liver to the transverse fissure there is a retrograde flow of bile through the lymphatics toward the navel, just as the *caput medusæ* is produced in cirrhosis.

Total gangrene of the gall bladder, to my knowledge, has not been observed, except in the case presented, as an affection independent of gallstones. Altogether, total gangrene of the gall bladder is a rare condition. Kehr and Korte⁶ do not mention it as an independent affection. Czerny¹⁰ describes two cases of gangrenous cholecystitis due to impaction of a stone in the cystic duct. Both patients were operated on, one successfully. Czerny¹⁰ ascribes the gangrene to pressure on the cystic artery, which, except for a very insignificant anastomosis along the attached surface of the gall bladder, is practically an end artery. In both of Czerny's cases the symptoms were those of intestinal obstruction. The gangrene was limited to the mucosa of the gall bladder. In 1894 Hotchkiss¹¹ found a gangrenous gall bladder by operation twenty-four hours after the onset of symptoms. A large stone was impacted in the cystic duct. No cultures were made. The patient died. Ferguson¹² reports a case of gangrene, in which operation was performed on the thirteenth day. Many stones were found. The contents of the gall bladder were sterile. Five weeks after the operation most of the gall bladder came away as a slough through the fistula.

In the case above reported, a most careful search failed to reveal the presence of a stone. Moynihan⁷ reports a case in which gangrene followed the involvement of the hepatic artery in carcinoma of the pancreas. The etiology of the case above reported is far from clear. There was no infection of the gall bladder at any time, at least not by aerobic bacteria. I believe that the gangrene resulted from occlusion of the cystic artery, although the manner of its obstruction must ever remain a matter of speculation. That it resulted from the excessive vomiting which marked the onset of the attack is more than probable. I am inclined to believe that by reason of this vomiting there was a twist in the neck of the gall bladder which involved the patulousness of both the cystic duct and artery. Theorizing may be in vain and even unprofitable, but it rarely lacks interest.

THE REGULATION OF PROSTITUTION.

HOWARD A. KELLY, M.D.
BALTIMORE.

Every American traveling in the United States and everyone who goes abroad has often cause to blush when he finds useless and long worn out methods of various kinds introduced and seriously tested, to the great inconvenience of the body politic.

One of these systems, whose ominous mutterings I hear first in one part of the country and then in another, as it threatens to saddle its incubus on our long suffering people, is the regulation of prostitution by some sort of governmental sanction and control. Now, "*réglementation*" or regulation has been so thoroughly tested in

4. Oscar Erhardt: "Ueber die von d. Gallenwegen ausgehenden Peritonitiden."

5. Neck: "Perforation de Gallenblase." Deutsch. Zeitsch. f. Chir., vol. lxxi, p. 334.

6. Korte: Belt. z. Chir. der Gallenwege, 1905, p. 192.

7. Moynihan: "Gallstones," p. 167.

8. Mayo Robson: "Gall Bladder and Bile Ducts," p. 68.

9. Hahn: "Subcutane Rupture d. Gallenwege." Long. Arch., vol. lxxi, p. 1024.

10. Czerny: "d. Nekrose d. Gallenblase," Munch. Med. Wochts., vol. L, p. 929.

11. L. W. Hotchkiss: Annals of Surgery, vol. xvii, 1894, p. 197.

12. Ferguson: THE JOURNAL A. M. A., Jan. 24, 1905.

Europe, and with such conspicuous failure, that the Society of Sanitary and Moral Prophylaxis, of which the noted syphilographer, Dr. Prince A. Morrow, is now president, in taking up the question of dealing with the social evil and its attendant diseases, does not even propose to discuss at its meetings any papers advocating regulation. Surely our legislators, as well as those of our physicians who have but a limited knowledge and experience in such matters, can well afford to be guided in regard to them by the eminent experts who constitute the active members of the society and who hold this positive conviction without any bias whatever.¹

Given an evil, a sore on the body politic, the first impulse of the inexperienced enthusiast is to rush to the legislature to have a law enacted to the effect that the sore must not be there, or else that so long as the sore persists in remaining there, a committee of the legislature, or an emissary in the shape of a political doctor, shall pay the locality regular visits and spend valuable time in contemplating the sore, in order to see that it does not grow worse, with the idea, apparently, that a salutary restraining influence is thus exercised over it, through the high moral influence (*sic*) of his presence. In all this the twentieth century legislator recognizes unlimited graft, and he becomes an eager abettor of the callow philanthropist. This farce has gone so far, indeed, in the matter of the regulation of vice, that, had it not been for the women of our land, we should long since have been laboring in the slough of this most pernicious of all forms of legislation in every city in the land.

The only system as yet tried in this country is, as I have elsewhere said, that of utter indifference. As might have been anticipated, this has proved a disastrous failure, and we are in consequence called on to face the renewed efforts now being made to introduce another and even worse system, namely, that of regulation, which has so conspicuously failed elsewhere. It is saddening and disheartening to reflect that it is almost 2,000 years since we heard the fundamental declaration that "by the law is the knowledge of sin," while we stand here, in the midst of our boasted civilization, actually proposing that by the law sin shall be made safe and easy, corrupting the very standards of righteousness and justice at their fountain heads and placing the burden of proof that immorality is sin on him who would uphold right and purity.

If then experience at home has shown that indifference is a failure, and experience abroad has proved that regulation is no more successful, is there any remedy for this evil in our midst, and if so, what is it? A remedy there is, but it is not an easy remedy. It is of a drastic nature and acts on the whole system in order to purge this sore, cleansing the body of many noxious humors and sending good sound blood to the spot. This remedy is a sense of personal responsibility, which manifests itself under the form of an active, aggressive interest in this as well as in all other forms of right doing, by carrying on an unrelenting personal campaign against them, wherever and under whatever guise they may be found. A high standard of morals must be maintained in every avenue of life, for nothing is more certain than that this impurity cannot be removed, or even lessened, while the business and social life of the community remain corrupt in a thousand different ways.

1. "What is the Right Attitude of the Medical Profession Toward the Social Evil?" *THE JOURNAL A. M. A.*, March 4, 1905. "The Best Way to Treat the Social Evil," *Med. News*, June 24, 1905.

Now simply to state that we need a higher standard of morals is but expressing the fact of the disease in different terms, and conveys no power of reform. We do not need knowledge, as some of us imagine; we need some transforming, regenerating power from without to enable us to accomplish that which our corrupt tendencies continually hinder. For this reason my own hope lies solely in God and in prevailing on men to look to Him for grace and strength to do that which they can not of themselves accomplish. Such a definite, real, personal approach to God is offered to us by our Christian faith, and where the faith is real it confers this power. "Sin shall not have dominion over you." But while it is eminently proper to point to this, in my belief, the one true remedy, the present is not the place for a full discussion of this subject.

If you tell me that the course I suggest is an impossibility I answer, neither is there any balm in Gilead for this wound. But if it can not be remedied, at least do not let us debase public morals by making the very laws of the land panderers to vice; because our feet are in the mire is no reason why we should wade in waist deep.

Before leaving this subject of regulation I wish to present the translation of an important article which details the experience of an enthusiast for regulation, who carefully observed and studied the methods in vogue in Brussels and in Paris, and then had an opportunity of testing them while in an official position of his own at The Hague—I refer to Professor J. L. Chanfleury van Ijsselstein. I consider his testimony the more valuable because he was at the outset, as I have said, an ardent advocate of regulation and entered on his career with enthusiasm, yet he speaks here, after some years' experience, as a converted skeptic.

If regulation, tested under such favorable circumstances, has failed in a country where law is, in some degree at least, respected, how can a like plan succeed in a country like ours, where the very term legislator has become a byword for corruption; where laws are made to be evaded and set aside by expensive processes, quibbling, and disheartening delays, and where every man does that which is right in his own eyes.

I quote Professor van Ijsselstein, therefore, hoping that his experience may prove "a word to the wise."

THE REGULATION OF PROSTITUTION FROM THE POINT OF VIEW OF PUBLIC HYGIENE.

BY PROF. J. L. CHANFLEURY VAN IJSSELSTEIN, GENEVA, 1889.

Regulation of prostitution was first established in the hope of restricting the extension of venereal disease. By such means it was hoped that infections would be traced to their origin, and the public thus protected against diseases which incontestable experience shows are productive of the most formidable consequences. This is done by isolating the infected women and thus making it impossible for them to injure others. As it is, even persons whose habits of life forbid us to imagine that they have acquired an infection through their own fault, are not insured against it, but must often suffer for the sins of others.

Such an object is surely a praiseworthy one, and there is no reason why we should, as we are too easily tempted to do, assume a less honorable motive in the establishment of regulation. If our food and drink are subjected to a minute analysis in order to detect adulteration and prevent disease, it might be thought that in the very name of justice, women, considered as necessary to the satisfaction of the sexual instinct, might be regarded as equally adapted to protective measures. From this point of view the authorities might well wish to manifest their foresight by placing the means of healthy coitus, as well as of healthy nourishment, at the disposal of the public.

In any discussion as to the efficacy of regulation, such motives should be regarded as beneath the dignity of those in authority, as well as of the physicians in charge of this service.

The purpose of our undertaking is to inquire, as far as possible, into the results of the regulation of prostitution from a medical point of view. To accomplish this end we must determine the conditions under which examinations should be made, and ascertain what infections should be considered as dangerous or suspicious. We must also, of course, inquire whether the medical officials in charge of the examinations are really of the highest standing in their profession. The following question has for a long time awaited an answer: Does or does not the periodical examination of prostitutes afford sufficient guarantee against contagion? The gist of the whole matter is, indeed, contained in it, for a medical examination which gives no security against contamination is probably productive of more harm than good.

In order that examinations shall afford a sufficient guarantee against possible contagion, it must be possible to isolate, not only the women affected with contagious venereal disease, but also those under suspicion of it. Therefore, not only all prostitutes who present unmistakable evidence of infection, but also all those who require to be kept under observation because their true condition can only be determined by subsequent examination, must be restrained from the exercise of their profession. All cases of primary syphilis must be isolated, and also all cases of secondary syphilis in the condylomatous stage. In other words, every woman who has a primary lesion, or in whom it is suspected, must be restrained from spreading infection, and also every woman who presents condylomatous symptoms, or who is passing through the condylomatous stage of the disease, even without the external manifestations of it.

Every erosion, vesicular or pustular, and also every congestion or turgescence which resembles the first stage of an initial sclerosis, on whatever part of the body it may occur, must be suspected of being a primary lesion. It is impossible to designate any characteristic sign by which these manifestations can be distinguished from those which are not contagious; even their situation is only a relative indication of their nature. Isolation of the affected person is essential, because it is only by further observation that the real specific character of the disease can be determined.

In constitutional syphilis, mucous patches and everything resembling them must be considered as potentially contagious. Thus an eczema interigo, situated not only on the genital organs, but between the fingers or toes, may conceal a mucous patch. In the same way a trivial redness at the corner of the mouth, on the tongue, or, above all, in the region of the tonsils, which is, at first, indistinguishable from a catarrhal affection, may be the earliest appearance of a mucous patch and fully as contagious. This is why it is hard to distinguish mucous patches from the lesions characterized under the name *leucoplakia*. This latter affection, which is of long duration, should always be regarded as suspicious. Indeed, women passing through the condylomatous stage are dangerous, even without external evidence of it, for they can contaminate through both the blood and the secretions.

From the point of view of risk of contagion, it is important to note that it is exactly the more obvious manifestations, such as syphilitic lupus or other later ulcerative indications which are least contagious or not contagious at all. The majority of syphilitic manifestations are barely perceptible or extremely mild in appearance. There is, of course, an exception in the fact that latent syphilis can be communicated during the condylomatous period, for incontestable cases of it have been established. And in the presence of so dangerous a disease all exceptions must receive careful attention, above all if in so doing we secure ourselves more surely against infection. Bleorrhagic affections are of no less importance. It is claimed that they do not, like syphilis, induce blood poisoning. This is incontestable, but they are none the less capable of sometimes poisoning the lives of persons afflicted with them. Moreover, the numerous sequelae, whether mild or severe, which may result from bleorrhagia, are well known. The most frequent of these is stricture of the urethra. I have known persons whose whole existence was made miserable by reason of this infirmity, in spite of the most skillful treatment. They failed to achieve the social position to which they might have aspired and fell victims to premature death. It is unnecessary to enumerate the serious inconveniences and organic troubles which result from stricture, for every practitioner has had opportunities to observe them.

Bleorrhagia in women is extremely difficult to establish. It is very hard to discover the existence of a chronic urethritis in a prostitute, if she has taken care to remove the secretions immediately before examination, yet such an urethritis retains its capacity to infect for a long time. It should be sus-

pected whenever continuous pressure on the female urethra occasions the escape of even a small amount of muco-pus, for it has often seemed to me that even this slight degree of the affection was sufficient to communicate bleorrhagia to men. Moreover, it must be noted that whenever a woman has once been affected with contagious bleorrhagia she can communicate the infection by means of coitus for a very long time, a much longer period, indeed, than is the case with men.

The same thing occurs in affections of the neck of the uterus. When the secretions from the cervical canal are not clear, or when they do not remain clear in spite of excitation, the physician must be on his guard. Every expert recognizes that in this respect very few prostitutes are in favorable condition.

All these considerations show that a well-conducted medical examination is a most onerous undertaking, which demands practical knowledge, and which depends for its success on the discovery of the slightest trace of infection. It is hardly necessary to add that much time must not be permitted to elapse between the examinations. An examination every day would not be excessive.

I am well aware that these matters are not usually considered in this light, but when I relate the observations which I myself have been able to make, the reader must certainly acknowledge that the subject is commonly treated much too lightly.

Some years ago I went to Paris and to Brussels for the special purpose of studying this question as thoroughly as possible. These two cities had, at that time, the reputation of carrying out the method of official control and treatment of prostitutes in the best possible manner. I had opportunities to observe the examination of prostitutes at the *bureau des mœurs* in Paris and of following attentively the methods employed by the medical men. I was also present during the examinations at the public brothels, and I feel it right to say that a large number of women were examined in a manner so superficial that I was astonished. The inspection was limited, in general, to the genitalia, and consisted principally in a rapid view of the speculum. The examination of each woman did not occupy, altogether, more than two minutes. In Brussels the methods were somewhat more careful, but there also they were very far from irreproachable on the score of exactitude. I was also struck with the absence of the serious attention which should always accompany so grave an occasion. At the examination of the brothels, in particular, I noted that the demeanor of the physicians left much to be desired from the point of view of dignity. These observations, it is true, were made more than forty years ago, and matters may now be improved.

On returning from my tour of inspection, I made no delay in seeking an opportunity of applying the knowledge I had just acquired, and I was placed in charge of the examinations at The Hague.

I applied myself courageously to my task, with all the ardor of a young practitioner who sees a new career opening before him, and whose zeal is stimulated by the feeling that an important branch of public hygiene is committed to his care. There was, at that time, no opposition to the application of energetic measures. The authorities had but one object in view, and they had not yet perceived that regulation of prostitution might contain anything contrary to individual liberty. Even minors were subjected to examination. Prostitutes who presented themselves at the place appointed for the purpose were examined under my own eye by an attendant physician. I myself made examinations in the public houses at hours not made known beforehand. The entire person was inspected with the utmost care, and the slightest appearance suggestive of infection was made the subject of investigation.

And what were the results of these examinations, conducted, as they were, with the utmost severity? They were so far from satisfactory that at the end of several years I became convinced that I ought to ask to be relieved from an undertaking which was apparently entirely wanting in the usefulness to the public health expected from it in the beginning. How were these negative results to be explained? By the fact that a medical examination, no matter how carefully conducted, affords no guarantee whatever against contagion. In the course of my unexpected visits to brothels I was obliged to send some two-thirds of the women examined to hospitals, either because they were infected or because they were suspected of being so. And even then I was not secure of the remaining third, although they could not be retired, because it would have been dangerous to empty the public houses of debauch. Moreover, the severe measures which had been taken aroused the whole body of prostitutes to resistance, and I could not make my evening visit to the hospital without a po-

lice escort, so much reason was there to fear that the numerous anonymous threats addressed to me would be put into execution.

It should once more be noted that at this period the contagiousness of syphilis through the blood and secretions of a patient in the condylomatous stage was not yet demonstrated. A knowledge of this fact would have led me to withdraw a much larger number of suspected persons. It is now so well established that I would not be willing to accept the responsibility of giving a clean bill of health to anyone whom I had examined, in ignorance of her previous history. Security can be attained only by isolating the patient and keeping her under observation during a given time.

From all that has been said I feel myself justified in drawing the conclusion that such a thing as a safe public prostitute does not exist.

It may perhaps be urged that although compulsory examination does not withdraw all infected women, it is nevertheless a step in the right direction, for by isolating the more dangerous cases protection is afforded to many who would otherwise be infected. And it is claimed that, although regulation may not succeed in exterminating the evil growth, it at least prevents its multiplication to such an extent as to stifle useful plants. This reasoning has, perhaps, a certain plausibility, but it is of no value here. It is, of course, a fact that the number of men who avail themselves of prostitution increases considerably as soon as the public knows that it is under control. A great many men, who are kept away from brothels by fear of contagion, resort freely to them if this dread is removed, believing that they can profit by such a favorable opportunity with security. I saw clearly, when at The Hague, that the attendance at the public houses increased as soon as the report spread that I was in charge of the examinations. Therefore, the numbers only increased instead of diminishing, in consequence of the elimination of so many unsafe subjects. And yet, in spite of the minuteness with which the examinations were made, a certain number of persons who had remained abstinent up to that time contracted venereal disease.

All contagion which occurs in houses under the control of the authorities is a proof of the inadequacy of the system of sanitary examination; this places the gravest responsibility on those who institute compulsory examinations and those who conduct them.

Statistics have been called in to assist in showing that regulation has reduced the total number of sufferers from venereal disease. This point calls for some comment founded on facts. Speaking generally, statistics are a source of information as to the quantity of disease rather than its quality, and in this particular case the fact is especially true, for the two following reasons:

In the first place, statistics are not without reproach in the matter of nomenclature. The terms under which diseases are classified in statistical statements have no solid basis. A common tumor or a simple herpes which has undergone ulceration may very easily be diagnosed as a soft chancre, if it occurs on a suspicious part of the person. The same thing occurs with neglected erosions or ulcerated lupus. In how many cases of autoinoculation does it not happen that a recent diagnosis is demonstrated as false, although it has appeared in the statistics? How many times has the diagnosis of so-called specific induration characterizing an initial sclerosis been falsified, because the symptoms of constitutional syphilis did not appear within the usual limits? In regard to blennorrhagia also, the statistics are very uncertain. All persons affected with stricture of the urethra preserve during the remainder of life, in differing degrees, an irritability of the part of the canal just behind the stricture. With such patients a little investigation is sufficient to demonstrate a muco-purulent secretion, most frequently slight in amount. Such patients frequently experience a more abundant discharge in consequence of the superexcitation occasioned by coitus, and this is carefully noted as a fresh attack of blennorrhagia. Such blennorrhagias furnish a rich harvest to the compilers of statistics. They are noted under the head of venereal disease, where they produce a vivid impression and exaggerate the importance of the real centers of infection.

It may then be asked: Who are the patients who figure in statistical statements? Only those treated in public establishments and hospitals. The majority, who conceal their ailments, do not enter into statistical reports at all. This dissimulation of disease, which constitutes the principal obstacle to effective treatment, is the reason why no confidence can be placed in figures representing an increase or decrease of contagion.

There is no doubt, however, that medical examinations, even when conducted in a superficial manner, ought always to suppress some centers of infection. When public houses of debauchery are not under control, there will, very likely, be a greater number of infections among their habitués, and it is not impossible that statistics may represent these correctly. But what statistics do not represent is the number of unfortunate who contract disease in places which they are induced to visit through a misplaced confidence inspired by regulation. Statistics are also silent as to the number of persons who do not seek relief at public institutions.

It is, then, an unsettled question whether the victims of insufficient examinations do not rather incline the balance to the other side and really establish that regulation which increases the total number of cases of disease.

Beside the intrinsic difficulties of regulation which I have just enumerated, some attention must be given to the personal qualifications of the men in charge of this department of public hygiene. There is no doubt that they ought to occupy a high position, both morally and intellectually, yet it is only too certain that their social status is not an enviable one. The public in general forgets that they assume the responsibility of a most important service to the public health, and that they are entitled to universal esteem if they acquit themselves creditably of their duties. All these considerations occasion a legitimate doubt whether it is possible to find officials capable of conducting examinations in a conscientious manner; and we may also inquire whether municipalities are accustomed to offer medical men an honorarium sufficiently large to compensate them for the professional loss occasioned by the exercise of their office.

If all these points are taken into consideration, namely, the unavoidable inadequacy of examinations, even if repeated every day, the difficulty of procuring officials competent to conduct them, and the great expense involved in doing so, we are justified in condemning a system which presents so many objections against such extremely problematical advantages.

If it is conceded that the method at present in use is of no value, we must inquire whether there is any other way of preventing the evil done by prostitution to the public health. Assuredly, the abolition of compulsory examination will not in itself attain this end, especially if things are allowed to take their course in other respects. There will always remain a risk of contagion, not only for persons who allow themselves to be seduced by the opportunities afforded in public prostitution, but also for those victims who create such occasions indirectly through their own misconduct. It is necessary to go further and abolish completely the establishment of public resorts for debauchery, as well as all public prostitution. This is the surest means of destroying infectious centers. I am aware that such a proposition is likely to be greeted by loud outcries, so great is the dread of clandestine prostitution, and of the disastrous effects attributed to it on the public health. Clandestine prostitution has always been the great obstacle to the adjustment of this question of regulation. But have the facts been sufficiently examined? Is it really established that clandestine prostitution is as dangerous as it is supposed to be? For my own part I think we are at liberty to doubt. In order to answer the question it is essential to understand exactly what constitutes clandestine prostitution and what objections it presents in comparison with public prostitution.

Clandestine prostitution includes all women who sell themselves for purposes of debauchery, without, however, being at the service of all comers and at all times. For this very reason such a class of persons presents less danger to the public health. The clients, who are known to the prostitutes personally, prefer, for one reason or another, to have intercourse with a single woman, to whom they are often attached. If such a woman contracts disease, the client soon becomes aware of it, and he can protect himself against its extension.

With public prostitution, on the contrary, things are quite different. Women who practice it are at the disposition of every comer at any time; their houses are veritable dens of debauchery, where liquor is employed, as a matter of course, to destroy men's will power and drive them to commit irreparable sins. Lastly, does not observation teach us that venereal patients who present themselves at clinics or at public hospitals have most frequently contracted disease through frequenting public houses of prostitution? It is when they are overcome with liquor that these unfortunate lose all distrust, and do what they bitterly regret when they come to themselves. If there were not so many public temptations many of these men would escape such a fate. I could cite many more facts, taken from my own experience, in support of what I urge, but what I have already said seems to me sufficient to prove

that the suppression of public prostitution would, on the whole, be a benefit to public health.

If we wish to contend with this terrible class of diseases, it is above all necessary that venereal patients should have medical attendance at their disposal. The system in action up to the present time alienates these patients through fear of reprobation or of punishment, while it should, on the contrary, take into consideration only their sufferings and hold itself aloof from the misconduct which has occasioned them. The patient should no longer be withheld from seeking the necessary assistance by unwarrantable restrictions. Measures of relief should be distributed with a liberal hand. By these means positive results will be obtained of infinitely more service than the total uncertainty attending the system now in action, which I do not hesitate to oppose.

AMPUTATIONS BELOW THE KNEE.

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There is little in this subject of technical interest to the surgeon of to-day; it is such an old subject, its technic is so familiar and its performance so simple. Surgeons are looking for greater things, therefore the immediate result is about all they observe and but seldom stop to consider carefully the most important question relative to these amputations, the ultimate usefulness of the stump.

Having been called on three times during the past year to make leg amputations where the Chopart stump was so painful that use was impossible, having also noted the wide differences of opinion among surgeons and also among artificial limb makers, as to the value of these various amputations, I resolved to secure the opinion of the most practical and to compare notes.

I addressed circular letters to 100 surgeons and 35 limb makers, receiving reply from 96 surgeons and all of the latter. The following is a brief summary of these replies:

QUESTIONS ADDRESSED TO ONE HUNDRED SURGEONS.

1. "Where it is possible, would you advise the *Lisfranc* amputation or any of its modifications?"

Twenty-four answered "No," 4 answered "Yes" conditionally, and 63 "Yes," many of the latter indicating a preference for the Hey modification.

Of these amputations 364 were reported to me with slightly over 20 per cent. reported as "unsatisfactory" and 7 had sought amputation of the leg.

2. "Where it is possible, would you advise the *Chopart*, *Pirogoff*, *Symes* or any other amputation through the foot?"

(A) CHOPART: Fifty-seven answered "No," and 34 answered "Providing there is plenty of plantar tissue accessible, Yes."

Of 241 cases reported, over 73 per cent. were reported as "unsatisfactory," and 47 had sought amputations higher up.

(B) PIROGOFF: Sixty-six answered "No," and 22 answered "Yes."

Of 152 cases reported, nearly 61 per cent. were reported "unsatisfactory," and 18 had sought amputation of the leg.

(C) SYMES: Seventy-six answered "No," and only 9 answered "Yes."

Forty-three cases were reported with 9 "unsatisfactory," and 2 of these had sought amputation of the leg.

3. "Where the foot must come off, where would you elect to amputate?"

Seven answered "at ankle joint"; 14 "as low as possible"; 9 "three inches above ankle joint"; 16 "just above middle lower third"; 12 "junction of upper with middle third"; and 46 "junction of lower with middle third."

Fifty-eight of these surgeons reported having made over 1,200 amputations, the remainder had no available records.

QUESTIONS ADDRESSED TO THIRTY-FIVE LIMB MAKERS.

1. "Can artificial appliances be made useful in the *Lisfranc* amputation of the foot or its modifications?"

Twenty-six answered "Yes"; 4 answered "They can, but they are not always satisfactory, as patients frequently return complaining of pain and are unable to walk"; while 5 answered positively "No."

2. "Can artificial appliances be made useful, as to restoration of gait and usefulness of foot in amputations through the foot as in *Chopart*, *Pirogoff*, *Symes* and other methods?"

(A) CHOPART: Twenty-four answered "No," and 9 answered "Yes."

Many of those answering in the negative gave as their reasons that "Surgeons are not careful enough in making such amputations," and that "the scar is often adherent, not far enough back, and the stump is extended."

(B) PIROGOFF: Five answered "Yes, in selected cases," while 26 answered "No."

(C) SYMES: Twenty-two answered "Yes," and 9 answered "No, except in selected cases."

3. "If the foot must come off, where should the amputation be made?"

The universal answer was "from six to nine inches below knee, measuring from lower border of patella."

4. "What kind of flap makes the best stump for fitting an artificial limb?"

Nearly all of them answered "Long anterior with short posterior, bringing the scar well back with loose normal skin covering end of bone."

Sad differences of opinion are at once seen. Surgeons differing with each other and limb makers with each other, and the one class differing with the other on many vital points. This is especially noticeable concerning the Symes amputation, where 76 surgeons advise against the operation, with 9 in favor of it, while 21 limb makers favor the resulting stump, to 9 who do not, except in selected cases.

As surgeons, we must recognize the wide experience and ability of our best artificial limb manufacturers. They see the patient many times after we have lost sight of him; in fact, he is forever haunting them with all his misfortune. The question that should engage our serious consideration is: Where and how shall we amputate? considering carefully the future comfort, physical requirements and the possibilities of our patient.

Dr. Fred Murphy of Boston, after making his "Study of Amputations of the Lower Extremity," says: "In going over this subject exhaustively, I found that surgeons themselves had very little idea of the after results in these cases." He also says: "Before my investigation I was enthusiastic as to the value of partial amputations of the foot, but after seeing and talking with the patients I was forced to believe, that as a routine, there is nothing so satisfactory as a good tibial stump of medium length." Again he says: "The makers of artificial limbs tell fine stories about the apparatus that they can fit to these partial amputations, but with very few exceptions they have, in my experience, proved to be most unsatisfactory."

The prevailing complaints among the limb makers against the partial amputations of the foot are "weak supporting arch," "extension of stump," and "insufficient flap and faulty position of scar, which is often adherent and tender."

The old theory of saving all that you can, applied to amputations below the knee, is certainly very absurd, and no intelligent surgeon of to-day would give it even a passing thought.

I believe that no partial amputation of the foot should be made which does not afford sufficient plantar bearing surface to carry the entire weight of the body, with

ample flap to form loose covering over end stump and to bring scar well back out of line of pressure. I believe that an ideal leg amputation is superior to many Chopart or Symes and most Pirrogoff amputations. The Lisfranc, especially the Hey modification, gives a very satisfactory stump. I wish to suggest, however, that in making this amputation, it is wise to preserve the attachment of the tibialis anticus, when possible, and if not, to attach its tendons to the plantar flap. This same rule applies also to the peroneus tertius.

In making amputations of the leg, there are a few important details which we should not lose sight of:

1. Be certain of sufficient flap to properly cover end of bone, regardless of how close this may come to the knee joint. Flap must be considered first, length of stump second.

2. The most uniform good results are obtained by making the long anterior with short posterior flap, bringing the scar well away from end of stump.

3. Redundancy is always undesirable.

4. When the length of stump is at the discretion of the operator, it should be from six to nine inches below lower border of patella.

5. Periosteal flap with coaptation of muscles over end of bone is always desirable.

6. Always cut the fibula one inch shorter than the tibia and when the amputation is near the knee joint, disarticulate and remove the fibula.

7. In all these amputations, nerves should be drawn out and cut as short as possible.

THE EVILS OF PROPRIETARY MEDICINES.*

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Many preparations are passed off on our profession by apparently reliable manufacturing houses as ethical proprietary preparations or as definite, synthetical compounds that are not only simple nostrums, but some may be classed as base deceptions. The unsuspicious physician is victimized by these deceptions, is misled by their advertising literature termed "modern therapeutics," and prescribes for his trusting patients these advertised remedies, which are high in price and of whose composition he is either partly or wholly ignorant.

The nostrum evil flourishes more in this country than in any other. To classify the many proprietary preparations, to sift the true from the false, the really ethical from the nostrum, is a difficult matter.

Some medicines are patented, which protects the patentee for seventeen years, but these are not secret, because from the patent office anyone can obtain the description, composition and the method of manufacture. The patent serves simply to increase the cost to the consumer by giving one manufacturer the exclusive right to manufacture the article.

According to the dictionary, a nostrum is "a medicine, the ingredients of which are kept secret for the purpose of restricting profits of sale to the inventor or proprietor; a quack medicine." In this pernicious class are those preparations that are protected by trademark or copyrighted name, and the composition of which is either kept absolutely secret, or there is a pretense of a formula. This secrecy or semi-secrecy is really considered of little moment by the manufacturer, who lays his main stress on expounding the indications

for the use of the remedy in a long list of symptoms and ailments which are equally legible to the uneducated and educated in medical matters.

There are two kinds of nostrums and there is no difference between them technically—the secret proprietary preparations manufactured for physicians and advertised lavishly in the medical press, and the common "patent medicines" advertised in the public press. On the one hand the indications for use are couched in medical language, as "Dioiburnia," or "Hayden's Viburnum Compound is the most beneficial remedy known to medical science for dysmenorrhea," etc.; and on the other hand, the wonderful usefulness of the recent marvelous discovery is explained in the language of the public as "Lydia E. Pinkham's Vegetable Compound absolutely cures painful monthly periods and elevates a fallen womb."

The physician abhors the patent medicine evil; yet he reads the literature of the proprietary manufacturers, exploiting their wares, and follows their directions in prescribing to his trusting patients. He is simply being used as a middle-man to distribute these "cure-alls" to the public in general. He is paving the way for ultimate counter-prescribing and ultimate self-medication.

It is difficult to understand why we call medicines and preparations that are advertised in newspapers "patent medicines," and those that are advertised in medical journals "proprietary" or "ethical," when the claims of the two are so much alike and the degree of secrecy equal. The layman can naturally accuse the physician of making a distinction without a difference. Some are so bold and brazen as to make no attempt to tell what the nostrum is, whether it is some real drug or nothing but dirt and syrup. Others make a pretense of giving a formula, with or without amounts. They may give the true formula or simply "a formula" or no formula whatever—not for the benefit of the prescribing physician, but to make the article more easily salable through the medical profession and more profitable to themselves. A favorite and successful method is to give a list of ten or twelve drugs, about two of which are common ones of definite known value that we all use, and the others inert, useless ones with high-sounding and unfamiliar names—the latter serving as a cloak for the formula and giving the impression of some great and potent mixture, "the result of years of medical research." The most dangerous of evils lurk in such deceptions.

A manufacturer of drugs in general and nostrums on the side, as so-called specialties, who uses such methods may justly be the subject of suspicion in all his products. Matters of truth, veracity, honesty and efficiency are of little importance. The sole aim of such manufacturers is to make a product salable and as profitable to themselves as possible. An illustration of their veracity and reliability can be gained by a quotation from THE JOURNAL of the American Medical Association of a recent incident:

A firm which had been making a proprietary tablet for years had published a certain formula; recently they changed this by adding eight grains of another drug. The pharmacist in question made inquiries of several chemists about this drug and they all assured him that they had never heard of it. He then wrote to the manufacturers of the tablet, asking them if they had changed the ingredients of their preparation, and they made the following reply: "We have not changed the tablet—we only changed the published formula." We wonder how often the opposite is true, that the published formula remains as it was while the ingredients are changed.

* Read before the Eastern Hospital Graduates Club and the Lane County Medical Society.

Most nostrums of any value depend on some common drug familiar to us all and which we could use readily ourselves in prescription compounding, and the unwary physician is captured by the long named extra drugs added, for which wonderful powers are claimed, but which really are inert, or at most, unimportant in their actions.

Let me quote an illustration given by H. C. Wood, Jr.:

Let me call attention to one other example of this effort to confuse the unwary, the simplicity of which is really laughable. A very extensively advertised drug, hailing like other orthodox fakes from St. Louis, is said to be "a palatable preparation of *Panax schinseng*." *Panax* is the botanical name for the popular Chinese remedy ginseng, whose therapeutic value is about equivalent to that of licorice root. If you want licorice, order extractum glycyrrhizæ.

The bombastic descriptions which the vendors furnish of their strictly original methods of manufacture, dwelling in flights of ambiguous verbosity regarding the special action of enzymes and the special processes of metabolism, etc., of their remarkable products is at once unintelligible and misleading to the general practitioner. Only an expert, conversant in the recent vocabulary of the theories of immunity, etc., can discern the little truth in some of the descriptions and the deceptions of most of them. Meanwhile the vendor revels in the profits of the sale of his wares and laughs in secret—and sometimes openly—at the simple credulity of educated men whom he can so easily dupe.

A Scotchman once said that he had been taught that there were five senses—seeing, smelling, etc., but he knew that there was a "sixth sense," called common sense, and many people, both educated and uneducated, do not have it.

In extolling the high characters of their products the manufacturers frequently speak of the thousands of dollars spent in perfecting this or that remarkable remedy. But, we may ask, did they have an opportunity of trying it on patients? The money may have been spent, but the "perfecting" has been the "perfecting" of the business side by the suborning of journals, by printing attractive literature, and by hiring detail men to go around and leave samples and make long "spiels" like a vendor on the Portland Trail or the St. Louis Pike.

The manufacturers of proprietary preparations are banded together in the Proprietary Association of America and have appointed a very active press committee. They realize that it will mean to them the loss of millions if the medical profession and the laity are given the light of publicity on their work and their methods, and, in the case of the former, if each doctor is educated to write his own prescriptions. They have exerted every method of vigilance possible and have endeavored to flank every move that has been made toward publicity. Their subsidized medical journals (and this includes about half the medical journals in this country) have suppressed the exposures of the coal-tar products, as made in the report of the Council on Pharmacy and Chemistry of the American Medical Association, and have been able to bring to bear sufficient influence to induce some of these journals to take their side editorially.

Early last winter an editorial appeared in the *Vermont Monthly Magazine* advocating the use of secret remedies, and this article was widely distributed throughout the country by the nostrum proprietors. And this magazine is the official organ of the Vermont State Medical Society.¹

After the exposures of the composition of phenalgin by the council of the American Medical Association the company manufacturing this article had a two-page advertisement for two issues in the *New York Medical Record* denying the fact that their product was a simple mixture of acetanilid, sodium bicarbonate and ammonium carbonate, as shown by the Council on Pharmacy, and indirectly still claimed it to be a definite synthetic chemical substance, and, furthermore, went on to slur the said council and its work and the American Medical Association in general. THE JOURNAL of the American Medical Association wrote to the editor of the *Medical Record*, calling his attention to these insults in its advertising pages, to which Dr. Thomas L. Stedman, the editor, replied that the editorial pages of his journal and the advertising pages are "separate and distinct."

Through the above report the profession was long ago informed of the composition of ammonol. Yet a few days ago I received samples and the usual literature (which allowance was doubtless sent at the same time to every physician in the country) of ammonol—"stimulant"—"ethical"; "the only antipyretic and analgesic that not only does not depress, but actually sustains the patient." "The administration of ammonol in typhoid is imperative, not merely because it is invaluable to reduce the temperature, but because it is antiseptic and has a decided action on the digestive tract."

Not many physicians would prescribe acetanilid in typhoid, and yet, beguiled by the deceptive description of a nostrum, will prescribe contrary to their own judgment.

According to the advertisement, "salacatin is a combination with heat of salicylic and glacial acetic acids with phenylamine, the irritating, depressing and blood corpuscle destroying elements removed."

According to the committee of the American Medical Association, "Salacatin" is a mixture of acetanilid, salicylate of sodium and bicarbonate of sodium. Sal-co-deia-Bell (Salacatin-codein), therefore, would be the same as the above with codein added.

This shows that their claims, to the effect that salacatin is a definite compound, are false, and that it is a simple, common, ordinary mixture.

A sample of the similarity between "patent" and "proprietary" medicines may be gleaned from the policy of the company which exploits "Kutnow's Powder." In England it appears to be advertised in the daily papers as peruna is in America, with recommendations of various celebrities, even to physicians. In the United States it is advanced as a "proprietary" medicine and is handed out to the public through the agency of the medical profession. In the English dailies numerous testimonials appear from American doctors, and its claims are just as extravagant as are those of any other extensively advertised "patent medicine." The analysis of it shows it is simply an artificial Carlsbad salts.

Recently an analysis of a cod-liver oil preparation was made by some chemists, who reported on it as follows:

We recently had occasion to open a package of a well-known preparation of "Tasteless Cod Liver Oil." The circular which was wrapped around the bottle was replete with interesting information, especially for the patient, who obtains the preparation in the original package as prescribed by the physician. He finds in it a list of the diseases in which the preparation does wonders; they range from dread consumption to cystitis and hemorrhage of the kidney. Most interesting to us, however, is the statement that the compound "contains all the necessary elements of nutrition." It is too bad to disturb this beautiful vision by a report of the chemist. This shows that the product is quite free from oil or proteids; the only nutri-

1. Since the above was written, the Vermont Medical Journal has evidently gotten into new hands, and is now standing for better things.

tive ingredients are perhaps alcohol, sugar and glycerin. But the claims of the manufacturer are probably correct, because it contains carbon, hydrogen, oxygen and probably a trace of nitrogen—so does gunpowder. Perhaps it will now be the turn of strychnin to be advertised as the ideal food. It seems superfluous to point out the moral of this tale.

The most extravagant claims are made regarding the clay mixtures. The circulars pronounce them practically cure-alls for all ailments from inflammation of the pelvic organs to tuberculosis. Their claims are largely without foundation, and as a poultice they do not come up in efficiency to the common flaxseed meal. The clay is absolutely inert from a therapeutic standpoint. The essential oils and antiseptics are combined in such infinitesimally small proportions as to be of no value. The anhydrous glycerin, as we all know, has a hygroscopic action, and herein lies the small and only virtue of these clay poultices.

Dr. Roth of Anu Arbor has conducted experiments with the clay mixtures in regard to their heat-retaining powers, one of which I will quote herein in detail:

Two one-pound cans were taken, one filled with the clay mixture and the other with flaxseed poultice. Both were heated to 80 degrees C. They were now placed side by side so that all conditions were equal and the temperature taken every hour to determine which gave up its heat the sooner.

| | Clay mixture. | Flaxseed poultice. |
|--------------------|---------------|--------------------|
| | 80 C. | 80 C. |
| After 1 hour..... | 40 | 55 |
| After 3 hours..... | 21 | 27.5 |

The clay mixture gave up its heat in three hours, at the end of that time being at the room temperature of 21 degrees C., while the flaxseed mixture at this time still had a temperature of 27.5 degrees C. It is evident, then, that by means of a flaxseed poultice heat and moisture can be applied for a longer period than by means of the clay mixture, and this fact stamps the flaxseed poultice as more efficient than the clay mixture.

One of the most smooth nostrums and one which on the surface is apparently ethical, but yet which is revealed by analysis to be one of the most rank, advocates (as does peruna) a cure for catarrh (that great catch word) of any part of the body.

There is no pretense of any frankness whatsoever as to its composition. Its price rivals that of holy water, yet the water in it (of which it is composed with a very little glycerin and coloring matter and some of the common, well-known alkaline salts) is only common well or river water, whose only magic is that it comes from New York. Why should we pay a dollar a pound for a nostrum about which we know nothing and prescribe it under a trade name that will soon become common property and indefinitely add riches to the coffers of a shrewd manufacturing company, when we can really compound a superior mixture for the large sum of one and one-half cents? We should not debase our own intelligent prescribing by acting as a middle-man for the sale of some peddler's wares, inferior in quality and exorbitant in price.

By taking nine of those tablets called the "alkaline and antiseptic nasal tablets," made according to the formula of Seiler, and nine drams of glycerin and sixteen ounces of ordinary good water practically the same thing is secured, minus a little coloring matter, which it is really well to omit. The strength of this can be readily and easily increased or decreased by adding or lessening the number of tablets. To make it look sensational one may add some coloring and then cut out a well-known picture and paste it on the bottle; the picture of a lovely lady pouring some of this delightful potion from a gracefully-shaped glass container into the cavity of her aquiline nose.

Another prescription, efficacious, handy and useful, might be written thus (and it can be changed at will to suit the individual requirements of each particular case):

| | | |
|----------------------------|----------|--------|
| R. Thymol | gr. i-ii | 107-13 |
| Sodii bicarb..... | 5ss | 15 |
| Sodii salicylat..... | 3ii | 8 |
| Sod. biborat. (borat)..... | 5iss | 45 |

Sig.: Teaspoonful (more or less as sensitiveness of mucous membrane indicates), dissolve in one-half cup warm water, and use as a nasal douche or throat gargle.

In regard to this "great discovery," physicians will after a time awaken to its nostrum deception and cast it off along the lines I have suggested. But meanwhile the company will have become enriched financially and will have gathered in thousands of testimonials of unwary physicians, and then will begin an ordinary peruna public record with the laity.

In Porto Rico a commission was appointed to investigate the disease known as uncinariaria and to report the results of treatment of same. They reported a long series of cases of anemia from uncinariaria and the results of their treatment with three different iron preparations, Bland's pills, Vallet's mass and Gude's pepto-mangan, the latter being furnished them by the exploiters, M. J. Breitenbach Co. The commission reported that the patients improved the fastest on the Bland's pills, the next on Vallet's mass, and the slowest improvement was those on whom pepto-mangan was used. In fact, four of the eighteen cases which were treated with pepto-mangan had improved so slowly that they were finally put on Bland's pills.

The commission informed the pepto-mangan people of the result of their investigations, and yet, in the face of this report, the company published a long article and circulated it among the profession of the country, stating the work of the commission, that they had found pepto-mangan superior to all iron preparations tried, and that this convincing proof should influence all medical men to use this valuable remedy in all of their cases of anemia.

In conclusion, let us consider first the causes of this deplorable condition to which the therapeutic standard of our profession has been lowered by the commercialism and vandalism of selfish "shell game" proprietary manufacturers.

Doctors are only American people, and a scanty, hastily acquired medical education still leaves them Americans, of whom a good judge of human nature once said, "they love to be duped." Their thoughtlessness and lack of therapeutic knowledge make them ready victims for the shrewd and persistent advertising of the master of that wily art, the nostrum man. The deplorable condition referred to is brought about in the first place through the agency of the subsidized medical press, which gives up not only its advertising pages, but half its reading matter for the love of gold, and publishes what the editors must know is false and fakish; by means of attractive literature and alluring testimonials; through the agency of suave detail men with samples and urgent requests to "try our products"—each bunch of samples covering the necessities of most all diseases.

The doctors, too, are at fault; their ignorance of pharmacy and prescription writing is the crux of the matter—we might say their judgment and discernment are deficient. The blame for this may be laid to deficient teaching of therapeutics in the medical college. The mental apathy of the average physician along therapeutic lines, his lack of discernment and blind faith in

the assertions of commercial firms who have something to sell him are some of the greatest causes.

The remedy—it must be directed in two directions. The light of publicity must be cast on this nefarious practice, so that every physician, high and low, can see its details in the full glare of the limelight. And an influence must be exerted on the medical press to discontinue its fake and "patent medicine" advertising.

The better class of physicians in this country are the "doctors in charge of this case." The burden of responsibility rests with them.

PRELIMINARY STEPS IN THE INVESTIGATION OF GASTRIC FUNCTIONS.*

B. ONUF (ONUFROWICZ), M.D.

SONYEA, N. Y.

In making preparations for the investigation of the gastric functions of epileptics, particularly in idiopathic epilepsy, for which the Craig Colony for Epileptics seemed to offer a favorable field, worthy of careful and intelligent investigation, the fact appeared that the methods in vogue were not commensurate to scientific needs, as they do not offer that degree of exactness which would recognize beyond all doubt deviations from the normal, if such were not present in a very marked degree.

So many points have to be considered before conclusions regarding one special point can be made that if accuracy of method and analytic discrimination are not introduced in this field of research, results must necessarily be of such a vague character as not to allow any definite conclusions. This fact impressed the writer particularly in taking up the chemopathology of gastric secretion. It seemed absolutely necessary first to establish standards by means of which the components of the gastric juice could be quantitatively determined.

For the quantitative determination of the acids and acid salts of the gastric contents such standards have been established, but those used by the clinician at large are yet far from being unassailable.

So-called indicators are made use of for the quantitative discrimination, as one might say, of the different acidities. But anyone who studies the question a little, easily perceives how uncertain the discrimination thus obtained really is. To take an example: The quantitative determination of free hydrochloric acid is based on the fact that even slight concentrations of hydrochloric acid assume a dark pink color by the addition of one or two drops of dimethyl-amido-benzol, while solutions of organic acids, in order to produce the same color reaction, have to be present in such concentrations, as they are never found in gastric contents. Granting this to be the case, the problem might be simple enough if either free hydrochloric acid alone or organic acid (using this term in a comprehensive sense) alone were present. But in case of simultaneous presence of the two, the question naturally arises whether or not, and in what way, the organic acid may influence the reaction for the free hydrochloric acid.

Preliminary experiments have shown me that the organic acid undoubtedly does influence the reaction, if present in considerable quantity. It makes it much less definite, so that instead of a sudden reversal of color, taking place at the moment of neutralization, we ob-

tain a very gradual change of color which makes it impossible to define when neutralization has occurred. What will take place if only small quantities of the organic acids are present, and whether in such a case the result of titration by an alkali—with dimethyl-amido-azo-benzol as an indicator—will denote solely the acidity due to the free hydrochloric acid; or whether, on the contrary, it will indicate the sum of the acidities of the free hydrochloric and the organic acids. I have not investigated yet; but certainly this point needs elucidation and it is peculiar that more attention has not been paid to it.

Greater still are the difficulties to contend against when we attempt to determine the amount of pepsin present in the stomach contents. There are, to my knowledge, no chemical reactions by which this can be done, except by testing the digestive power of the gastric contents. We know, however, that the digestive faculty of pepsin unfolds itself only in the presence of hydrochloric or some other acid and that this acid must have a given concentration, varying for different foodstuffs, in order to develop the digestive power of the pepsin at its best.

Aside from others, three conditions, therefore, seem to be required for accurate tests:

1. A pepsin solution of standard strength for control tests.
2. Acidification of this pepsin solution by hydrochloric acid in definite proportion.
3. Bringing the hydrochloric acid percentage of the stomach contents under examination up or down to the same, or approximately the same, strength as that of the control mixture.

The control mixture of pepsin and hydrochloric acid must be made fresh before use, as the pepsin soon deteriorates in solution.

A further difficulty is that of always obtaining a pepsin of the same composition. This, I understand, is practically impossible, so that even the most reliable products or brands of this ferment are subject to some variation. Therefore the only way that seems open is to begin with a definite brand of pepsin, combine it with hydrochloric acid of definite strength, and test the digestive power of this control digestive fluid on albumin and eventually on casein, meat, gelatin and other foodstuffs. To do this successfully, i. e., to obtain reliable results, the foodstuffs mentioned will have to be standardized. One attribute of this standardization will have to be homogeneity of the foodstuff to be used as a standard. The white of an egg, for instance, shows such differences of density in its different parts that only a thorough redistribution would seem to make it fit for tests. The method I adopted for this purpose was to dry the white of an egg, pound it to a fine powder, redissolve it in distilled water, and either filter or centrifuge it. The latter process is quicker and more simple. After about five minutes' action of a water centrifuge, the redissolved white of egg is found to show three layers, one narrow upper foamy zone, one wide middle layer of clear fluid free of air bubbles, and a considerably less wide zone of sediment. Only the middle layer of clear fluid is used, by drawing it off with a pipette. Measurement of the volume of the unaltered, i. e., original, white of egg, and weighing of the same after drying, showed that the white of egg represents a solution of the dry albumin of about 12 per cent. strength. Such an artificial or disorganized white of egg of the same strength as the natural white of

* This article was prepared to be read before the Section on Pathology and Physiology of the American Medical Association at the Portland Session, July, 1905, but the author was unable to be present. It embodies work done at the Pathological Laboratory of the Craig Colony for Epileptics, Sonyea, N. Y.

egg, if prepared by using only the clear zone in the centrifuge fluid, showed some interesting physical qualities. On being coagulated by heat, it assumed a beautiful opalescence, being quite transparent in thin layers and of a jelly-like consistency. Of another peculiarity of such an albumin I shall have opportunity to speak later.

Having thus established a homogeneous test material as demonstrated for egg albumin, the next step is to test its relative quality by digestion tests. Practically the problem might be accomplished in the following manner: Note is taken of the particular "lot" of pepsin used for the control digestive fluid and also of the particular "lot" of albumin used in the control test. The first bottle of the dry pepsin used, be it an ounce or a quarter of a pound or another quantity, is called, Pepsin, Lot 1. A small amount of this is mixed with hydrochloric acid and water in the proportions found most suitable for the control digestive fluid. The digestive power of the latter is then tested on egg albumin Lot 1 dissolved in water in such or such percentage. By Dried White of Egg, Lot 1, is designated all the white of egg dried on a given date, say April 1, 1905, pulverized and well shaken, so as to give a uniform composition of the entire quantity dried at the time. The next lot prepared, say June 3, is designated as Dried White of Egg, Lot 2.

By testing pepsin, Lot 1, on white of egg, Lot 1, and then on white of egg, Lot 2, the following important result will be reached: 1. Either the digestive result is the same, i. e., the control digestive fluid prepared with pepsin, Lot 1, digests under equal conditions the same quantity of dried white of egg, Lot 2. This would be the most desirable outcome, as then the two lots of dried white of egg can be used indiscriminately for all digestion tests. 2. Or the digested quantities of the two white of egg lots are not the same. In the latter case the difference may be one of density only, or one of composition. If of composition, the problem would become a complicated one; but if, on the other hand, the difference was one of density only, the establishment of certain digestion laws may help us out.

If we study the effect of a given control digestive fluid, say on a 16 per cent. solution of dried white of egg and then again on solutions of the same white of egg but of a different percentage, the digestive effect obtained on these different concentrations ought to enable us to discover the laws which govern the digestive effect on the different concentrations of albumin; and the knowledge of such a law would, vice versa, enable us to infer the concentration of the dried white of egg from the digestive effect. In this manner, by mathematical calculation, the digestive effect of pepsin Lot 1 on white of egg Lot 2 could be substituted by the digestive effect of pepsin Lot 1 on white of egg Lot 1, or vice versa.

The next problem arising from this is a comparison of pepsin, Lots 2, 3, 4, etc., with pepsin Lot 1. This comparison has to occur through the intermediary of digestive tests on the white of egg lots; and proper interpretation of the ventual differences in the digestive powers of these various pepsins necessitates again the knowledge of physical laws. This certainly makes the problem a very complex one. But, as already mentioned, it is practically impossible to manufacture a pepsin of always uniform composition and digestive power. We have, therefore, practically no means of quantitatively determining the pepsin except by digestive tests, which again makes the study of the laws

above discussed very desirable, if not imperative. Encouraged by some results to be reported below, I intend taking up this study.

Our troubles, however, do not end here. In beginning digestion tests with pepsin on albumin, the selection of a reliable method presented itself. The choice finally fell on one promising the greatest accuracy. It was the method long in use by the school of Pawlow, and introduced, so far as I understand, by Dr. Mett, one of Pawlow's pupils. The principle of it is to fill glass tubes of an inner caliber of from 1 to 2 mm. with albumin from the white of egg and coagulating this albumin by heat. Tubes thus prepared, of a length of from 2 to 3 cm. or as much longer as may be desirable under given circumstances, are put into the digestive fluid to be tested and subjected to its action for ten hours at a temperature, preferably of 37 C. The length of the digested column is then read off by means of a scale.¹ The tubes are known under the name of Mett tubes, which name, for brevity, shall be made use of in this paper.

Pawlow's school was fully aware of the necessity of establishing the law governing the length of the digested column before the result of the tests could be utilized. It was, indeed, discovered by these authors and sounds as follows:²

The digestive powers of the juices tested are in direct proportion to the squares of the distances digested by them.

Pawlow and his pupils further found that the digestion of the albumin in the tubes progressed at a regular rate, so that the distance digested in the first hour in the incubator is just as long as that digested in the second hour, etc. This makes the method of the Mett tubes a very accurate one, if properly applied. The *sine qua non* conditions for its accurate workings are homogeneity of the albumin, absence of air bubbles, and even coagulation and close contact of the coagulated albumin with the wall of the tube.

The first two points offered considerable obstacles. The drying and pulverizing of the white of egg, however, removed the first obstacle, securing the desired homogeneity, while the centrifuge disposed of the second one—the air bubbles—very effectively in a few minutes, so that it became unnecessary to clear the dissolved albumin of air bubbles by standing, a method which, in view of the risk of decomposition, would be very objectionable. However, new gas bubbles may arise during the coagulation by heat from evaporation of the water of the albumin solution, if the heating is continued too long.

The third condition, even coagulation, is rather easily obtainable. Test tubes are stocked with empty Mett tubes 2 to 3 to 5 cm. long. Then the albumin is allowed to flow into the test tube while slanting the latter. Subsequently the test tube, firmly stoppered, is immersed in boiling water on a slight slant, preferably resting it on a layer of absorbent cotton so as to prevent too much heat communicating itself from the bottom. After the entire mass has turned opalescent white, it is good to leave it in for about a minute longer. By

1. I used the following means of measurement: A scale was drawn, the units of which were $\frac{2}{3}$ mm. This scale was photographed with a reduction to $\frac{1}{10}$. From the negative a positive was taken and the scale contained on the latter was covered with a microscopic cover glass, fastened to it by means of xylodamar. The scale thus obtained had $\frac{1}{4}$ mm. for units, which, by means of a dissection microscope, could easily be read off. Indeed, even $\frac{1}{8}$ mm. could be measured.

2. If I have not rendered the exact wording of the law, I feel certain that the sense is as here given.

leaving it in too long, one risks the formation of steam bubbles by evaporation of the water of the albumin solution.

The fourth point, close contact of the coagulum to the tubes, may be obtained by washing and, of course, drying, the Mett tubes well before use. A shrinkage of the coagulum from the wall can thus be avoided with albumin solution of the strength of a natural white of egg. In using weaker concentrations a retraction was to be feared. My experience has been, however, that with all the concentrations that could be made to coagulate in one mass, no retraction took place. If, however, casein was used instead of white of egg, i. e., if milk was made to curdle by adding rennin, the coagulum formed retracted to a thin thread.

The next step is to cut the Mett tubes out, making the cuts as sharp as possible at the ends. They are then preserved in vaselin which, although somewhat disagreeable to handle, effectively prevents evaporation and apparently also decomposition of the albumin.

After obviating thus the difficulties enumerated, additional evidence of the reliability, i. e., homogeneity of the test material, can be obtained by placing the Mett tubes horizontally in the digestive fluid used for the test. If the coagulated albumin is homogeneous, the digestion will take place at both ends at exactly the same rate.

CONCENTRATION OF THE TEST MATERIAL TO BE DIGESTED.

Next in order of consideration is the concentration of the test material on which the digestive powers of the artificial control juice or actual juice are used. It has been mentioned that in the original, i. e., natural, white of egg, the albumin or albuminous substances are present in a solution about 12 per cent. strong. It would, therefore, seem most natural to conduct the digestion tests with a 12 per cent. solution of the dried white of egg. Indeed, Pawlow and his pupils, if I am rightly informed, have used the natural white of egg altogether. But we must not forget that their digestion tests were made with pure juice, as is the case in clinical tests. While, therefore, owing to the high concentration of the juice, the digested column in their experiments was long, reaching in some instances the length of $8\frac{1}{2}$ mm. in ten hours at body temperature, the figures obtained by myself with human gastric juice within twenty-four hours, also at body temperature, were 4 to 5 mm. only, or thereabouts. With such small figures it seemed hopeless to obtain accurate comparisons, and it seemed imperative to dilute the albumin to such a degree that the figures would be large enough to show deviations from the normal.

To what extent this may prove feasible, I can not say as yet. For the present, the fact is to be registered that an 8 per cent. concentration of the dried albumin can still be made to coagulate by heat, while a 6 per cent. solution remains liquid no matter how long heated; so that by this fact a limit is put to further successful dilution, if not otherwise modified. However, an 8 per cent. solution is so much more quickly digested than a 12 per cent. solution that the hope of its furnishing a test material complying with scientific requirements seems justified. But a proper utilization of the results of tests applied to the diluted 8 per cent. white of egg can be attained only by knowledge of the digestion law above mentioned, i. e., the law governing the digestion of different concentrations or densities of one and the same substance. The necessity of the knowledge of such a law applies also to other foodstuffs, such as starch, casein, gelatin, etc.

But, as already pointed out, casein, even if undiluted, does not fulfill the requirements of the successful application of the Mett tube method for digestion tests, since even in the undiluted milk the curdle formed by the action of rennin shrinks away from the wall of the Mett tube. Similarly starch, if in too weak concentration, does not solidify by heat; and in concentrations in which it is well solidified by heat, the digestion by saliva or even by strong diastase of malt, is so slow that one has again to contend with the objectionable feature of small figures which make it impossible to register slight deviations from the normal.

To obviate this obstacle, the idea occurred of distributing the test material over a carrier or vehicle, to which it is to be added in a liquid state, and then allow it to become solid by heat or other coagulating procedures—such as rennin for casein—allowing subsequently the carriers to become solid by cooling. The requirements that have to be put to such a vehicle are that it permit free penetration, that it be not digested, or very slowly digested, much slower than the test material carried by it, and that in such case the rate of its digestion be exactly known. The outcome of my study of the penetration laws thus necessitated is here given.

PENETRATION LAWS.

After having first selected a substance which seemed suitable for a vehicle, penetration experiments were first made with this substance without at first using it as a carrier for material that was to be digested. The choice fell on agar as a medium to be penetrated, but coagulated albumin was used also in the same rôle for some of the experiments. The penetrating fluid selected as a first choice was, naturally, hydrochloric acid, in view of its being a normal constituent of the gastric juice.

I shall first enumerate the laws so far established for the penetration of hydrochloric acid with relation to agar and then relate how they were found. To what extent they may prove applicable also to other penetrating substances and to other media to be penetrated, I am not prepared to say. But in a number of experiments the first-named law was found to hold true also for the penetration of hydrochloric acid (in solution of 2 per mille.) through homogeneous coagulated egg albumin.

1. The velocity of penetration is in direct proportion to the square of the distances penetrated. This law may eventually find its limitations by high or very low concentration of the acid, perhaps also of the agar. It so far was found to hold true for concentrations of from $\frac{1}{4}$ per mille. to 8 per mille. of hydrochloric acid and of from $\frac{1}{2}$ to 2 per cent. of the agar.

2. The concentration of the agar within the limits so far investigated has a relatively very slight influence on the velocity of penetration. A 2 per cent. agar is almost as quickly penetrated as a $\frac{1}{2}$ per cent. agar.

3. Within certain limits the square roots of the concentrations of the penetrating hydrochloric acid (also of other acids?) are in direct proportion to the squares of the distances penetrated by them in the same time. To concentrations above 3 or 4 per mille, and possibly below $\frac{1}{4}$ per mille, of the acid this law does not apply.

3. Very slight. In a former publication on "The Feasibility and Value of Accurate Methods in Clinical Investigations," Monthly *Cyclopedia of Practical Medicine*, vol. viii, p. 289, I had stated that the concentration of the agar within certain limits had no influence on the velocity of penetration. Further experiments with longer exposure, i. e., greater time periods, and correspondingly larger figures, have forced me slightly to modify the statement as above.

METHODS BY WHICH THE PENETRATION LAWS WERE ESTABLISHED.

It may be of some interest to give the evolution of the methods which led to the discovery of the laws above defined.

The fundamental fact had first to be established whether the fluids penetrated to any depth and in a reasonable time in the medium to be penetrated. For this purpose one of the reactions used for the determination of hydrochloric acid in gastric analysis was utilized, the dimethyl-amido-azo-benzol. Solutions of this compound, if made acid by hydrochloric acid, assume a deep pink color; if neutral or alkaline, a canary yellow, or (if stronger solutions of the dimethyl-amido-azo-benzol are used), orange color. The following experiment was first made:

A small grain of dimethyl-amido-azo-benzol powder was dipped into a thick celloidin solution and then fished out again with the celloidin surrounding it. This celloidin coating was allowed to dry, and the pearl thus formed was dipped into a weak solution of hydrochloric acid. The orange-colored coating at once turned pink. A new pearl was then made and inserted into a glass tube 3 cm. long and of an inner diameter of 2 mm. This glass tube was then put into a dish filled with 2 per cent. melted agar, allowing the latter to stream in, taking care to leave the pearl in position about the middle of the tube. Subsequently the agar was allowed to cool off until solid, and the glass tube was cut out of the solid agar mass and put into a solution of hydrochloric acid of about the concentration in which it is present in the normal gastric juice after an Ewald-Boas test meal, viz., approximately 2 per mille. After about an hour the hitherto orange-yellow coating of the pearl turned pink. The experiment was very instructive and convincing, but its inadequacy for finer measurements was apparent. It was therefore modified, as follows:

A few grains of dimethyl-amido-azo-benzol were dissolved in thick celloidin in a mortar, giving the celloidin an orange color. A glass rod was then dipped into this mass of molasses-like consistency, and by taking it out again, a celloidin thread was drawn. The rod was kept quiet until the thread was dry, and the latter was then severed off and cut into minute chips. These chips when put into hydrochloric acid solution gave the dimethyl-amido-azo-benzol reaction in a striking manner. The penetration experiment was now repeated. Instead of the pearl two chips were used, one being placed near the center of the agar-filled glass tube, the other about midway between it and the end. The reaction was seen to appear first in that part of the distal chip nearest the end of the tube. It was sharp enough to allow even after the second or third experiment the formulation of the law first enumerated, viz., that the velocity of penetration is proportionate to the square of the distances penetrated. But the figures were still somewhat too inaccurate; and the method had the great inconvenience that one had to sit right by and watch until the reaction appeared, and was unable to do anything else in the meantime. Moreover, the exact moment of the appearance of the reaction was hard to determine, as the transition from orange to pink was not sudden.

Another experiment was now made. Two drops of a 1 per cent. aqueous alizarine solution, as used for the determination of the total acidity minus combined hydrochloric acid in gastric analysis, were added to 10 c.c. of a melted $\frac{3}{4}$ per cent. agar solution, after the latter had been made slightly alkaline by five drops of

a 1/20 per cent. solution of sodium hydrate. The agar assumed now a purple color.

Glass tubes of an inner diameter of 2 mm. of different lengths were then placed in the agar solution, taking care to let them fill up without air bubbles. After the agar mass had become solid by cooling, the glass tubes were cut out of it. They were then placed in weak hydrochloric acid solution, the penetration of which showed very prettily by the transformation of purple into a yellow color at the ends. The yellow columns extended further and further toward the center, until after a certain time they met, the entire agar column having become yellow. The line of demarcation between the purple and yellow zones was very sharp, allowing measurements even of $\frac{1}{8}$ mm. by means of a scale (described in a former paragraph) divided into $\frac{1}{4}$ mm., which had been fixed photographically on a glass plate and was read off with a dissection microscope.

These alizarine agar tubes, one of which, under the action of about 2 per mille. hydrochloric acid, is illustrated in Figure 1, made the experiment much easier and more accurate, and the conditions of the experiment were much more under the control of the experimenter. It was made possible to eliminate the influence of inequalities of the temperature by placing all tubes in the incubator, and maintaining an even temperature (37 C.) throughout the experiment. The tubes could be taken out after definite intervals and the distances penetrated measured. The more minutely all precautions were observed, the more closely did the actual



FIG. 1.—Illustrating an alizarine-agar tube under the action of hydrochloric acid approximately 2 per mille strong. It shows in the center the dark neutral zone, and at each end a pale acidified portion the length of which indicates how far the hydrochloric acid has penetrated. The color of the dark zone is purple, that of the pale portions yellow.

results agree with the results gained by calculation, thus confirming more and more strongly the law formulated. Here is an example:

First distance penetrated: 9 mm. Time required for penetration 120 minutes.
Second distance penetrated: 14 mm. Time required for penetration, 300 minutes.

In substituting x for the time required to penetrate the second distance (14 mm.), and calculating it according to the formulated law, this equation is obtained:

$$\begin{array}{l} \text{Square of 1st distance} \quad \text{Square of 2d distance} \quad \text{Penetration time for 1st distance} \quad \text{Penetration time for 2d distance.} \\ (9 \text{ mm.})^2 : (14 \text{ mm.})^2 :: 120 \text{ minutes.} : x \\ x = \frac{14^2 \times 120}{9^2} = \frac{196 \times 120}{81} = 290 \text{ minutes.} \end{array}$$

In other words, the actual time was 300 minutes; the calculated time 290 minutes, i. e., an error no greater than 3 1-3 per cent.

Another instance:

$$\begin{array}{l} \text{Square of 1st distance} \quad \text{Square of 2d distance} \quad \text{Penetration time for 1st distance} \quad \text{Penetration time for 2d distance.} \\ (5 \text{ mm.})^2 : (7 \text{ mm.})^2 :: 40 \text{ minutes.} : x \\ x = \frac{7^2 \times 40}{5^2} = \frac{49 \times 40}{25} = 39.2 \text{ minutes.} \end{array}$$

The actual time was 40 minutes; therefore, error for 40 minutes was $\frac{4}{5}$ of a minute, or 2 per cent.

To multiply these examples would be useless.

Here is an instance showing the validity of the second law, viz.: That within the limits so far investigated the concentration of the medium to be penetrated

has a relatively very slight influence on the velocity of penetration. The figures are given for both ends of the tubes, showing how closely the distances at each end tally with each other:

| | | Distance penetrated within 240 minutes by 8 per mille hydrochloric acid. | |
|-----------|-------------|--|-------------------|
| | | At one end. | At the other end. |
| Through 4 | % agar..... | 27 mm. | 27½ mm. |
| Through 2 | % agar..... | 28¼ mm. | 28½ mm. |
| Through 1 | % agar..... | 29¾ mm. | 30½ mm. |
| Through ½ | % agar..... | 32 mm. | 32½ mm. |
| Through ¼ | % agar..... | 35½ mm. | Not measured. |

Previous experiments had been made by me with considerably shorter times of exposure to the acid, giving correspondingly smaller figures. This explains my former statement⁴ that the concentration of the agar has no influence on the velocity of penetration, in support of which statement, now slightly modified, the following figures had been adduced for the penetration of about 2 per mille hydrochloric acid:

| | | Distance penetrated within 20 minutes. | | Distance penetrated within 40 minutes. | |
|-----------|-----------------|--|-------------------|--|-------------------|
| | | At one end. | At the other end. | At one end. | At the other end. |
| Through 1 | % agar.. 7¼ mm. | 7½ mm. | 10½ mm. | 10½ mm. | 10½ mm. |
| Through ¾ | % agar.. 7¼ mm. | 7¾ mm. | 10½ mm. | 10½ mm. | 10½ mm. |
| Through ½ | % agar.. 7¼ mm. | 7½ mm. | 10½ mm. | 10½ mm. | 10½ mm. |

This surprising second law will prove of practical value, as it will not be necessary to be very particular in the preparation of given concentrations of agar for carrier purposes.

Of great interest and eventual practical application is the third law: Within certain limits of concentrations which have been discussed in a former paragraph and which are the most important ones for gastric work; the square roots of the concentrations of the penetrating fluid are in direct proportion to the squares of the distances penetrated.

| | | Distance penetrated after 215 minutes. | |
|--|--|--|-------------------|
| | | At one end. | At the other end. |
| Fluid 1 = Hydrochloric acid approximately 2 per mille. | | 27½ mm. | 27½ mm. |
| Fluid 2 = 1/16 strength of Fluid 1..... | | 14 mm. | 14 mm. |

Equation

| | | | |
|---|--|---|---|
| Square root of concentration of Fluid 1. | Square root of concentration of Fluid 2. | Square of distance penetrated by Fluid 1. | Square of distance penetrated by Fluid 2. |
| $\sqrt{\frac{1}{1}}$ | $\sqrt{\frac{1}{16}}$ | x^2 | $(14 \text{ mm.})^2$ |
| 1 | 1/16 | : | : |
| 1 | ¼ = $x^2 \div 14^2$ | | |
| $x^2 = \frac{14^2 \times 1}{¼} = \frac{196}{¼}$ | $\frac{196}{¼} = 196 \times 4 = 784$ | | |
| $x = \sqrt{\frac{196}{¼}} = \sqrt{784} = 28$ | | | |

In other words, calculated penetrated distance = 28 mm.—real penetrated distance = 27½ mm., or an error of ½ against 28, or of 1.8 per cent.

This third law, governing the velocity of penetration according to concentration, may find a practical application. The distance penetrated in a given time corresponds always to a definite concentration of a given acid (eventually also of other fluids). The method could therefore be used as a substitute of titration. To make it practical, a table could be compiled, giving for a given time, say two hours, on one side all the penetration distances from 0 to 50 mm.;⁵ on the other side the concentration of a given acid corresponding to these

distances. The limitation of the law may prove some obstacle to the successful working out of the method for acidities above 3 or 4 per mille, or below 1/8 per mille. It seems, however, that even this obstacle may eventually be overcome.

For the determination of the free hydrochloric acid by this method congo red proved to be a very good indicator, giving a sharp line of demarcation and sharp contrast between the neutral red and the acidified blue portion. It is in this respect vastly superior to the dimethyl-amido-azo-benzol, in which the transition from the neutral yellow to the acidified pink portion is a gradual, hazy one. Congo red agar tubes have, unfortunately, one disadvantage, however, that of becoming deteriorated in a few days; the beautiful, clear red changes into a dirty brownish or reddish precipitate. The sharpness of the line of demarcation for the alizarine agar has already been pointed out. The alizarine agar tubes keep well for months.

As an indicator for total acidity, I have made a few experiments with phenolphthalein agar, and it seems to fill requirements well, giving a fairly sharp demarcation line, although not as sharp as the alizarine and Congo red.

Therefore, in view of the applicability of the phenolphthalein and alizarine tests, we have the means to determine by this method also the combined hydrochloric acid quantitatively, and it may eventually be entirely substituted for titration of the different acidities of the stomach. It would have the advantage over titration of taking much less time, since the agar tube for a given acidity needs no further manipulation than putting it into the gastric fluid to be tested and reading off the result, after it has been left in the incubator for the required period of time. The tedious process of anxious watching of the point of neutralization incident on titration is thus avoided and, furthermore, all three acidities can be read off at the same time, since a Congo-red, an alizarine and a phenolphthalein tube can be subjected to the test at the same time and read off at the same time.

Many of the details of this method still need working out and eventually modifying, and I reserve a more detailed account for a future publication.

The formulas which so far have given most satisfaction are:

| | |
|---|-----------|
| Congo-red tubes: | |
| 1 per cent. aqueous solution of Congo red..... | ggt. x |
| 1 per cent. agar, hot, thoroughly liquid..... | ad 3liss |
| Alizarine tubes: | |
| 1 per cent. aqueous solution of alizarine..... | ggt. 11 |
| 1 per cent. agar, hot, thoroughly liquid..... | ad 3liss |
| 1/10 per cent. aqueous sodium hydrate solution..... | ggt. 11-v |
| i. e., until mixture has a purple color. | |

As already mentioned, the Congo-red agar tubes keep only a few days, the alizarine tubes several months.

Before concluding this paper I wish to report on some interesting results of experiments made with 8 per cent. white of egg solution prepared in the manner described. This albumin solution was again filled into Mett tubes in the manner above described and coagulated in these by heat. The tubes were subsequently subjected at body temperature to an artificial gastric juice composed as follows:

| | |
|---|---------|
| Pepsin (Merck) | grs. 11 |
| 10 per cent. hydrochloric acid (this concentration was determined by titration) | ½ c.c. |
| Distilled water | 5 c.c. |

A narrow white disc was soon seen to appear near either end of the tube, respectively, moving gradually toward the middle of the tube, but not increasing in

4. Monthly Cyclopedica of Practical Medicine, vol. viii, p. 289; "The Feasibility and Value of Accurate Methods in Clinical Investigations."

5. Two per cent. hydrochloric acid ½ c.c.; distilled water 5 c.c. Diluted with enough distilled water to make it 1/10 the strength of Fluid 1.

7. For instance, in ¼ of a mm., i. e., ¼, ½, ¾, 1, 1¼, 1½, 1¾, 2 mm., etc.

its width, which was about $\frac{1}{4}$ mm. It is shown in a photographic reproduction in Figure 2, where it appears black instead of white. It was found that this zone moved with a velocity corresponding to law No. 1. After having reached the center and amalgamated with its opposite, it disappeared.

To find out to which of the constituents of the artificial juice this phenomenon was due, or whether it was due to both, the following experiment was made:

One tube was put into the artificial juice above described. Another tube was put into

Two per cent. hydrochloric acid $\frac{1}{2}$ c.c.
Distilled water 5 c.c.

or, in other words, into the same fluid minus the pepsin.



Fig. 2.—Drawing reproduced from photograph of albumin tube, showing the demarcation line produced by the advancing hydrochloric acid. This line, while appearing white in the tube against the transparent other albumin, shows in the photograph as a dark line.

Both tubes were put into their respective fluids at the same time, and the effect was watched. It proved that both tubes showed the disc, and that it moved with exactly the same velocity in both, showing thus that this demarcation line was purely due to the influence of the hydrochloric acid, since I may add that distilled water alone did not produce such a line.

Here are the figures illustrating the results:

| Experiment with the fluid containing the hydrochloric acid plus pepsin. | | | Experiment with the fluid containing the hydrochloric acid alone. | | |
|---|-------------------|--|---|-------------------|--|
| At one end. | At the other end. | | At one end. | At the other end. | |
| 1. After 31 minutes... 2% mm. | 2% mm. | | 2½% mm. | 2% mm. | |
| 2. After 62 minutes... 3% mm. | 3% mm. | | 3% mm. | 3% mm. | |
| 3. After 124 minutes... 5% mm. | 5% mm. | | 5½% mm. | 5% mm. | |

In testing here again the validity of the first penetration law by calculating the penetration time of distance $5\frac{3}{4}$ mm. from penetration time 62 minutes and penetration distance of $3\frac{3}{4}$ mm., the following result is obtained:

Square of 2d distance penetrated. (3% mm.)² : Square of 3d distance penetrated. (5% mm.)² :: Penetration time for 2d distance, 62 minutes. : Penetration time for 3d distance, x

$$x = \frac{(5\%)^2 \times 62}{(3\%)^2} = \frac{28.89 \times 62}{14.06} = \frac{1791.18}{14.06} = 127 \text{ minutes.}$$

Instead of 124 minutes actual time. Error — 3 : 127, or 2.28 %

To what use the observations just reported may be put it is difficult to say, although there seems a prospect of utilizing them for establishing landmarks in the digestion tests.

In conclusion, I take occasion to correct a statement made by me in a contribution treating partly on the same subject and published in the *Monthly Cyclopaedia of Practical Medicine*, vol. vii, p. 289, in the form of an editorial bearing the title: "The Feasibility and Value of Accurate Methods in Clinical Investigations." The statement referred to was the one that coagulated disorganized egg albumin is digested not only by pepsin plus hydrochloric acid, but even by hydrochloric acid alone of 2 per mille strength. Control experiments have made it very probable, if not certain, that this statement was wrong, evidently the result of some error of labeling. I corrected it in the proof of said editorial, but the proof reached the publishers so late that this and some other corrections could not be inserted.

PNEUMONIA.*

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A generous experience in the management of pneumonia during the last two years has given me an opportunity to offer some suggestions concerning its treatment that merit consideration. As my efforts and success in the treatment of this disease are based on my personal observations, many statements may appear dogmatic. My object is to give a synopsis of the details and indications that should be observed in applying my method of treatment rather than any speculative or theoretic views that would occasion a new engagement on the old battle ground of medicine.

Pneumonia is a septic febrile disease characterized by an early inflammatory attack on the lung tissue and frequently followed (by the actions of its toxins) by complications that mechanically interfere with the function of the heart and chemically change the condition of the blood to such an extent that even those who are fortified by unusual vigor frequently perish. Its etiology is the presence or absorption of pyogenic germs, whose rapid development is produced by a propagating bed due to the influence of a sudden reduction in surface temperature, in which reduction alcohol, cold and wet weather are frequent factors.

To my mind, the prevalence of pneumonia and its increasing mortality brand it as one of the foremost diseases for our professional consideration. While differing from nearly every writer on pneumonia, I do not wish it understood that I look on their efforts as unavailing, as I fully appreciate their honorable efforts in lending valuable aid in divers ways. I must, however, take issue with those who recommend expectant measures as the principle of treatment, and state that physicians are powerless to modify or to lessen the course of this formidable disease by any therapeutic agent.

In my treatment the antitoxin effect is first noticed in the pulse. If the treatment is properly administered, a favorable circulation can invariably be maintained throughout the convalescing period. Following the improvement in the pulse, the temperature begins to drop; respiration improves, as well as the cyanotic condition which is frequently noticed, especially in neglected cases, in which alcoholic stimulation has masked the invasion of the pneumonic process by its anesthetic influence. Dr. Charles F. Neider,¹ of Geneva, N. Y., mentions what I have so frequently demonstrated, in the following quotation: "Instead of a high-tension pulse, which is usually present in pneumonia, the pulse was of nearly normal tension and of good value. When there was cyanosis, it was promptly relieved."

I am satisfied that our continued, as well as our primary efforts, should be directed to applying measures that will fortify the heart and destroy micro-organisms and their products that produce sepsis. To treat pneumonia as a localized inflammation or as a functional disturbance, without considering the dangerous sequelae that are sure to follow, is about as rational and logical as it is to advise expectant measures. The keynote and foundation of the principles that commend my treatment is the fact that it prevents the manifestation of

* With the exception of the valuable clinical reports of Drs. Gusteter, Carpenter, Butzow, Hiney and Dindler, the basis of this article consists of extracts from a lecture recently delivered at the New York Polyclinic by request of Professor Bent.

1. THE JOURNAL A. M. A., Nov. 18, 1905.

septicæmia. The success which I have obtained by having the courage of my convictions, in what may be looked on as a formidable practice, was not without its anxious hours, and well can I appreciate a physician's anxiety after he has given the first sixty- or seventy-grain dose of quinin; but if there is a medicine in existence that will secure specific results I believe that it is quinin and iron properly administered in pneumonia. No medicine or antitoxin, in my experience or observation, has secured the phenomenal results that I have had in the treatment of pneumonia. I consider the use of stimulants (alcohol, strychnin, etc.) during the active stage of pneumonia not only contraindicated, but dangerous. By increasing the heart's action during its overtaxed period, when handicapped by the toxic condition of the blood that it is to distribute, the mechanical conditions that are distressing the patient are increased.

I earnestly solicit an honorable expression from those who choose to practice my method. Scores of physicians throughout the country have suggested the possibility of so many etiologic factors that I accept this opportunity of answering the many inquiries by simply stating that the etiology in this locality is no doubt the same as elsewhere and we have the same typical lobar pneumonia. Those who are not acquainted with the pneumonia that is found in all high altitudes we envy for the mildness of their cases. A careful review of the clinical reports which my colleagues have herewith submitted substantiates my claim that quinin will not depress the heart during the active stage of pneumonia; on the contrary, it is the most reliable stimulant and produces the effect that we have looked for in other remedies in vain.

Quinin, as I administer it, will not only reduce the frequency of the heart, but will increase its volume and the peripheral circulation as well. To prove its indication, I can positively state that in not a single instance in which large doses have been administered during the active stage of the disease has cinchonism been observed. With the exception of a slight ringing in the ears in two or three cases only, not an unfavorable symptom has ever been reported from its direct or remote influence.

From a scientific standpoint, I regard the achievement in preventing pneumonic cardiectasis, commonly called crisis, with greater favor than I do the recovery. Moreover, what proof (outside of a personal experience) is lacking to prove that my method of treating pneumonia is worthy of consideration? Compare the reports of my colleagues, who have treated cases according to my method, with the reports of those who have adopted the expectant plan. Note the absence of those alarming conditions that occur with due regularity during the sixth, seventh and eighth days of the disease. Note the absence of pain and the comfort the patient experiences within twenty-four hours after the initial dose of quinin and iron. So seldom do my patients complain of pain that I am safe in stating that I have not administered any anodyne for nervousness or pain, except in three or four out of the last hundred cases. Note the reduction of mortality from 75 per cent. to less than 2 per cent. Note the early resolution and infrequent complications.

Do not for an instant entertain the belief that I have overdrawn my picture, for the former mortality in the great majority of my cases fully justifies my remarks to say nothing of the terrible suffering and the alarming symptoms that preceded dissolution.

It may be thought that I am using an argument that will prompt physicians to accept my views against their

own judgment; but I agree that that is my object, provided that my advice is followed and that the details of the treatment are observed as minutely and carefully as the surgeon prepares his patient and himself for a modern aseptic operation. Pneumonia, according to my mind, comes as near being a disease for a surgeon's advice and counsel as any disease classified under a medical head. The surgeon who simply adds a little carbolic acid or bichlorid of mercury to a basin of water and washes his hands before operating is as unfair to his patient as the man who, from timidity and fear, subdivides the doses that I have recommended to be given and reports his cases, whether successes or failures, as being treated by my method.

It is quite true that quinin acts as the principal factor in pneumonia, but iron also is of the utmost importance. For nearly seventy-five years the physiologic action of quinin has interested the medical profession as has that of no other remedy, and we are still unable to state from a positive knowledge its true value.

I take great pleasure in submitting the clinical reports of Dr. A. L. Gustetter, acting assistant surgeon United States Public Health and Marine-Hospital Service, Nogales, Ariz., and Drs. E. M. Carpenter, T. F. Butzow, W. P. Hancy and H. D. Dudley, of Cananea, Mex., to whom I extend my sincere thanks for the many valuable suggestions they have offered from time to time.

CASE REPORTS BY DR. A. L. GUSTETTER.

CASE 1.—*Patient*.—A. L., aged 55, Mexican, weight 210 pounds, married, with a very pronounced alcoholic history, was first seen March 24, when he walked into my office for medical advice.

Examination.—His temperature was 104; pulse, 120; respiration, 30. He was just recovering from a severe chill and complained of great pain in the left chest. I found a pneumonia involving the left lower lobe.

Treatment.—He was instructed to return to his home and to go to bed. He was given fifteen drops of saturated solution of potassium iodid, increasing two drops every two hours, until thirty-one drops had been given, when he was instructed to begin again with fifteen drops and repeat the same method of increasing the dose. His temperature was reduced to 102 and remained there almost constantly until March 27, the fourth day of his illness, when the following changes occurred:

Course of the Disease.—March 27: At 2:15 p. m. temperature was 104.4; pulse, 120; respiration, 31. There was pain in the right chest; also pain and tenderness in the region of the gall bladder and involvement of the lower lobe of right lung. Dr. W. J. Galbraith of Cananea, Mexico, was visiting in Nogales at the time and I invited him to see the case in consultation. Forty grains of quinin were administered, as a result of our consultation, and one hour later thirty-five grains more were given. At 5:30 p. m., three hours and fifteen minutes later, his temperature was 104; pulse, 114; respiration, 28. Twenty grains of quinin were given with the direction to administer fifteen drops of tincture of chlorid of iron every three hours. At 8:15 p. m. temperature was 102.8; pulse, 114; respiration, 23. At 11:15 p. m. temperature was 101; pulse, 110; respiration, 23; profuse perspiration. Patient said he felt fine and even on direct questioning made no complaint of ringing in the ears.

March 28: At 8:45 a. m. temperature was 101; pulse, 100; complained of slight deafness. Ten grains of quinin were ordered every three hours. At 11:45 a. m. temperature was 101.6; pulse, 98; respiration, 34. He had no difficulty in hearing, nor had he any ringing in the ears. At 2:45 p. m. temperature was 102.2; pulse, 108; respiration, 35. He was very uneasy. At 5:45 p. m. temperature was 101.4; pulse, 98; respiration, 29. Microscopic examination of urine showed the presence of granular casts. At 8 p. m. temperature was 101.6; pulse, 98; respiration, 36; the patient was slightly delirious.

March 29: At 6 a. m. temperature was 101.6; pulse, 98; respiration, 36; patient rested fairly well the previous night.

At 9:15 a. m. temperature was 101.8; pulse, 104; respiration, 35. Five grains of quinin were ordered and the iron was continued every three hours. At 12:15 p. m. temperature was 102.4; pulse, 108; respiration, 36. At 3:30 p. m. temperature was 103.2; pulse, 110; respiration, 36; 10 grains of quinin were administered. At 5:15 p. m. temperature was 103; pulse, 110; respiration, 36. Patient was delirious; 15 grains of quinin were given. At 8 p. m. temperature was 102.4; pulse, 118; respiration, 37; in his delirium patient got out of bed.

March 30: Temperature was 99.8; pulse, 100; respiration, 33. The quinin was suspended and the iron continued at irregular intervals on account of delirium. At 4:15 p. m. temperature was 101; pulse, 103; respiration, 34. The patient regained consciousness. Thirty grains of sodium bromid and 10 grains of chloral were ordered given at 8:30 p. m.

March 31: At 9:45 a. m. temperature was 99.6; pulse, 112; respiration, 36; the patient slept well all night and said he felt fine.

April 1: Sixth day of treatment. Temperature was 99; pulse, 88; respiration, 26. Patient was allowed to sit up in bed; he said he felt fine and had slept all night. He had a good appetite.

April 2: Patient was discharged without any remaining symptoms. Temperature, pulse and respiration were normal. Microscopic examination of urine showed presence of very few hyaline casts.

Remarks.—This case is interesting because of the age of the patient, obesity, the fact that he was an alcoholic subject and the delirium.

CASE 2.—*Patient.*—C. C., widow, aged 65, obese, asthmatic.

Examination.—April 1, 9 a. m.: Temperature, 100; pulse, 90; respiration, 26. The patient complained of pain in the left chest and of cough. Physical examination of lungs was negative.

Treatment.—I decided to watch the case, suspecting it to be one of beginning pneumonia. At 8 p. m. temperature was 103.2; pulse, 100; respiration, 32. Patient was spitting blood, breathing was labored and very painful. Owing to her age and weakened physical condition, only 20 grains of quinin were given. At 5 p. m. temperature was 103.6; pulse, 106; respiration, 44. Twenty grains of quinin were given and 15 minims of tincture of iron were ordered given every three hours.

April 2: At 8:55 a. m. temperature was 99; pulse, 70; respiration, 28; quality of pulse better than before her illness. Patient had all the physical signs and symptoms of pneumonia, involving the lower left lobe.

April 3: At 9:30 a. m. temperature was 102; pulse, 76; respiration, 25. Felt fine. Ten grains of quinin given every three hours. At 5:30 p. m. temperature was 100.8; pulse, 72; respiration, 30. Dose of quinin reduced to 5 grains every 4 hours. The iron was continued. Sodium bromid and chloral were ordered given at 8:30 p. m.

April 4: Temperature was 99; pulse, 70; respiration, 28. Patient sat up in bed.

April 5: At 9:30 a. m. temperature was 98.6; pulse, 62; respiration, 24. Coughing had ceased; sputum was clear, and the patient sat up in a chair.

April 6: Sixth day of disease. Temperature, pulse and respiration were normal. The patient walked about the house, and was discharged without any remaining symptoms. This patient never suffered any delirium or complained of ringing in the ears.

CASE 3.—*Patient.*—R. T., aged 29, Mexican, miner.

Examination.—May 23, at 9 a. m., temperature was 104.8; pulse, 130; respiration, 50. The man complained of sharp pain in the right chest. He had suffered with a severe chill the night previous. Physical examination showed pneumonia, involving lower lobe of right lung, with annoying cough.

Treatment.—I gave 30 grains of quinin. May 23, at 10 a. m., temperature was 104.8; pulse, 140; respiration, 54; 30 grains of quinin were given and 15 drops of iron ordered every 2 hours. At 12:30 p. m. temperature was 103; pulse, 130; respiration, 50. There was profuse perspiration. At

3:30 p. m. temperature was 102.4; pulse, 110; respiration, 44. Patient was still perspiring; he did not complain of deafness or ringing in the ears. Ten grains of quinin were ordered and the iron was continued. At 6 p. m. temperature was 102; pulse, 106; respiration, 40.

May 24: At 9 a. m. temperature was 102.4; pulse, 110; respiration, 44. There was bloody expectoration. At 12:30 p. m. temperature was 101.6; pulse, 108; respiration, 40. Sodium bromid and chloral were ordered at 8:30 p. m.

May 25: At 9 a. m. temperature was 100; pulse, 94; respiration, 36; patient resting very well. Ten minims of iron were ordered given every 3 hours. At 4 p. m. temperature was 101; pulse, 90; respiration, 40. Sputum was rusty. The amount of quinin was reduced to 5 grains every 3 hours.

May 26: At 9 a. m. temperature was 100.2; pulse, 90; respiration, 34; patient was resting well. At 4 p. m. temperature was 102; pulse, 100; respiration, 40; patient did not feel so well.

May 27: At 8:30 a. m. temperature was 103.6; pulse, 110; respiration, 50. He complained of pain in the left chest. Examination showed involvement of middle and lower lobes of left lung. Thirty-five grains of quinin were administered and 10 drops of iron were ordered given every 2 hours. At 9:30 a. m. temperature was 104; pulse, 120; respiration, 48. Thirty-five grains of quinin were given. At 2 p. m. temperature was 102.4; pulse, 108; respiration, 38. There was profuse perspiration. At 6:30 p. m. temperature was 102; pulse, 100; respiration, 40; 15 grains of quinin were ordered given every 3 hours, and the iron was continued.

May 28: At 9 a. m. temperature was 101; pulse, 90; respiration, 36. Patient felt much better. At 4 p. m. temperature was 100; pulse, 94; respiration, 40.

May 29: At 9 a. m. temperature was 99; pulse, 98; respiration, 34.

May 30: At 9 a. m. temperature was 100; pulse, 90; respiration, 36. The amount of quinin was reduced to 5 grains every 3 hours, and the iron was continued. At 6 p. m. temperature was 99.8; pulse, 90; respiration, 32.

May 31: At 8:30 a. m. temperature was 99.6; pulse, 90; respiration, 34. Medicines discontinued; the patient felt fine, and his appetite was good.

June 2: Temperature, pulse and respiration were normal. He was able to sit up in a chair.

June 3: Discharged.

CASE 4.—*Patient.*—A. M., male, aged 14.

Examination.—June 4, 9 a. m., temperature, 103; pulse, 130; respiration, 30. Patient complained of severe pain in right chest, with frequent coughing.

A diagnosis was made of pneumonia, involving the lower lobe of the right lung.

Treatment.—At 10 a. m., June, 4, I administered 30 grains of quinin. At 11:30 a. m. temperature was 104; pulse, 134; respiration, 44. Twenty grains of quinin and 10 minims of tincture of iron were administered every 4 hours. At 4 p. m. temperature was 102.6; pulse, 120; respiration, 52. The patient was expectorating rusty-colored sputum and perspiring freely. Five grains of quinin were ordered given every 3 hours.

June 5: At 8:30 a. m. temperature was 101; pulse, 118; respiration, 40. The patient was coughing but little and the treatment was continued. At 4 p. m. temperature was 100; pulse, 108; respiration, 40.

June 6: At 9 a. m. temperature was 100.4; pulse, 110; respiration, 34. The patient had rested well the previous night; he had no pain and very little cough. At 5:30 p. m. temperature was 99.8; pulse, 100; respiration, 28. Quinin was discontinued; 10 drops of iron were given every 4 hours.

June 8: At 9:30 a. m. temperature was 99.4; pulse, 104; respiration, 26. Patient was allowed to sit up in bed one hour in the morning and again one hour in the afternoon.

June 9: Temperature was 98.8; pulse, 94; respiration, 22. The patient was able to sit up in a chair. He had a good appetite, and said he felt fine.

June 10: Seventh day after beginning treatment and eighth day of disease. Patient was discharged with normal temperature, pulse, and respiration.

CASE 5.—Patient.—Miss M., aged 22, American. On my first visit, November 8, I found that, on November 4, the patient had suffered with a severe chill. She complained of pain in the lower part of the right chest, with annoying cough. The sputum was blood-tinged.

Examination.—Temperature was 104.6; pulse, 130; respiration, 50. There was severe pain over the entire right chest; breathing was labored, and expectoration bloody.

Diagnosis.—Pneumonia, involving middle and lower lobe of right lung.

Treatment.—I administered 45 grains of quinin as the initial dose. At 9 p. m. 30 grains more were administered and 15 minims of tincture of iron were ordered given every 2 hours.

November 9: At 7:30 a. m. temperature was 101; pulse, 100; respiration, 36. At 2:30 p. m. temperature was 100; pulse, 106; respiration, 34. At 8:30 p. m. temperature was 100.4; pulse, 110; respiration, 40.

November 10: At 8 a. m. temperature was 99.4; pulse, 90; respiration, 30. Patient able to sit up in bed. Iron continued. At 6 p. m. temperature was 99; pulse, 78; respiration, 32.

November 11: At 8:30 a. m. temperature was 98.4; pulse, 82; respiration, 24. Patient sitting up in chair; had a good appetite and felt comfortable.

November 12: At 9:30 a. m. temperature, pulse and respiration normal. Patient discharged.

Remarks.—My experience in the treatment of pneumonia with quinin and iron comprises 13 cases. All of these terminated in successful recoveries, as against the previous mortality which held forth in Nogales and vicinity, of about one recovery out of five cases treated by other therapeutic measures. I have had ample opportunity in this section of the country to try all, or nearly all, of the most approved remedies in the treatment of pneumonia, but I have always felt that, if the patient recovered, it was in spite of the medicines that were used. The other cases which I have not cited all went on to recovery in much the same time and manner.

From my most recent experience with the quinin treatment, I feel satisfied that, if it were continued in fairly large doses until the temperature dropped to normal, involvement of the other lobes of the same lung or of the healthy lung would not occur. I believe the question of how much quinin should be administered must depend on the severity of the general symptoms, age and especially the length of time the disease has progressed before the treatment is begun. In my experience with children, I have observed that they stand proportionately large doses as well as adults.

I am frank to confess that I felt considerable timidity when I administered the first large doses, but the immediate relief which the remedy afforded overcame my hesitancy. My experience with Dr. Galbraith's treatment has convinced me that we have in quinin and iron a specific for pneumonia.

CASE REPORTS BY DR. T. F. BUTZOW.

CASE 1.—Patient.—J. H., aged 42, saloonkeeper.

History.—The patient was a hard drinker and was just recovering from a two weeks' debauch. On the night of November 6 he had a chill and drank over a quart of whisky, thinking it might warm him up.

Examination.—Temperature, 105.5; pulse, 140; respiration, 46. He complained of pain in the lower lobe of the right lung, with consolidation.

Diagnosis.—Lobar pneumonia.

Treatment.—Fifty grains of quinin were administered at 10 p. m., followed one hour later by 25 grains.

November 7: At 11 a. m. temperature was 103.4; pulse, 118; respiration, 30. Quinin, 50 grains, was administered and tincture of iron, 15 minims, was ordered every 3 hours. At 8 p. m. temperature was 101.8; pulse, 100; respiration, 22. At 10 p. m. 40 grains of quinin were given, and at 11 p. m. 20 grains more. The iron was continued.

November 8: At 11 a. m. temperature was 99; pulse, 80; respiration, 20. Sputum was bloody. At 8 p. m. temperature was 101; pulse, 84; respiration, 20. At 10 p. m. 40 grains of quinin were administered, followed one hour later by 20 grains; the iron was continued.

November 9: At 11 a. m. temperature was 98; pulse, 80; respiration, 20. At 8 p. m. temperature was 99; pulse, 80; respiration, 19; 20 grains of quinin were administered.

November 10: At 11 a. m. temperature was 97.2; pulse, 76; respirations, 19. At 8 p. m. temperature was 99; pulse, 76; respiration, 19.

November 11: At 11 a. m. temperature was 97; pulse, 74; respiration, 18. At 8 p. m. temperature was 99; pulse, 76; respiration, 19; 15 grains of quinin were administered.

November 12: At 11 a. m. temperature was 97; pulse, 70; respiration, 18. At 8 p. m. temperature was 97; pulse, 56; respiration, 18.

November 13: At 11 a. m. temperature, pulse, and respiration were normal. Patient was discharged and placed on small doses of iron and quinin as a tonic.

CASE 2.—Patient.—Mexican, male, aged 43, smelterman.

History.—This man was a mescal (Mexican whisky) subject. His wife said he had been on a drunk for about a week, and that he came home on the morning of November 20 complaining of pain over his entire chest.

Examination.—November 20, 11 a. m., he complained of severe pain over the region of the gall bladder, and was expectorating bloody sputum. The lower right lobe was consolidated. Temperature was 105.6; respiration, 46; pulse, 148.

Diagnosis.—Lobar pneumonia.

Treatment.—Fifty grains of quinin were given at 11 a. m. and 25 grains one hour later. At 8 p. m. temperature was 104; respiration, 38; pulse, 120; 40 grains of quinin were administered and 25 grains one hour later.

November 21: At 11 a. m. temperature was 102.4; respiration, 30, and pulse, 109. Thirty grains of quinin were administered. At 8 p. m. temperature was 102; pulse, 118; respiration, 36; 50 grains of quinin were administered and 25 more one hour later.

November 22: At 11 a. m. temperature was 99; respiration, 26; pulse, 98. Fifteen minims of iron were ordered given every 3 hours.

November 23: At 11 a. m. temperature was 98.6; respiration, 99; pulse, 87. The iron was continued. At 8 p. m. temperature was 100; pulse, 91; respiration, 23. Thirty-five grains of quinin were ordered and 15 grains more one hour later.

November 24: At 11 a. m. temperature was 99.2; respiration, 20; pulse, 90. The iron was continued. At 8 p. m. temperature was 102; respiration, 24; pulse, 100. Forty grains of quinin were administered and 20 grains more one hour later.

November 25: At 11 a. m. temperature was 98.2; respiration, 19; pulse, 97. The iron was continued.

November 26: At 11 a. m. temperature was 97; respiration, 19; pulse, 74.

November 27: At 11 a. m. temperature was 96.8; respiration, 18; pulse, 68. The iron was continued. Patient was discharged, November 27, with normal temperature, pulse, and respiration. Tonic doses of iron and quinin were ordered 3 times a day for one week.

CASE 3.—Patient.—F. F., Mexican, aged 35, miner.

History.—The patient had a severe chill, with pain on the right side, on evening of November 19. He had been on a ten days' drunk and gave a history of being a periodical drunkard.

Examination.—There was pain and tenderness in the region of the gall bladder and the lower lobe of the right lung. Respiration was labored, and the sputum bloody.

Diagnosis.—Pneumonia, involving right lower lobe.

Treatment.—November 20, 10 a. m., temperature was 103.8; pulse, 108; respiration, 40. Fifty grains of quinin were administered and 25 grains more one hour later. At 3 p. m. temperature was 97; pulse, 92; respiration, 28. At 7 p. m. temperature was 100; pulse, 80; respiration, 28; 20 grains of quinin administered.

November 21: At 7 a. m. temperature was 102; pulse, 75; respiration, 33. Twenty-five grains of quinin were administered and 15 grains more one hour later. At 7 p. m. temperature was 103; pulse, 80; respiration, 28. Forty grains of quinin were administered and 20 grains more one hour later; iron was also given.

2. Compare the record of Dr. Gustetter's first two cases with the treatment of his last three.

November 22: At 7 a. m. temperature was 99; pulse, 70; respiration, 24.

November 23: Temperature was 97.2; pulse, 60; respiration, 28. At 7 p. m. temperature was 99; pulse, 65; respiration, 24. Twenty grains of quinin were administered.

November 24: Temperature was 98; pulse, 60; respiration, 25.

November 25: At 7 a. m. temperature was 98; pulse, 65; respiration normal.

November 26 and 27: Temperature and pulse remained normal.

November 28: The patient was discharged, with normal temperature and pulse. Tonic doses of quinin and iron were ordered 3 times a day during the last 3 days, to be continued 4 days more.

Remarks.—I wish to call attention to the fact that in my experience quinin and iron, when given as recommended by Dr. Galbraith, act practically as specifics in pneumonia. It is my experience that alcoholic subjects respond to the treatment more readily than do non-alcoholic patients. The effects of quinin on the circulation can not be questioned. In every case the same results are obtained, namely, a normal tension and good volume of pulse within twenty hours from the initial dose. The severe pain complained of is not only relieved, but prevented and seldom does it become a factor of any importance from the beginning of the treatment until the patient is well. In all my cases I continue tonic doses of quinin and iron at least one week after the patient is discharged.

CASE REPORTS BY DR. H. D. DUDLEY.

CASE 1.—*Patient.*—J. L., male, aged 32; nationality, Mexican; miner.

Family History.—Negative.

Personal History.—The patient has never been sick since childhood. He is robust and well developed; he smokes and uses spirits. There was no specific history. He was taken ill May 20, about 6 p. m., with a severe chill lasting for about one hour, followed by headache and pain in his bones. During the night he began to have pain in his left side and was kept awake by coughing.

Second day: Cough and pain both increased in severity. During the afternoon he began to expectorate blood-stained sputum. He had great thirst and was very hot; he vomited twice during the day and was delirious at times during the night.

Examination.—I first saw the patient at 10 a. m. on the third day of the disease. I found him with a temperature of 105; pulse, 140; respirations very superficial and a general toxic appearance. Percussion revealed an absolute dullness extending from supraclavicular region over the entire lung area on left side and front area of precordia; dullness obliterated. Auscultation showed bronchial breathing at apex; some crepitant rales lower down in front and posteriorly a distinct pleuritic rub.

Treatment.—Fifty grains of quinin sulphate were given at once, followed in 2 hours by 20 more. About 30 minutes after taking second dose the patient vomited. At 3:30 p. m. temperature was 104.2; pulse, 140; 20 grains of quinin were administered. A calomel purge, followed by a saline in 6 hours, was ordered given that evening. The cough and pain continued during the night, and the patient became delirious.

Fourth day: At 5 a. m. I received a hurried call by messenger, who stated that the patient was dying. On arrival, I found his temperature 102; pulse, 120. Thirty grains of quinin were ordered. At 4 p. m. temperature was 104; pulse, 100. The patient had a copious bowel movement, and there was profuse perspiration, with little cough and no expectoration.

Fifth day: At 11 a. m. temperature was 98; pulse, 100. There was slight cough and no pain in chest on forced inspiration. An expectorant cough mixture was ordered. At no time were there any symptoms of cinchonism.

CASE 2.—*Patient.*—B. V., aged 24, Mexican, miner. (History unobtainable.)

History.—On November 1, patient complained of headache, with slight cough and pains in back and the legs. On November 2, he had a chill, followed by fever and pain over the right thoracic region.

November 3: I first saw the patient at 4:30 p. m.; temperature was 103.5; pulse, 88; rapid, shallow respiration; increased vocal fremitus; tubular breathing, and pronounced dullness over the right upper lobe. Patient refused treatment, and no medicine was taken that day or night.

November 4: Temperature was 104.5; pulse, 120. Quinin, 50 grains, was administered and followed in 2 hours by 30 grains more. Ten grains every 2 hours were ordered given during the night.

November 5: Temperature, 99; pulse, 80. The patient was coughing a little, but had no pain; he was nauseated. I gave 5 grains of chlorotone, followed in one hour by 30 grains of quinin.

November 6, 7, 8 and 9: Temperature and pulse remained normal. The recovery was uneventful.

Remarks.—The specific effects of the treatment of pneumonia with quinin and iron in those cases in which I have used it are very gratifying. However, I find great difficulty in using this or any other treatment among the people of my district.

CASE REPORTS BY DR. W. P. HANEY.

CASE 1.—*Patient.*—Mrs. P., aged 30, Mexican, mother of three children, about seven months pregnant, was suddenly taken with chill, followed by pain in right side, fever, and bloody sputum.

Examination.—I saw her on the first day of her illness about 4 p. m. Temperature was 104; pulse, 120, and respirations rapid. She complained of severe pain in the region of the right side. There was dullness over the right lower lobe, with slight consolidation.

Treatment.—Fifty grains of quinin were administered and 10 minims of tincture of chlorid of iron were ordered given every 4 hours.

Second day: Temperature was 100; pulse, 96; sputum clear. Twenty grains of quinin were administered and the iron was continued.

Third day: Temperature was slightly subnormal; pulse, 74. She had no pain and respiration was easy. There was slight mucopurulent expectoration. Quinin in small doses and an expectorant mixture were ordered and continued until the sixth day, at which time the patient was discharged from treatment.

CASE 2.—*Patient.*—M. F., aged 36, Mexican, miner.

History.—The patient stated that he was taken ill three days before, about 4 in the morning, shortly after returning from his work in the mines. He had a severe chill at the time, lasting about 40 minutes, followed by severe pain in left side, and later in the day he began to spit blood. He was treated by home remedies for the first three days, but grew steadily worse, and on the morning of October 12 I was called to see him.

Examination.—I found him with a temperature of 103.8; pulse, 140, and respiration, 48, very shallow, and with a pronounced expiratory grunt. Cough was hard and profuse, with rusty expectoration. He had severe pain in his left axillary region, under seventh and eighth ribs. On physical examination, I found consolidation of the left lower lobe, with numerous subcrepitant râles over this area.

Treatment.—I gave him at once 60 grains of bisulphate of quinin and ordered 15 minims of tincture of iron every 3 hours.

October 13. Temperature was 101; pulse, 100; respiration, 24. He complained of less pain in his side, and the sputum had become clear; respiration was easy, and cough loose. Thirty grains more of quinin were administered; the iron was continued.

October 14: Temperature was 99.5; pulse, 88; respiration, 20. Cough was loose, with profuse mucopurulent expectoration; there was slight pain in the left side. Twenty grains of quinin were administered, and the iron was continued.

October 15: Temperature was 98; pulse, 68; respiration, 16. There was slight pain in the left side. He had severe cough; the expectoration continued about the same. Elixir of iron, quinin and strychnin was continued for 5 days, and then the patient was discharged.

CASE 3.—*History.*—October 24 was called in to see Mrs. A.

I found that eight days previously she had been delivered of a seven-pound girl by a midwife, and on the fifth day of her puerperium she was seized with severe pain in the right side, followed by a severe chill, after which she began to expectorate rusty sputum.

Examination.—Her temperature was 103.6; pulse, 120, and respiration, 40. She was practically unable to cough on account of the severe pain in right side. On physical examination, I found consolidation of the right lower lobe; no evidence of vaginal or uterine inflammation, except what one would expect after a normal delivery.

Treatment.—Fifty grains of sulphate of quinin were given, followed in one hour by 25 more. One-half grain of codein was ordered every three hours to relieve pain.

October 25: Temperature was 100; pulse, 92; respiration, 26. The pain in the left side was relieved; the sputum was still rusty. She had not taken the last 25 grains of quinin on account, as she said, of the bitter taste. Thirty grains of quinin were administered and the iron continued in 15-minim doses every 3 hours.

October 26: Temperature was 98.6; pulse, 76; respiration, 18. There was no pain in side, except on coughing.

October 27: Temperature was normal; pulse, 100, and respiration, 20. There was still severe cough. A cough mixture was ordered every 3 hours.

October 28: Temperature, pulse and respiration were normal. Cough mixture ordered continued for 3 days, at which time she was discharged, well.

Remarks.—In conclusion, I wish to state that the only other remedy that I find comparable to the action of quinin and iron in pneumonia is the antidipltheritic serum in diphtheria. My recommendation is to begin the use of quinin and iron as early as possible. The only difficulty I experience in the administration of quinin and iron in pneumonia is the fact that I am obliged to give the medicine myself.

DR. E. M. CARPENTER'S CASE REPORTS.

CASE 1.—*Patient.*—A. V., aged 21, Mexican, laborer, was first taken sick Aug. 8, 1905; first seen August 10, and was admitted to hospital August 11, 10:45 a. m., with a temperature of 102.6; pulse, 120, and respiration, 38. Examination showed pneumonia, involving the lower lobe of the right lung. Quinin, 30 grains, was administered at 11:30 a. m. and 15 grains more one hour later. At 7 p. m. temperature was 102; pulse, 116; respiration, 32.

August 12: At 7 a. m. temperature was 101.2; pulse, 112; respiration, 40. Patient slept well during the night. At 12:45 p. m. temperature was 104.4; pulse, 120; respiration, 40. Thirty grains of quinin were administered and 20 grains more one hour later. Tincture of iron, 15 minims, was ordered given every 3 hours. At 7 p. m. temperature was 101.6; pulse, 112; respiration, 36.

August 13: At 6 a. m. temperature was 101; pulse, 92; respiration, 30. At 12 p. m. temperature was 102; pulse, 83; respiration, 24. Ten grains of quinin were ordered every hour for 3 hours. At 7:45 p. m. temperature was 103; pulse, 96; respiration, 32. Thirty grains of quinin were administered and 15 minims of tincture of iron were ordered given during the night.

August 14: At 6 a. m. temperature was 101.4; pulse, 100; respiration, 32. At 1 p. m. 40 grains of quinin were administered and iron continued. At 4 p. m. temperature was 100.4; pulse, 88; respiration, 24.

August 15: At 6 a. m. temperature was 98.2; pulse, 68; respiration, 24. The iron was continued.

August 16: Temperature, pulse and respiration were normal.

August 17: Patient was discharged from the hospital, well.

CASE 2.—*Patient.*—J. A., aged 19, Mexican, occupation, carman in mines.

Examination.—Patient was first seen Feb. 17, 1905, at 9 p. m. He was in the midst of a severe chill, which lasted nearly an hour; his temperature was 104.6; pulse, 140; respiration very rapid. Examination showed lobar pneumonia, involving the right lower lobe.

Treatment.—Sixty grains of quinin were administered at 9:20 p. m., followed by 30 grains more one hour later.

February 18: At 8 a. m. temperature was 101; pulse, 100; his general condition was much brighter. He was transferred to the Ronquillo Hospital, arriving there at 11 a. m. The hospital record shows the following chart:

February 18: At 11 a. m. temperature was 100.8; pulse, 96; respiration, 32. Fifteen grains of quinin were administered and 15 minims of tincture of iron ordered every 3 hours. At 7 p. m. temperature was 99.8; pulse, 83; respiration, 28.

February 19: At 6:30 a. m. temperature was 99.8; pulse, 80; respiration, 19. At 4 p. m. temperature was 98; pulse, 53; respiration, 16.

February 20 and 21: His temperature, pulse and respiration remained normal, and so continued until the morning of February 22, when he was given his clothes and permitted to walk about the hospital. Watching an opportune time while the ward tender was temporarily absent from the ward, he deserted the hospital, making his exit through the back door, and disappeared. On February 28, at 11 a. m., he was returned to the hospital with a temperature of 104; pulse, 130; respiration, 48, and in a very pronounced septic condition. He rapidly grew worse and expired the night of March 2.

OBSERVATIONS OF THE QUININ AND IRON TREATMENT IN PNEUMONIA.

First.—Large doses of quinin given during the initial chill or stage of congestion may materially modify the course of the disease and in some cases abort it.

Second.—Large doses given when the disease has progressed well into the second stage, or stage of red hepatization without treatment, has a decided influence on the temperature and pulse, reducing the former, as well as the latter, which is steadied and increased in volume. These cases all terminate by lysis instead of crisis.

Third.—Large doses of quinin and iron given in the later stage of pneumonia, when no previous treatment has been given, have a beneficial action in controlling the temperature and pulse. In those neglected cases where sepsis is manifested to its fullest extent, an unfavorable result must naturally be expected.

CONCLUSIONS.

The first attention rendered on admittance to the hospital is a warm bath, followed by a calomel or phosphate of soda purge. The initial dose of quinin is administered in from one to three hours later, provided the stomach is not disturbed. If the temperature has reached 105 or over, from 60 to 70 grains of quinin sulphate are given, as the initial dose, followed in one hour by usually one-half of the first dose. If the temperature ranges between 103 and 104, from 40 to 50 grains are given, as above. If a lower temperature is found, 40 grains may be given. This is the smallest dose I would advise as the initial one.

I begin the administration of tincture of iron within three or four hours after the second dose of quinin is administered in doses ranging from 10 to 15 minims every two to six hours, depending on the condition of the pulse. In the event of the temperature rising to 101 or 102, after it has reached the normal or subnormal mark, I administer from 40 to 50 grains of quinin at one dose, and continue the iron in 15 minim doses every three or four hours.

I strongly advise against any compromise in the way of dividing the doses of either quinin or iron during the active pneumonic stage. Occasionally the stomach will become rebellious, but as a rule this may be overcome by chlorotone or pepsin and guaiacal. I dress my patients with as light-weight clothing as possible, provide thorough ventilation and encourage them to take plenty of liquid nourishment.³

3. So many physicians have expressed a desire to visit Cananea and witness my work that I extend a cordial invitation to all who are interested in it to do so at their convenience.

THE FORMATION OF THE CORPUS LUTEUM IN THE GUINEA-PIG.*

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HISTORY OF RESEARCH.

Three considerations make it desirable to undertake a detailed study of the development of the corpus luteum of the guinea-pig.

1. Although a number of very careful investigations on the development of the corpus luteum have been published within the last ten years, there are a number of essential points about which different writers still disagree. It is not necessary to give a review of the literature on this subject, as this has been done repeatedly within recent years.¹ In regard to the development of the corpus luteum of the guinea-pig, there exists a short paper of Belloy,² who does not give distinct statements in regard to the age of the different corpora lutea which he describes. His results are in some important points opposed to the results obtained in other animals by different investigators. The most recent paper on the development of the corpus luteum which refers, in part at least, to the guinea-pig is by Jankowski,³ who states that the corpus luteum is formed by theca interna and that the granulosa disintegrates after the rupture of the follicle. His conclusions are based on insufficient evidence, as he has not examined a consecutive series of ovaries.

2. Former investigations into the normal and pathologic anatomy of the ovaries⁴ made it desirable to determine the origin of the cells which are characteristic of the corpus luteum. Similar cells can be found in certain pathologic new formations of the mammalian ovary. For an understanding of the processes leading to those new formations a study of the development of the normal corpus luteum was desired.

3. The formation of the corpus luteum represents a very interesting instance of growth, which constitutes an apparent transition between the processes found in wound healing and between processes observed in tumor growth. The structures recently described by me in the ovary of the guinea-pig show a still closer resemblance to "transitory tumors." The study of the development of the corpus luteum in the guinea-pig is, therefore, of a general pathologic interest.

MICROSCOPIC EXAMINATION OF OVARIES.

Sixty ovaries of thirty, mostly (about three months old), guinea-pigs, were used and cut into serial sections. Zenker's fluid, paraffin and celloidin, hematoxylin and eosin were used. At certain stages, which were of greater importance, more ovaries were investigated than at others.

Copulation was observed and the ovaries were used at

the following periods after copulation: Six hours, $7\frac{1}{4}$ hours, 9 hours (two guinea-pigs), 10 hours, 11 hours, $11\frac{1}{2}$ hours, 12 hours (two guinea-pigs), $12\frac{1}{4}$ hours, $12\frac{1}{2}$ hours, $14\frac{1}{4}$ hours, 15 hours, 17 hours, 50 minutes, 22 hours, 24 hours, 25 hours, 50 minutes, 28 hours, 30 hours, 50 minutes, 32 hours, 20 minutes, 34 hours, 36 hours, 38 hours, $49\frac{1}{4}$ hours, $50\frac{1}{2}$ hours, 60 hours, $74\frac{1}{2}$ hours, $77\frac{1}{2}$ hours, $100\frac{1}{2}$ hours, 127 hours.

1. At Six Hours After Copulation (Celloidin).—No ruptured follicle is visible.

2. At Seven and One-Quarter Hours After Copulation (Celloidin).—Place of rupture is visible. Granulosa is preserved. In some of the granulosa cells karyorrhexis is present. Most of the cells are well preserved. Only very little extravasated blood is found in the ruptured follicle. Theca interna and granulosa can easily be distinguished. Theca interna is hyperemic. The granulosa cells are long drawn out. This guinea-pig was born a short time before copulation.

3. At Nine Hours After Copulation (Celloidin).—Two corpora lutea are present in one ovary. The place of rupture is visible. The lumen of the cavity persists. In one of the corpora lutea a part of the granulosa penetrates through the place of rupture into the abdominal cavity and lies on the germinal epithelium. *Liquor folliculi* is still present and it is drawn out in fibers. The granulosa is well preserved, only near the place of rupture the covering of the granulosa is very imperfect. Mitoses can not be seen in the granulosa cells. Some of the granulosa cells which have been lying free in the central cavity are karyorrhectic. Mitoses are present in the theca interna, which is hyperemic. At most places the demarcation between granulosa and theca interna is not sharp. At some places, however, the granulosa is somewhat detached from the theca interna and both layers can be easily distinguished. No blood is present in the ruptured follicle, with the exception of the immediate neighborhood of the place of rupture. Theca interna and granulosa form several folds. The granulosa cells are drawn out in the direction of the place of rupture. The theca interna cells are likewise drawn out at some places. Polynuclear leucocytes are present in the theca interna.

4. At Nine Hours After Copulation (Paraffin).—Ovaries are hyperemic; no ruptured follicle is present. Three old corpora lutea are visible.

5. At Ten Hours After Copulation (Paraffin).—A small cavity is preserved in each of the ruptured follicles. *Liquor folliculi* is present in the cavity. Polynuclear leucocytes are found in the central cavity. The granulosa is well preserved. The cells are partly vacuolar. Some of the central granulosa cells are karyorrhectic. The large majority of the granulosa cells are well preserved. The blood vessels of the theca interna are very much dilated. They contain polynuclear leucocytes. At some places between the vessels large cells are found which present the same appearances as granulosa cells. No mitoses can be seen in the granulosa cells. Mitoses are present at the borderline between theca interna and granulosa; they are probably situated in the interna cells. Granulosa and theca interna form folds.

6. At Eleven Hours After Copulation (Paraffin).—The place of rupture of the follicle is open. The corpus luteum is not prominent over the surface of the ovary. A small central cavity is present. In a few sections a few red blood corpuscles can be seen in the central cavity. The granulosa is well preserved. Many granulosa cells, especially the centrally situated cells, show karyorrhexis. Some of the cells are vacuolar. Mitoses are not visible in the granulosa. The theca interna forms protrusions into the granulosa at some places. The blood vessels of the theca interna are very much dilated. Some of the granulosa cells are horizontally arranged (parallel to the theca interna); in some places, however, this arrangement does not exist. The interna cells may assume a polygonal shape with a round or oval nucleus. Such cells which are found around the blood vessels can not be distinguished from granulosa cells. Mitoses can be found in the theca interna cells. The line of demarcation between granulosa and theca interna is not sharp. (Two ruptured follicles.)

7. At Eleven and One-Half Hours After Copulation (Par-

* From the Pathological Laboratory of the University of Pennsylvania, on grant of the committee of scientific research.

1. I refer especially to the very complete reviews of Sobotta in the *Ergebnisse d. Anatomie u. Entwicklungsgeschichte*, vol. viii, 1898, and vol. xi, 1902, and to the paper of F. G. Clark, "Ursprung, Wachstum u. Ende d. corpus luteum nach Beobachtungen am Ovarium des Schweins und des Menschen. Arch. f. Anat. u. Physiol. Anat. Abteilung, 1898."

2. G. Belloy, "Recherches sur l'origine des corps jaunes de l'ovaire chez le rat et le cochon d'Inde, Comptes rendus de l'Association des Anatomistes," Paris, 1899.

3. J. Jankowski, "Beit. z. Entstehung d. corpus luteum d. Säugethiere." Arch. f. mikrosk. Anat., 1904, vol. lxi.

4. L. Loeb, "Ueber eine aus Lufteinglobe Gewebe bestehende Neubildung in dem Ovarium eines Kalbes." Virchow's Arch., vol. cxvii, 1901. "On Progressive Changes in the Ova in Mammalian Ovaries," Jour. Med. Research, 1901, vol. vi. "Ueber hypertrophische Vorgänge bei der Follikelatrophi, etc." Arch. f. mik. Anatomie u. Entwicklungsgeschichte, vol. lxxv, 1905.

adlin).—Two ruptured follicles. Place of rupture is still open; a small cavity is present. The opening at the place of rupture is very narrow. The follicle is very little prominent over the surface of the ovary at the place of rupture. The granulosa is well preserved. The granulosa cells are partly vacuolar. Cells of the inner half of the granulosa are drawn out into long threads. The nuclei in these cell threads become partially dissolved. A mitosis can be seen in the granulosa near the place of rupture. The direction of the spindle corresponds to the traction which is exerted toward the place of rupture. At one place two parallel rows of fusiform cells are seen extending into the granulosa from the theca interna. Mitoses are present in the theca interna near the border of the granulosa. The line of demarcation between theca interna and granulosa is not sharp, and some of the mitoses may therefore possibly belong to granulosa cells. Mitoses are present in the theca interna near the blood vessels and also at the border between theca interna and externa. Mitoses seen in the interna belong in part to dividing endothelial cells of capillaries. The theca interna cells may be very large, and those cells can not be distinguished from granulosa cells.

8. *At Twelve Hours After Copulation (Celloidin).*—Place of rupture is still visible; the cavity of the ruptured follicles preserved. Liquor folliculi is drawn out into fibers and some granulosa cells are drawn out in the same direction; the granulosa is well preserved. Hemorrhages are present in the tissue near the place of rupture. No mitoses are visible; the theca interna is very hyperemic.

9. *At Twelve and One-Quarter Hours After Copulation (Paraffin).*—Three ruptured follicles are present. The place of rupture is still open. The central cavity is preserved. Liquor folliculi (or a viscid fluid of a similar character) is present. In one follicle this fluid protrudes through the place of rupture. The red viscid mass in the cavity is at least in part produced through the disintegration of the inner granulosa cells, the nuclei of which may become dissolved. The granulosa cells of the inner layer can be drawn out into long fibers in which the nuclei may disappear. In the whole, the granulosa is well preserved, although it is in part vacuolar. Karyorrhetic cells are visible in the central part of the granulosa. A number of mitoses can be seen in the granulosa cells, in the outer, middle and inner layers of the granulosa. The diasters are arranged according to the direction in which the cells are drawn out. In the monaster stage the chromatin is sometimes drawn out in the same direction. In most places a sharp line of demarcation exists between the granulosa and the theca interna. Especially when the blood vessels and cells of the theca interna are running radially toward the granulosa it is difficult to determine where the granulosa begins. The distinction is easier when they are arranged in a horizontal direction. At places the line of demarcation between the two layers is still visible. Mitoses are present at the border between the two layers, and it is sometimes impossible to decide with certainty whether the mitoses belong to granulosa or to theca interna cells. The blood vessels are especially dilated near the place of rupture. Many mitoses are present in the interna. Some belong to endothelial cells of capillaries; others are found in cells near the blood vessels. Sometimes the central part of such a cell is in contact with the capillary, although the peripheral parts of the cell are removed from the vessel wall. It is frequently impossible to decide with certainty whether or not we have to deal in such cases with endothelial cells. The cells of the theca interna can be large and indistinguishable from the granulosa cells. Mitoses can also be present in endothelial cells of the blood vessels of the theca interna.

10. *At Twelve and One-Half Hours After Copulation (Paraffin).*—Place of rupture is still visible, but the follicle is no longer open. The granulosa cells of the opposite sides are in close contact; in this way the mouth of the follicle is closed. The defect in the granulosa at the place of rupture is repaired by the close attachment of the granulosa cells at the place of rupture. The ruptured follicle forms a little prominence over the surface of ovary at the place of rupture. A small cavity is present in the closed follicle. The granulosa cells are in part vacuolar. The nuclei of some of the inner gran-

ulosa cells become karyorrhetic, and some cells become dissolved. In many places the theca interna and granulosa are not distinct; the theca interna cells are large. At other places the line of demarcation is clear. The endothelial cells of the capillaries of the theca interna may become large and round. Mitoses are present in theca interna cells. Mitoses are also present in theca externa cells and in endothelial cells of the blood vessels of the theca externa. Blood vessels have not yet entered the granulosa.

11. *At Fourteen and Three-Quarter Hours After Copulation (Paraffin).*—Two ruptured follicles are present. The follicles are closed merely through the granulosa. A small cavity with a little granular matter is seen in the center of the follicles. Many polynuclear leucocytes are present in the central cavity. A number of cells become dissolved in the central cavity. Near the place of rupture dilated blood vessels and lymph vessels are visible. Extravasated blood is also present in the connective tissue near the place of rupture. The granulosa is well preserved; its cells are partially drawn out; no blood vessels and connective tissue can be seen in the granulosa. The line of demarcation is visible between granulosa and theca interna at some places, not at others. Theca interna cells are in part large and polygonal. The blood vessels of the theca interna begin to assume a radial arrangement. At such places the cells of the theca interna and granulosa present frequently the same appearance, and the theca interna and granulosa can therefore not be distinguished. At other places the blood vessels of the theca interna are arranged horizontally, and here theca interna and granulosa can be distinguished. Mitoses are present in different parts of the theca interna near the blood vessels. When they are situated at the borderline between theca interna and granulosa, it is difficult to say to what kind of cells these mitoses belong. A number of the endothelial cells of the capillaries of the theca interna are much swollen, and it is sometimes difficult to determine whether or not a mitosis seen in the immediate neighborhood of a capillary belongs to such an endothelial cell. Many blood vessels of the theca interna are much dilated. The leucocytes seen in the interna stain frequently strongly red with eosin; the polynuclear leucocytes nearer the central cavity take less eosin.

12. *At Fifteen and One-Quarter Hours After Copulation (Celloidin).*—The follicles are closed by granulosa. Connective tissue has not yet regenerated at the place of rupture. A small cavity is present in the center of the follicles. The central mass which stains red with eosin is in part produced by disintegrating granulosa cells. Very little or no blood is present in the central cavity; a few leucocytes are, however, visible in the central cavity. Small hemorrhages may be found in the connective tissue near the place of rupture. The granulosa is well preserved. A few cells are disintegrated in the center. No vessels are visible in the granulosa. The borderline between the granulosa and the theca interna is wavy. Where the interna forms a fold its blood vessels are dilated; they are also dilated near the place of rupture. Mitoses are present in the theca interna, and at the borderline between the theca interna and granulosa. At some places a sharp line of demarcation exists between the theca interna and granulosa; at others no sharp line is visible. The theca interna is partly also drawn out and its blood vessels are dilated.

13. *At Seventeen Hours and Fifty Minutes After Copulation (Celloidin).*—The ruptured follicles are closed by granulosa and by a homogeneous mass which stains red with eosin. Polynuclear leucocytes are present in this mass. The cavity of the follicle is small and does not contain blood. The follicle is somewhat prominent over the surface of the ovary. The lymph vessels in the albuginea near the place of rupture are dilated. In the inner zone of the granulosa there is a little karyorrhexis present. A part of the central granulosa cells are long drawn out and produce fibers when they disintegrate. No blood vessels or connective tissue can be seen in the granulosa. A part of the granulosa protrudes into the cavity. On the whole, the granulosa is well preserved, and mitoses can be seen in different parts of the granulosa. The boundary line between the granulosa and theca interna is wavy. The demarcation between these two layers is not sharp, neither is the theca interna sharply separated from the theca externa. Mitoses

are present in the interna, in the endothelial cells of blood vessels as well as near the blood vessels. Two ruptured follicles are seen.

14. *At Twenty Hours After Copulation (Paraffin).*—A small cavity lies in the ruptured follicle. The place of rupture is closed by a red staining homogeneous mass. Near the place of rupture extravasation of blood is seen in the connective tissue and the lymph vessels are dilated. Old corpora lutea are present in both ovaries. The size of the granulosa cells is about the same as fifteen hours after copulation. The granulosa presents a vacuolar appearance. No blood vessels or connective tissue are visible in the granulosa. At many places no sharp line of demarcation exists between the theca interna and granulosa. At others a layer which is very poor in nuclei separates both layers. The cells of the theca interna frequently can not be distinguished from the granulosa cells, and at some places the interna seems to have disappeared. Mitoses are present in cells of the theca interna and in endothelial cells of its blood vessels. At some places the latter take a radial direction toward the granulosa. At the border between theca interna and granulosa mitoses can be seen. In this region some cells show karyorrhexis. Near the place of rupture mitoses are also visible in the theca interna. Mitoses are likewise present at the border between theca interna and externa. Mitoses are, furthermore, found in endothelial cells of blood vessels of the theca externa near the place of rupture, at a place where many large capillaries are seen, which are in part perhaps newly formed.

15. *At Twenty-two Hours After Copulation (Paraffin).*—Two ruptured follicles are closed by cells which are large and resemble the granulosa and large theca interna cells. Capillaries are seen in this tissue. Spindle-shaped cells cover the large cells. The spindle cells may be either connective tissue cells or regenerating cells of the germinal epithelium. Mitoses are seen in spindle cells as well as in the large cells and in the capillaries and in the connective tissue of the albuginea near the place of rupture. In the connective tissue near the place of rupture red blood corpuscles are still present. The central cavity of the new follicle begins to enlarge; it is larger in the one follicle than in the other. Both corpora lutea are protruding over the surface of the ovary. No boundary line is visible between granulosa and theca interna; the cells of both layers show the same character. The number of cell layers and the size of the cells of the corpus luteum are not markedly different from those of former stages. The central granulosa cells are still vacuolar. From the neighborhood of the blood vessels of the former interna tubes are formed by two parallel layers of drawn-out, spindle-shaped cells, and extend into the former granulosa about half way from the central cavity or still further. The direction of these tubes is radial. In the endothelial cells of the former theca interna, which are often very large, mitoses are present; mitoses are likewise seen in cells lying directly in contact with the endothelial cells. In the theca interna and externa many leucocytes are seen, which stain strongly with eosin. The blood vessels of the theca interna and of the surrounding connective tissue are much dilated. Some old corpora lutea are present in these ovaries.

16. *At Twenty-four Hours After Copulation (Celloidin).*—A small prominence of the follicle is visible at the place of rupture. The follicle is closed by the granulosa; the granulosa at the place of rupture is covered by cells, which may be either connective tissue cells or cells of the germinal epithelium. The germinal epithelium, however, has certainly not yet completely regenerated. Only little blood extravasation is present at the place of rupture. The central cavity of the follicle is closed. The theca interna and granulosa can not very well be distinguished. Mitoses are present at the border between the two layers, and it is difficult to recognize to which of those two layers the mitoses belong. Blood vessels are only found in the outer zone of the follicle; they are not very dilated. No connective tissue or blood vessels are visible in the former granulosa.

17. *At Twenty-five Hours After Copulation (Paraffin).*—The cavity of the corpus luteum is much larger. Pressure is exerted on the cells which line the cavity; they are flat. The

number of cell rows or the size of the cells is not markedly changed. No line of demarcation between the granulosa and theca interna can be seen. The blood vessels of the theca interna are much dilated. Mitoses are present in the endothelial cells of the capillaries. Mitoses are also present in the long-drawn out cells which invade the granulosa. The tubes formed by these cells are occluded presumably by the pressure which is exerted by the fluid present in the central cavity. No blood is to be found in these tubes. The pressure exerted from the central cavity is probably also the cause that these rows of new-formed cells do not run in an absolutely radial direction, but in a more oblique way.

18. *At Twenty-eight and One-Half Hours After Copulation (Celloidin).*—Ruptured follicles are prominent over the surface of the ovary at the former place of rupture. The place of rupture is covered by large cells (former granulosa and interna cells) with blood vessels. Spindle cells are also present, which perhaps are regenerating cells of the germinal epithelium. Near the place of rupture mitoses are seen in the albuginea and also in the endothelial cells of the blood vessels. The central cavity is not large and contains a red-staining, granular substance. No line of demarcation between granulosa and theca interna is visible. In the direct neighborhood of the theca interna of the developing corpus luteum, blood vessels are dilated and mitoses are present in the endothelial cells. The capillaries in the peripheral part of the corpus luteum (in the former theca interna) send out processes toward the central cavity. These capillaries do not yet penetrate deeply into the corpus luteum. Mitoses are present in the endothelial cells of these capillaries and also in many cells in the direct neighborhood of the capillaries. It is sometimes difficult to decide whether or not such mitoses belong to endothelial cells. Mitoses are also present in the former granulosa, in cells which have the appearance of granulosa cells, which may nevertheless be immigrated cells. Besides distinct capillaries, we see spindle-shaped cells penetrating into the granulosa. These spindle-shaped cells may in part at least also represent advancing endothelial cells of capillaries. At some places the tubes formed by the ingrowing spindle-shaped cells (endothelial cells) may extend much further into the corpus luteum. The central part of the corpus luteum, near the central cavity, is free from such cells. The direction of the ingrowing cells is a radial one. In the outer part of the developing corpus luteum many polynuclear leucocytes which stain deeply with eosin are seen. Some karyorrhexis and karyolysis are visible in the cells lying in the central cavity. Three developing corpora lutea.

19. *At Thirty-one Hours After Copulation (Paraffin).*—The corpora lutea are closed; the place of rupture is covered by large cells of the character of granulosa and the large theca interna cells and by regenerating cells, which are probably derived from the germinal epithelium. In one of the developing corpora lutea the follicle forms a marked prominence over the surface of the ovary, the prominence consisting mainly in connective tissue rich in blood vessels. The central cavity has increased in size, cells which have the appearance of detached granulosa cells, which show karyolysis and become dissolved are visible in the central cavity; occasionally a string of cells becomes necrotic. A marked tension seems to exist in the central cavity. The cells lining this cavity are stretched very markedly. No distinction exists between granulosa and theca interna. Dilated blood vessels are visible at the border between theca externa and the developing corpus luteum. In the outer part of the latter, capillaries are seen. Mitoses are present in the endothelial cells of these vessels, as well as in the vessels at the border of the theca externa. Mitoses are also seen in cells in the close neighborhood of the capillaries. From these capillaries or from their neighborhood tubes are growing deeper into the former granulosa. In two of the developing corpora lutea these tubes remain open until they almost reach the central cavity; in the third they are not open so far. Mitoses are also seen in the cells of these tubes. The latter do not run entirely radially, but obliquely, and they frequently turn in a horizontal direction at the inner end. At one place a cell tube, which is without doubt a blood vessel, penetrates almost to the central cavity. In that corpus luteum

in which the cell tubes remain open, the course of the latter is more radial than in the other corpus luteum. One old corpus luteum is present.

20. *At Thirty-two and One-Half Hours After Copulation (Paraffin).*—The cavities found in this corpus luteum are very similar to those seen in the corpus luteum of the preceding stage. The developing corpus luteum is closed mainly through the granulosa cells, which occlude the former place of rupture. They are covered by cells, which are probably derived from the germinal epithelium. The similarity between the large granulosa cells and the regenerated cells of the germinal epithelium, which probably cover the wound, is, however, so great that it is impossible to distinguish with certainty between these two kinds of cells. Some of the covering cells degenerate. The connective tissue near the place of rupture is very rich in enlarged blood vessels, whose endothelial cells are frequently seen to be in mitotic division. Some extravasated blood can also be found here. The corpus luteum is not prominent in this ovary; in this case a retraction of the ovary is found at the former place of rupture. The central cavity is large and it contains a little blood; some cells are disintegrating in the central cavity. Granulosa and theca interna can not be distinguished. Mitoses are found in cells of theca externa and in endothelial cells of the capillaries. At places the blood vessels of the theca externa are very much dilated and the surrounding tissue is edematous. The cells which surround the central cavity are arranged in a concentric manner. The central granulosa cells are vacuolar and small; it appears as if the exudate present in the central cavity, by means of the pressure exerted by it, separated these cells. Cell tubes are extending from the periphery of the developing corpus luteum into the central part. In part they almost reach the central cavity. Others turn around at different heights. Some of these tubes are wide open; most of them are closed and seem to be compressed. In one developing corpus luteum they run in a radial direction, in the other their direction is more oblique. Mitoses are present in the endothelial cells of the blood vessels and in the cell tubes, which in all probability represent new-formed capillaries, although some of them may be ingrowing connective tissue. The cells of these tubes which are in mitotic division are sometimes found in the lumen of the tube; in other places at the outer side, and it is not always possible to exclude with certainty that a neighboring cell is in mitotic division. In the developing corpus luteum other mitoses are visible without any apparent connection with the capillaries. The capillaries in the outer part of the corpus luteum are much dilated, and they run in horizontal direction. An old corpus luteum is present.

21. *At Thirty-four Hours After Copulation (Paraffin).*—The place of rupture is covered by germinal epithelium, which, however, does not yet provide a perfect covering. The follicle forms a small prominence at the former place of rupture. The blood vessels near by are dilated. At one place the blood vessels of the theca externa are dilated and the tissue around these vessels is edematous. The capillaries in the neighborhood of the developing corpus luteum are dilated. In the capillaries of the young corpus luteum mitoses are present, even near the central cavity. At various points cell tubes, which are probably newly formed capillaries, give off branches; the cell tubes may split in several branches. The cells lining the central cavity are flat, perhaps as a result of the pressure exerted by the fluid in the central cavity.

22. *At Thirty-six Hours After Copulation (Celloidin).*—The central cavity is much enlarged. The fluid filling it seems to exert a strong pressure on the corpus luteum. The corpus luteum represents a vesicle with a relatively thin wall traversed in a radial direction by cell tubes and spindle-shaped cells, which latter, perhaps, are connective tissue cells. Mitoses are frequent, especially in the outer part of the corpus luteum; they are, however, also present in the inner half near the central cavity. They can be found in endothelial cells and in the spindle-shaped cells of the corpus luteum. They are also present in the direct neighborhood of the endothelial cells. A part of the capillaries run in a horizontal direction. The cells surrounding the central cavity are flat. They are probably granulosa cells, although it can not be excluded with

certainty that they are immigrated connective tissue cells. No line of demarcation exists between granulosa and theca interna.

23. *At Thirty-eight and One-Half Hours After Copulation (Paraffin).*—The corpora lutea protrude somewhat over the surface of the ovaries at the place of the former rupture. Long drawn-out cells, which are probably regenerating cells of the germinal epithelium, cover this prominence. The central cavity of the corpus luteum is very large. The shape of one corpus luteum is markedly irregular; protrusions of the corpus luteum into the surrounding tissue are formed. No demarcation exists between theca interna and granulosa. In the outer half open capillaries are present; they run radially or horizontally. In the inner half open tubes are also present, but frequently no lumen can be seen between the rows of spindle cells, which grow into the inner half and which may split in different directions. At one place large capillaries traverse almost the whole thickness of the corpus luteum. Mitoses are present in the endothelial cells of the capillaries and in cells lying in contact with the capillaries. The majority of the mitoses are found in the outer half. There are, however, mitoses present near the inner cavity. The cells of the outer half of the corpus luteum are different from the more centrally situated cells, insofar as the latter are more vacuolar than the former. Two old corpora lutea are present.

24. *At Forty-nine and One-Half Hours After Copulation (Celloidin).*—The corpora lutea are closed; they form small prominences over the surface of the ovary. The wound at the place of rupture has healed. It is covered by cells of the germinal epithelium, which have not yet regained their normal shape, but are still long drawn out. Beneath the germinal epithelium connective tissue of the albuginea is found. The central cavity is larger than at the former stage; new liquor folliculi is present. Spindle-shaped cells line the peripheral part of the central cavity. It is not certain that all of these cells are connective tissue cells; some may be granulosa cells drawn out by the pressure exerted by the liquor folliculi. Some of these cells become transformed into fibers. Leucocytes are present in the central cavity. Parallel rows of spindle-shaped cells, the majority of which are probably new-formed endothelial cells of capillaries, traverse the corpus luteum; they may penetrate to the central cavity or they may form loops enveloping groups of lutein cells. The direction of these capillaries is not entirely radial; they run in part in a horizontal direction, which is perhaps due to the pressure exerted by the liquor folliculi. Many mitoses are found in the endothelial cells and in cells in their immediate neighborhood. A part of the invading spindle-shaped cells may be connective tissue cells.

25. *At Fifty and One-Half Hours After Copulation (Paraffin).*—The corpora lutea are closed and covered by germinal epithelium. The latter cells are still spindle-shaped. Beneath the germinal epithelium the connective tissue of the albuginea covers the former place of rupture. One corpus luteum protrudes only slightly over the surface of the ovary, the other somewhat more. The central cavity is still present, although somewhat encroached on by connective tissue which envelops the central part of the cavity in concentric layers. The blood vessels pass through the whole corpus luteum so that at such a place very little or no lutein tissue is left. The outlines and shape of the corpus luteum may become very irregular, probably as a result of this ingrowth the corpus luteum of blood vessels forms irregular protuberances into the surrounding connective tissue. Probably because of the better blood supply the character of the corpus luteum cells changes; they are less vacuolar and stain well with eosin. The capillaries are still partially compressed; they run either radially or bend over into a horizontal direction; they may also split into two branches at different levels, even near the central connective tissue. They penetrate into the central connective tissue. Probably as a result of this new formation of capillaries a small hemorrhage with many leucocytes is found in the central cavity. A new formation of capillaries has apparently likewise taken place in the theca externa at a place where the latter protrudes into the corpus

luteum. Many mitoses can be seen in the endothelial cells of the capillaries in all parts of the corpus luteum, near the border of the theca externa as well as near the central cavity. Mitoses are also present in cells which are in direct contact with the capillaries. An endothelial cell in mitotic division may, with its fusiform ends, overlap neighboring endothelial cells. Mitoses are likewise seen in the cells of the connective tissue which fills the peripheral part of the central cavity. The large majority of all mitoses are certainly in endothelial cells. It sometimes appears as if the connective tissue cells of the central connective tissue might be derived from the endothelial cells of the capillaries. It is, however, not possible to prove it. Both corpora lutea have about the same character. Some old corpora lutea are present.

26. *At Sixty Hours After Copulation (Celloidin).*—Two corpora lutea of the same character are present. The periphery of the central cavity is filled by connective tissue and new-formed capillaries which penetrate into the connective tissue from the corpus luteum tissue proper. The latter is traversed by capillaries, mostly in a radial direction. The cells of the corpus luteum are somewhat larger than at earlier stages and stain well. The new-formed blood vessels have probably a favorable effect on the character of the lutein cells. Many mitoses are present in endothelial cells of the capillaries in different parts of the corpus luteum, and also in other cells which are probably lutein cells. Mitoses are also present in the connective tissue cells of the central cavity. Hemorrhages are seen in the central cavity and in the connective tissue of the central cavity probably as a result of the intrusion of new capillaries in the central cavity.

27. *At Seventy-four and One-Half Hours After Copulation (Paraffin).*—The corpora lutea are not much larger than in the former stage. The central cavity is not yet entirely filled out by connective tissue, which latter is arranged concentrically in the peripheral part of the central cavity. The corpus luteum cells are well formed. The cell membrane is distinct. Some vacuoles appear in cells, which are large and assume the character of typical lutein cells. Mitoses are present in endothelial cells of the capillaries and in cells near capillaries which are probably lutein cells. Mitoses are also visible in the central connective tissue. Many polymuclear leucocytes are found in the corpus luteum.

28. *At Seventy-seven and One-Half Hours After Copulation (Celloidin).*—The central cavity is almost entirely filled by connective tissue. Mitoses are seen in capillaries of the central connective tissue. The corpus luteum cells are larger than in former stages and are well formed. The corpus luteum as a whole is also larger. No distinction exists between granulosa and theca interna. Many capillaries traverse the corpus luteum. Mitoses are present in the endothelial cells of the blood vessels and also in cells near the capillaries. Such cells are probably lutein cells. Mitoses in lutein cells are found in the central as well as in the peripheral parts of the corpus luteum. Such mitoses may cause a protrusion of the endothelial cells of the capillaries.

29. *At One Hundred and One-Half Hours After Copulation (Celloidin).*—The central cavity is filled by connective tissue. In this connective tissue capillaries are present. The corpus luteum proper is relatively large, the central connective tissue at the place of the former central cavity occupies only a relatively small area. The corpus luteum cells are large and show well-formed vesicular nuclei. The cytoplasm is somewhat spongy; it stains purple with hematoxylin and eosin. Mitoses are present in endothelial cells of capillaries, as well as in lutein cells. One corpus luteum still protrudes somewhat over the surface of the ovary. The connective tissue covering the former place of rupture is compressed so that the typical albuginea has not yet been restored. Polynuclear leucocytes are present in the peripheral part of the corpus luteum. The character of a typical corpus luteum has been acquired.

30. *At One Hundred and Twenty-seven Hours After Copulation (Celloidin).*—The corpus luteum is typical. Large capillaries traverse the corpus luteum. The central connective tissue is small in quantity. The lutein cells stain well (purple). No mitoses can be seen. The corpus luteum forms many irregular protrusion into the surrounding tissue.

DISCUSSION OF RESULTS.

1. Ovaries of thirty guinea-pigs were examined. The ovaries of two animals showed no ruptured follicle. In one of these cases, six hours after copulation, the time elapsed after copulation had perhaps been too short for the rupture to take place. In the other the ovaries were examined nine hours after copulation and some hyperemia was found, but there was no indication that a follicle was near rupturing.

2. One of the questions most discussed is: Is the granulosa preserved after the rupture of the follicle, and does it take part in the formation of the corpus luteum? It can be stated with certainty that the granulosa remains preserved and takes part in the formation of the corpus luteum. A distinct defect in the granulosa can be noticed at the place of rupture nine and eleven and one-half hours after copulation. The cells are on the whole well preserved; in part they show some vacuoles. From twelve and one-half hours on, the defect in the granulosa is no longer visible, as the granulosa cells which surround the place of rupture form one continuous layer. The vacuolar character is especially noticeable in the centrally-situated cells. From fifty to sixty hours on, the lutein cells become somewhat larger and stain well. On the fourth day the cells show the typical appearance of the lutein cells. On the fifth day we see typical lutein cells with well-formed vesicular nuclei. The cytoplasm is spongy and it stains purple with hematoxylin and eosin. The change in the character of the cells seems to coincide with the penetration of the blood vessels into the former granulosa. When the whole corpus luteum is supplied with a network of capillaries the cells seem to get larger and to stain better.

3. Nine hours after copulation, a short time after the rupture has taken place, a part of the granulosa on the surface of the ovary is seen extending through the place of rupture into the peritoneal cavity. This is a frequent occurrence and tumors are not known to originate from such displaced cells. After twelve and one-quarter hours liquor folliculi penetrates through the place of rupture into the peritoneal cavity instead of granulosa; the place of rupture is now closed and internal pressure causes the granulosa to protrude partially into the cavity of the follicle. That can be seen seventeen hours fifty minutes after copulation.

4. Not all the granulosa cells remain alive. In the first hours after the rupture, and as late as eighteen hours after copulation, a number of centrally-situated granulosa cells show karyorrhexis and disappearance of their nuclei, followed by dissolution of the cells. At twenty hours we see some karyorrhexis at the border between the granulosa and theca interna, and as late as twenty-eight and one-half hours and thirty-one hours karyorrhexis and karyolysis and dissolution of some cells take place.

5. At an early period after the rupture some granulosa cells are long drawn out in the direction of the place of rupture. It appears as if traction were exerted on the cells in that direction. A number of such cells may degenerate, lose their nuclei and form fibers which stain red by eosin. A part of the red-staining mass which is present in the central cavity is therefore a direct product of degenerating cells.

6. In a similar way the viscid red-staining mass which fills the cavity of the follicle can be drawn out into fibers nine and twelve hours after copulation. At an early period after the rupture a red-staining, homogeneous mass or a somewhat granular material is still

present in the central cavity. From forty-nine and one-half hours on the liquor follicle is increasing again.

7. As stated, a number of granulosa cells are lost after the rupture of the follicle. To compensate for this loss mitotic divisions take place in granulosa cells. One mitosis is visible near the place of rupture eleven and one-half hours after copulation. At twelve and one-half hours we see a number of mitoses, diasters and monasters, in all layers of granulosa. The diasters are drawn out as the cells are drawn out—toward the place of rupture. At seventeen hours fifty minutes we see mitoses in different parts of the granulosa. In other specimens mitoses can be seen at the margin of granulosa and theca interna, and it is difficult to be sure whether some mitoses lie in the outer part of the granulosa or in the inner part of the theca interna. At twenty-six hours and at later stages we see mitoses in the cells which invade the granulosa from the theca interna. At twenty-eight and one-half hours we see in the area of the former granulosa mitoses in cells which may have been granulosa cells, but which possibly were immigrated cells. No mitoses could be seen in the granulosa nine, ten, eleven and twelve hours after copulation.

8. Soon after the rupture of the follicle, nine and ten hours after copulation, the boundary line between granulosa and theca interna form folds. At eleven hours the theca interna forms protrusions into the granulosa at some places. At eleven and one-half hours two parallel rows of fusiform cells are seen at one place to extend into the granulosa from the theca interna; at fifteen and one-half hours and seventeen hours fifty minutes the border between granulosa and theca interna is wavy. The theca interna cells may be drawn out in the same direction as the granulosa cells.

9. Soon after the rupture of the follicle the theca interna is very hyperemic. This condition is marked until fifteen hours after copulation. From twelve hours up to thirty hours the blood and lymph vessels near the place of rupture are dilated. The hyperemia extends to the connective tissue surrounding the place of rupture, especially to the albuginea. From twenty-two hours on, the blood vessels of the theca externa become dilated and the hyperemia passes to the connective tissue directly surrounding the corpus luteum. The hyperemia is quite marked thirty-one and thirty-four hours after copulation. This change in the area of hyperemia from theca interna to theca externa is perhaps due to the pressure exerted in the corpus luteum itself after the rupture has been closed more firmly.

10. Mitoses in the theca interna can be seen soon after the rupture up to the time when the theca interna and the granulosa can no longer be distinguished in the corpus luteum. From nine to twenty-four and thirty-one hours mitoses can be seen near the granulosa as well as in the peripheral part of the theca interna, in endothelial cells and in interna cells proper at the side of the capillaries. It is not possible in each case to decide with certainty whether a mitosis belongs to an endothelial cell or to a cell lying in close proximity to an endothelial cell. Mitoses in endothelial cells are present as early as eleven and one-half hours after copulation and can be seen at different periods up to thirty-two and one-half hours; at that time one can only approximately determine which part of the vessels belongs to the former theca interna and which belongs to the former granulosa. Between twenty and thirty hours mitoses are present near the place of rupture in endothelial cells as well as in other cells.

11. In the theca externa mitoses can also be seen in endothelial cells of blood vessels as well as in connective tissue cells. They are present twelve and one-quarter and twelve and one-half hours after copulation. The larger number of mitoses is visible in the theca externa, and in the blood vessels of the theca externa between twenty and thirty-two and one-half hours, perhaps in connection with the hyperemia which is more marked here at that period. At a later period, fifty and one-half hours after copulation, capillaries seem to be newly formed in the theca externa, and these capillaries enter the corpus luteum.

12. A number of cells of the theca interna become large and polygonal and can no longer be distinguished from the granulosa cells. At some places such cells can be seen between the blood vessels ten, eleven and twelve and one-half hours after copulation. The endothelial cells of capillaries may likewise swell. The interna cells assume more and more this character, and if the blood vessels of the interna run in a radial direction toward the granulosa, both layers are in part or in their entirety indistinguishable. At seven and one-quarter hours both layers can still be easily distinguished. From nine hours to twenty hours in many cases the line of demarcation can be made out. At fourteen and three-quarter hours they can, for instance, easily be distinguished where the theca interna cells and their blood vessels show a concentric arrangement to the follicle. At twenty hours a zone, which is very poor in nuclei, separates both layers. Where the direction of the capillaries is a radial one the distinction between the two layers is no longer possible. Both layers take part in the formation of the corpus luteum.

13. Mitoses in blood vessels of the theca interna can be seen very early after the rupture of the follicle. Twenty hours after copulation the blood vessels of the theca interna have a radial direction in some places. Twenty-two hours after copulation, tubes, formed by two parallel layers of spindle-shaped cells and with a radial direction, extend from the neighborhood of the blood vessels of the former interna half way or further into the former granulosa. At twenty-four hours we see blood vessels only in the outer zone of the follicle. At twenty-six hours cell tubes enter the former granulosa. At twenty-eight and one-half hours we see capillaries in the peripheral part of the corpus luteum (the former theca interna) sending out processes toward the central cavity. Cell tubes extend at some places far into the corpus luteum, the central part near the central cavity remaining free from capillaries. The direction is radial. At the same time we see spindle-shaped cells which represent endothelial cells of capillaries or perhaps connective tissue cells entering the former granulosa. At thirty-one hours capillaries are present in the outer part of the corpus luteum. From these outer capillaries or from their neighborhood cell tubes are growing deeply into the former granulosa. In two of the corpora lutea these tubes preserve a distinct lumen until they almost reach the central cavity and their course is radial; in the third corpus luteum they do not remain open so far and their course is more oblique. At the central end the cell tubes turn frequently in a horizontal direction. Between thirty and forty hours such cell tubes traverse the corpus luteum either radially or obliquely. They have a lumen in the outer part of the corpus luteum. In the inner half open tubes are also present, but frequently no lumen can be seen between the rows of spindle cells. The rows of spindle cells give off branches which run obliquely or horizontally and begin to en-

velop the corpus luteum cells. Besides the distinct cell tubes we see spindle-shaped cells without apparent connection with such cell tubes. As early as thirty-eight and one-half hours after copulation at one place large capillaries traverse almost the whole thickness of the corpus luteum. At forty-nine and one-half and at fifty and one-half hours capillaries pass through the corpus luteum to the central cavity. In the connective tissue which is present in the peripheral part of the central cavity the tubes may lose their lumen. These capillaries may split into two branches at different levels, even near the central connective tissue. At some places the blood vessels and connective tissue pass directly from the theca externa through the whole corpus luteum in a radial direction into the central tissue. At such a place very little corpus luteum tissue is left. At sixty hours and later many well developed capillaries pass through the corpus luteum.

Two questions arise: Are the spindle-shaped cells invading the granulosa, endothelial cells of capillaries, or are they in part ordinary connective tissue cells; and what is the origin of these cells? We see that these cell tubes originate near the capillaries of the former theca interna. The endothelial cells of the latter show at the same time mitoses. These facts make it probable that at least a great part, perhaps all, of these tubes are derived from the blood vessels of the theca interna. The fact that a lumen is not present in all cell rows might be explained by the pressure exerted at certain stages of the developing corpus luteum from the direction of the central cavity toward the periphery. Nevertheless it is likely that a part of the spindle-shaped cells are connective tissue cells, but I could not find any definite indication that the ordinary theca interna or theca externa cells infiltrate the granulosa. This fact, however, does not exclude the possibility that nevertheless such an infiltration might take place. At a later stage we see blood vessels and connective tissue pass from the theca externa to the central part of the corpus luteum.

14. Between thirty and forty hours mitoses are found in the newly-formed cell tubes of the corpus luteum. They are present in the central, and more frequently, in the peripheral part of the corpus luteum. Mitoses are also found in spindle-shaped cells which do not distinctly belong to the cell tubes, and in cells which lie in close approximation to the cell tubes. Not in every case is it possible to state with certainty whether a mitosis is seen in a cell belonging to the tubes described above or to a lutein cell lying near it, because during mitotic division the endothelial cells may change somewhat their position; they may protrude toward the lumen of the cell tubes as well as toward the outer side.

From fifty to sixty hours in all parts of the corpus luteum many mitoses can be seen in endothelial cells and in cells which are situated between the capillaries. These latter cells are probably lutein cells. Mitoses are also present in the connective tissue of the central cavity. The same conditions prevail up to 100 hours after copulation. At 127 hours mitoses are no longer visible.

15. The place of rupture of the follicle is open in the first few hours. It becomes occluded by granulosa cells twelve and one-half hours after copulation. Six hours later we find between the occluding granulosa cells a homogeneous mass which stains red with eosin. Perhaps some liquor folliculi was pressed out through the granulosa, or it is possible that it was formed through the degeneration of some granulosa cells. Between twenty-two and thirty hours we find the place of rupture occluded by larger corpus luteum cells which contain capillaries.

These large cells again are covered by spindle-shaped cells which may be in part at least regenerating cells of the germinal epithelium; there were perhaps connective tissue cells admixed. Mitoses can be found in the endothelial cells of the blood vessels as well as in the large cells.

Mitoses are also present in the connective tissue of the albuginea near by. Between thirty and forty hours no marked change takes place; the regeneration of the germinal epithelium becomes more marked, mitoses still occur and the surrounding connective tissue is hyperemic. The covering of the albuginea is, however, not yet perfect. About fifty hours after copulation the regenerating cells of the germinal epithelium are in part still somewhat spindle-shaped; beneath them the connective tissue is visible.

We have to assume that the first temporary occlusion by granulosa cells is caused by the pressure of the ovarian tissue surrounding the follicle, only somewhat later an actual wound healing takes place and leads to a solid closure of the opening.

16. That a pressure of the surrounding ovarian tissue is exerted on the ruptured follicle is perhaps also indicated by the fact that after eleven and one-half hours we find a more or less marked prominence of the ruptured follicle over the surface of the ovary. It is quite marked twenty-two hours and thirty-one hours after copulation. It is, however, not necessarily always present. We find even a retraction at the place of rupture thirty-two and one-half hours after copulation.

17. After the rupture of the follicle a small cavity remains preserved in the center of the follicle. As soon as the granulosa covering of the follicle becomes stronger and with the simultaneous ingrowth of capillaries the cavity begins to enlarge, slowly from twenty-two to thirty hours after copulation, more rapidly between thirty and forty hours. At forty-nine and one-half hours the cavity is large, new liquor folliculi is formed, and connective tissue becomes visible in the peripheral parts of the central cavity. At seventy-seven and one-half hours the cavity is almost entirely filled by connective tissue. At 100½ hours the central cavity is entirely filled by connective tissue which contains capillaries.

18. The increase in the size of the central cavity, combined with the increase in the quantity of the liquor folliculi, seems to exert a pressure on the structures surrounding the central cavity. This is indicated, for instance, by the flattening of the centrally situated granulosa cells, which is noticeable twenty-six hours after copulation. From now on flattened cells line the central cavity. At first they are in all probability granulosa cells. The flattened cells are probably granulosa cells between thirty and forty hours, although at that period connective tissue cells may be admixed. After fifty hours we have to deal mainly or exclusively with connective tissue cells. As indications of pressure exerted by the fluid of the central cavity may perhaps be considered the fact that at early periods the cell tubes traverse the corpus luteum, frequently not in a directly radial, but in a more oblique direction, and that from twenty-six hours on the blood seems to be pressed out of the vessels of the corpus luteum proper into the surrounding connective tissue for a certain period. This interpretation, however, is only a tentative one.

19. It is an interesting fact that the connective tissue which fills gradually the central cavity grows along the border of the cavity in a concentric direction and that in this way it gradually fills the central cavity. Mitoses can be seen in the connective tissue cells of the central

cavity at different periods, for instance, fifty and one-half and seventy-four and one-half hours after copulation. Cell tubes and distinct capillaries grow into it. At fifty and one-half hours cell tubes can be seen, and at sixty hours distinct capillaries are visible. Mitoses are also found in endothelial cells of capillaries. It is uncertain whether the mode of ingrowth of connective tissue is due to contact irritability of the connective tissue or to the pressure exerted by the fluid of the cavity.

20. At various periods the developing corpora lutea show a very irregular shape and they form protrusions into the surrounding connective tissue. Corpora lutea of that character were visible at thirty-eight and one-half hours, at fifty and one-half hours and 100½ hours. In one case (at fifty and one-half hours) it appeared as if the ingrowth of large blood vessels from the theca externa had caused those irregular formations.

21. The rupture of the follicle seems to be accompanied by very little hemorrhage. In a number of follicles we see a slight amount of extravasated blood in the connective tissue near the place of rupture as late as thirty-two hours after copulation. In some follicles we see a small number of red blood corpuscles in the central cavity eleven, twelve and fifteen and one-quarter hours after copulation. Later, at fifty and one-half hours and at sixty hours we see slight hemorrhages in the central cavity. This blood has, however, probably a different origin and is in all likelihood extravasated from the new-formed blood vessels of the corpus luteum.

22. Polynuclear leucocytes are seen in the central cavity, and in the theca interna soon after the rupture of the follicle, in variable numbers. The leucocytes in the central cavity take up the eosin to a much less degree than the leucocytes which have just left the vessels. Later, at forty-nine and one-half hours and fifty and one-half hours, we see leucocytes in the central cavity. Their presence is in part due to hemorrhage from the new-formed vessels.

23. The size of the corpus luteum and of the individual cells does not increase much at early stages of the developing corpus luteum. At seventy-seven and one-half hours, however, the corpus luteum begins to become distinctly larger and at 100½ hours the central connective tissue occupies a relatively small area as compared to the lutein tissue proper.

24. We found that the large theca interna cells and the granulosa cells assume the same appearance in the ruptured follicle of the guinea-pig. We are, therefore, unable to distinguish between the two kinds of cells composing the corpus luteum after development has advanced to a certain stage. We can state that the large cells which are characteristic of the corpus luteum are derived from two different sources, namely, from the granulosa and from the theca interna. Although these two varieties of cells can not be distinguished morphologically after the corpus luteum has been formed, we can not say with certainty that there might not exist some chemical or physicochemical differences. We have, however, no indications of the presence of such differences, which become especially doubtful as we know that both the large cells of the theca interna as well as the granulosa cells may contain lutein, and that both may show the same tendency to fatty changes.

25. If we now compare the formation of the corpus luteum with the atresia of the follicles we see two principal differences between the development of these two structures. (a) During the atresia of follicles the granulosa degenerates entirely; in the corpus luteum it remains preserved and the cells increase in size and in

number. A number of granulosa cells degenerate, however, even in the follicle which has ruptured. (b) In the atretic follicle the ingrowth of connective tissue predominates. A new formation of blood vessels does not take place, or is only very slight. In the corpus luteum, on the other hand, the new formation of blood vessels and their ingrowth into the former granulosa, and even into the central connective tissue, is very prominent.

For a further deeper analysis of these differences of growth, experimental investigations will be necessary.

A PHYSICO-CHEMICAL THEORY OF FERTILIZATION.*

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INTRODUCTION.

Within the last few years our conceptions of the physical state of protoplasm have undergone a series of changes in consequence of which a number of long-debated physiologic problems have been settled. No one advance has contributed nor promised to contribute more toward the understanding of certain cell phenomena, both from their morphologic and physiologic aspects, than the recognition of the colloidal nature of protoplasm.

It is our purpose in the following pages to show, if possible, that the fertilization of the ovum by the spermatozoön represents another cell process which finds its explanation in the colloidal nature of the egg protoplasm, and it is to the arguments which point in this direction that we wish to call attention. As it is impossible in the limited time allowed to meet all the various criticisms which might be raised against our theory of fertilization, we would refer the interested listener to our earlier and more extensive paper on this subject where the effort to meet these objections has been made.¹

As any adequate theory of fertilization must be applicable not only to the normal process of fertilization of the ovum by a spermatozoön, but also to parthenogenesis both natural and artificial, it may not be amiss to give here a table of the various kinds of fertilization with which we are thus far acquainted.

I. Normal Fertilization. (Egg and spermatozoön both present.)

1. Normal egg and normal spermatozoön.
2. Normal egg and incomplete spermatozoön.
3. Egg without nucleus and normal spermatozoön.
4. Polyspermia.

II. Parthenogenesis. (Egg without the spermatozoön).

1. So-called natural parthenogenesis, combined with such external conditions as increase in temperature, freezing, desiccation, etc.
2. Artificial parthenogenesis.
 - A. Through withdrawal of water: osmotic fertilization through electrolytes and non-electrolytes.
 - B. Through specific chemical methods:
 - (a) Through salts.
 - (b) Through acids (organic and inorganic).
 - (c) Through alkalis.
 - (d) Through other chemicals (alcohol, ether, chloroform, alkaloids, perhaps colloidal substances, etc.).
 - C. Through changes in temperature.
 - D. Through mechanical means (shaking, brushing, squirting, etc.).

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. Fischer and Ostwald: *Pflüger's Archiv f. d. ges. Physiologie*, 1905, cvi, p. 229.

DEFINITION OF THE TERM FERTILIZATION.

As the conception of fertilization is as various as the number of authors who have written on the subject, it becomes necessary for us first of all to define this term. In doing so we have to distinguish between a physiologic and a morphologic definition. The majority of definitions are of the latter kind. If we try to give a physiologic definition of the function of spermatozoon, we can say that it causes the egg to develop. With the other functions of the spermatozoon, such as its power to transmit the characteristics of the male, we have nothing to do. Physiologically, fertilization may, therefore, be defined as the impulse to development.

It is more difficult to give a morphologic definition of fertilization. Normally, this process consists in the entrance of a spermatozoon into the egg. The entire spermatozoon is, however, not necessary, for as soon as this cell has entered the ovum, the function of the tail-piece is at an end. Only the head and middle are of importance in causing the development of the egg. Of these two the head-piece grows steadily larger, becomes vesicular, and, as the male pronucleus, ultimately coalesces with the female pronucleus. Experiment has shown, however, that the head of the spermatozoon is by no means necessary in order to bring about the development of the egg, for by the proper methods it can be kept quiescent inside the ovum, and development nevertheless takes place. The power of bringing about the development of the ovum resides under normal circumstances in the middle piece of the spermatozoon. If we follow the history of this part we find that shortly after the entrance of the spermatozoon into the ovum the middle piece becomes surrounded by a light area which grows steadily in size and becomes very conspicuous, in that the granules of the egg protoplasm arrange themselves radially about it. We recognize in this description the formation of the astrosphere, and as will become apparent later, with the formation of the astrosphere the specific processes of fertilization are at an end.²

It is self-evident that parthenogenetic development, both natural and artificial, must differ morphologically in many respects from normal fertilization. In one particular, however, all, both normally and artificially, parthenogenetic eggs show the same histologic structure as normally fertilized eggs, namely, in the formation of the astrospheres. It has been shown by Zolison that in eggs which have been caused to develop parthenogenetically by artificial means every point of histologic similarity to normally fertilized eggs may be lacking save one, the formation of astrospheres. But in the very constancy of this structure we find another argument to show that the formation of the astrosphere is the most essential morphologic part of fertilization, and that it is it which gives the impulse of development to the egg.

We believe that we can show that all those methods which can be used to bring about the formation of an astrosphere in an egg or its development are such as can be employed to bring about the conversion of a liquid colloid or sol of the approximate constitution of egg protoplasm into a solid colloid or gel, and that conversely almost every method which physical chemistry has at its disposal to bring about the conversion of a sol into a gel, is or may be used to bring about the normal or artificial development of the ovum. Simple comparison of the table of fertilization methods given

above with the list of methods given below, which may be employed to convert a sol into a gel, already points in this direction. It must not be thought, of course, that the gelation in the ovum occurs exactly the same way as the gelation of a sol in a test tube. Certain external conditions influence the process within the egg, which modify it somewhat. These external conditions which make the formation of the astrosphere a specialized gelation will be discussed further on. It will be seen in this discussion that the ordinary laws of colloids suffice entirely, to our minds, to explain even this specialized gelation. As the final and perhaps strongest argument for the correctness of our ideas we shall use the experimental results of Bütschli, Alfred Fischer and Rhumbler, whose work on the formation of artificial astrospheres in certain colloids, such as albumose, gelatin, agar-agar, etc., has well merited the astonishment and praise of the scientific world.

PHYSICAL CHEMISTRY OF COLLOIDS.

According to most investigators, colloids differ from crystalloids, in that the former do not, on solution in water, form entirely homogeneous, that is to say, true solutions, but inhomogeneous ones. The colloid remains suspended in the solvent, or to put it more correctly, the colloidal solution represents a mixture of two substances, which are only partially miscible in each other. Between the typical colloids, on the one hand, which have practically no osmotic pressure, and do not alter the boiling or freezing point of the solvent in which they are suspended, and the typical crystalloids on the other, which possess all these properties to a most marked degree there are, of course, a large number of intermediate bodies, which lean more or less strongly toward one or the other of these divisions.

A colloid has the power of existing in two states, a so-called soluble or sol state, and an insoluble or gel state. When the colloid is in the latter condition it is often said to be coagulated, precipitated or gelatinized. Certain differences, no doubt, exist between these terms, and the physical states of aggregation which they represent, but as physical chemists still use the terms indiscriminately and synonymously, we shall do so, too.

The change from the sol state to the gel is determined by a number of external conditions. These are tabulated in brief below.

1. *Effects of Temperature.*—A colloidal solution is capable of existing in the sol state only within certain limits of temperature. When these limits are exceeded the colloid passes from the sol into the gel state. In regard to their behavior toward changes in temperature we distinguish between two classes of colloids. There are those first of all which pass from the sol to the gel state when the temperature is increased to a certain point. To this class belongs, for example, egg albumin, which coagulates on heating. A second class of colloids made up of those which pass into the gel state through a decrease in temperature. To this class belong the ordinary gelatins, which become solid on cooling below a certain temperature. As an increase in the temperature will cause the gel in the latter case to return to the sol state, this class of colloids is spoken of as heat-reversible colloids in contrast to the former group in which a decrease in the temperature will not re-establish the liquid state of the colloids. Egg albumin is, therefore, a heat irreversible gel. In regard to the behavior of colloids toward other external conditions also, the process of gelation is said to be reversible or

2. Bover's Das Problem d. Befruchtung, Jena, 1902, p. 8

irreversible. It is of interest to note in passing that a heat reversible colloid which has once passed into a gel can not be reconverted into a sol by only a slight increase in temperature above the point at which gelation occurred. Ordinarily, gelatin, for example, which gels at 0 C., does not become liquid again on heating until 26 C. is reached. Within the limits of temperature, which are of biologic importance, a heat reversible colloid, therefore, behaves as an irreversible one, a fact of importance in our further considerations.²

2. *Effects of Concentration.*—A colloid can exist as a sol only within certain limits of concentration. It has been shown by Gutfier and Resenscheck that a colloidal solution of gold is precipitated if the water is allowed to evaporate from it in a vacuum or under the influence of heat. It must not be forgotten, however, that the evaporation of the water is associated with an increase in the concentration of the electrolytes, which may be present as impurities in the colloidal gold. As the next paragraph will show these can by themselves bring about a precipitation of a sol if sufficiently concentrated, so that if not entirely responsible these electrolytes might at least aid in the precipitation of the colloid, the concentration of which was being raised by evaporation of the water holding the colloid in suspension. That the increase in the concentration of the colloid by itself plays an important rôle in its coagulation is shown, however, by the fact that a sol can be precipitated the more easily through some external agency the more concentrated it is.

3. *Effects of Salts.*—Sols can be converted into gels through the addition of salts. It has been shown by Hardy that the coagulating power of a salt is determined by the valency and the sign of the charge of its ions. The coagulating ion always has an electrical charge opposite to that of colloidal particle. In this way positively charged ions coagulate only negatively charged colloidal particles. The coagulating power of an ion increases with its valency, not in a simple proportion, but according to the following formula, in which R represents the valency and K the coagulating power:

$$R^1:R^2:R^3::K^1:K^2:K^3$$

What exceedingly small traces of salts suffice to bring about the coagulation of certain colloids may be imagined when we cite the fact that at 16 C. colloidal ferric hydroxid is precipitated by potassium sulphate when 1-gram molecule of the salt is present in 4.000 liters of water.⁴

4. *Effects of Acids and Alkalies.*—Acids, both organic and inorganic, and alkalies can also cause the coagulation of a sol, but as in the case of salts, their effect is dependent on the electrical change of the colloidal particles. Electro-positive particles are precipitated by alkalies and electro-negative ones by acids. Generally speaking, no amount of an acid will precipitate an electro-positive colloid, and no amount of an alkali will coagulate an electro-negative one.

5. *Effects of Non-Electrolytes.*—A large number of non-electrolytes are known which cause the coagulation of sols. We will mention here only ether, alcohol and chloroform which interest us particularly. The coagulating power of these substances is familiar to everyone from their daily use in physiologic chemistry for the precipitation of proteins, etc.

6. *Effects of Colloids on Colloids.*—One colloid may be used to coagulate another. In order that this may

occur, however, it is necessary that the two have opposite electrical charges. If they are charged with the same kind of electricity they do not affect each other.

7. *Effects of Mechanical Agitation.*—One of the commonest means of bringing about the coagulation of a sol, and one which is in nearly all cases connected with the means given above for causing a sol to pass into the gel state, is mechanical agitation. It is a generally known fact that colloids to which, for example, a salt has been added, often require hours or days before coagulation sets in, but pass at once into the gel state if they are slightly shaken. In considering the effects of mechanical agitation it is to be remembered that it is the more effective the nearer the colloid is to the critical point; that is to say, the point at which the sol passes into the gel.

HISTOLOGICAL STRUCTURES OF COLLOIDAL SOLUTIONS.

Having outlined the external conditions which determine the change from the sol state to the gel, we must discuss briefly the structures of colloidal solutions in these two states. Certain investigators believe that sols are optically homogeneous solutions. Mere microscopic examination is, however, sufficient to show that many sols are inhomogeneous, and, as has been shown by recent investigations, aided by the ultra-microscopic methods of Sidentopf and Zsigmondy, even those sols which were formerly considered homogeneous are, according to the more generally accepted opinion, really inhomogeneous. Sols represent suspensions of exceedingly finely divided insoluble particles. The size of individual particles varies not only in colloidal solutions of different substances, but even in sols of the same substance.

Gels differ markedly in structure from sols. It has been shown by the work of Fleming, Bütschli, Alfred Fischer and Hardy that most, if not all, coagulated colloids have either an open net, a honeycomb or a fibrillar structure in the spaces of which the liquid portion of the colloid is found. The fibrils or the meshes of the net or honeycomb are made up of the colloid containing but little solvent, while the interstices are filled with a liquid composed of the solvent and a little colloid. It is not without importance that the liquid filling the interstices is not composed of pure water, but contains some, even though it be only a small amount, of colloidal material.

The change from the sol state to the gel is characterized by a change in the special arrangement of the suspended particles. While in a sol the colloidal particles are distributed evenly through the solvent, they are clumped and arranged in rows when gelation occurs. This rearrangement of the suspended particles gives rise to the gel structure. Because of this approximation during gelation of the suspended particles, the latter are no longer able to hold as much solvent as before and fluid is given off. This separation of liquid usually evidences itself in an external separation of the solvent from the gel. A familiar illustration is found in the expression of the serum from coagulated blood, which represents the formation of a gel. At other times special means, such as slight pressure, are required to make the separation an apparent one.

Whether an open net or a honeycomb structure is formed is dependent on a number of circumstances. Most colloids give rise to an open-net structure, where they coagulate. Those colloids which are present in protoplasm and which coagulate to form a honeycomb structure (for example, gelatin) will produce an open-

3. Hardy: Jour. of Physiology, 1899, xxiv, p. 119.

4. Hardy: Loc. cit., p. 398.

net structure when not too highly concentrated. It seems probable, therefore, that in protoplasm these colloids also give rise to an open-net structure.

We have yet to discuss the origin of the fibrillar structure. This represents only a modification of the other two, and comes to pass when a certain external factor, a mechanical one, comes into play. A fibrillar structure is formed when gelation occurs under a directive stress. According to Bütschli, for example, a fibrillar structure can be produced in gelatins, which, under ordinary circumstances, show a honeycomb structure, if the colloid is stroked with a glass rod while cooling.

Also of interest in our further considerations is the time required for the conversion of a sol into a gel. Generally speaking, we can say that this change occurs very rapidly. By this is meant that when the external gel-producing agent, for example, the temperature, has reached the critical point, sol passes into the gel in an exceedingly short time or instantaneously.

THE PHYSICO-CHEMICAL NATURE OF FERTILIZATION.

We wish to show now that the formation of the astrosphere, or what amounts to the same thing, according to our definition, the process of fertilization, represents a gelation occurring under special conditions. In order to do this it must be shown first of all that the protoplasm of the normal unfertilized egg exists in the sol state. That the protoplasm of the egg represents a colloid or a mixture of colloid, we can now regard as settled. That this colloid or mixture of colloids exists in the sol state is rendered probable by the following morphologic and physico-chemical facts. The protoplasm of the unfertilized egg is stated by various observers to be either entirely homogeneous or finely granular. The coarser protoplasmic inclusions, such as oil droplets, etc., are, of course, not of importance in our discussion. The structure of the resting egg is, therefore, the same as that given above for the structure of sols in general. In apparent contradiction to this homogeneous or finely granular structure of protoplasm stands the observation of Bütschli that all protoplasm has a honeycomb structure even in the uncoagulated state. This honeycomb structure of the uncoagulated state must not be confounded with the honeycomb structure which appears in many coagulated colloids. The structure attributed by Bütschli to uncoagulated protoplasm is entirely compatible with physico-chemical observations, for, as has been pointed out by Quincke, such a structure is the logical result of the intimate mixture of two or more colloids of different surface tensions. That several colloids are present in the egg is indicated by the fact that a number of different colloidal substances (different proteins) can be extracted from the egg, and also by the morphologic fact that different portions of the egg protoplasm do not have the same optical activity.

From a physico-chemical standpoint the sol nature of unfertilized egg protoplasm is found in its remarkable fluidity, a property which is markedly diminished when the astrospheres are formed. Dr. Frank Bancroft has called our attention to fertilization experiments in marine material, in which the astrospheres formed after fertilization of the egg could be squeezed out of the egg as solid plugs. This fact is at once an argument for the liquid character of egg protoplasm in general and the more solid character of the astrosphere.

Histologic study of the process of fertilization brings further evidence, which indicates that we have to do with a process of coagulation in the egg. This is shown by the fact that after the entrance of the spermatozoön,

or after the initiation of parthenogenetic development by any means whatsoever, the previously homogeneous or finely granular egg protoplasm becomes more coarsely granular, and little by little the fibrils of the astrosphere are formed. This description corresponds with that given above, of the formation of the open-net and fibrillar structure in a colloidal solution undergoing coagulation. In certain eggs various observers have described the presence of a histologic structure even in the resting egg. In these cases also, however, the granules previously present become larger and the protoplasmic structures more distinct, besides assuming a definite orientation when the astrospheres are formed.

It was pointed out above that the process of coagulation in a colloid is attended by a liberation of water, which frequently evidences itself by an external separation of colloid and solvent. Evidence of such a separation of colloid and water is found in the formation of the fertilization membrane in the eggs of many species, which have been made to develop either by natural or artificial means. When the fertilization membrane is formed, the volume of the egg protoplasm proper becomes less and the egg transmits light less easily than before.

The fact that no fertilization membrane is formed in many eggs can not be taken as an argument against the correctness of the idea that the process of fertilization is essentially a process of coagulation for certain eggs, such as those of the sea urchin, which always show a fertilization membrane when fertilized by a spermatozoön, may not do so when made to develop artificially. Yet even these parthenogenetic eggs may be made to show fertilization membranes if only certain salts are present in the sea water.

We have yet to explain a marked difference between the process of coagulation of an ordinary colloid in a test tube and the formation of the astrosphere, namely, the specific orientation of the gelation in the egg. The chief reason for this difference is probably to be sought in the fact that in the egg the coagulation takes place from one point only, while in a test tube it occurs simultaneously from an innumerable number of points. Through this localization of the coagulation in the egg the ordinary process of gelation is markedly modified. The gelation spreads in a wave radially from the coagulating point. Those portions of the protoplasm which lie nearest this point are the first to coagulate. The coagulation is, however, not without design as when an ordinary sol gels, but occurs in definite directions so that the radiating structure of the astrosphere is formed. It was shown above that fibrils are produced whenever the ordinary coagulation of a colloid is modified by being made to occur under a directive stress. We believe that the formation of the fibrils of the astrosphere in the egg can be explained in the same way as the formation of a fibrillar structure in the coagulation of any colloid. The sources of the directive stress in the egg during the formation of the astrosphere can not be discussed in detail here, but changes in surface tension, currents produced through the separation of colloid and solvent, etc., during the coagulation may by themselves or together serve as the source of this directive force.

The collection of coagulated particles first about the coagulating point (the middle piece of the spermatozoön in normal fertilization) gives rise to the clear area found in the center of every astrosphere. The gradual growth of the astrosphere is an expression of the gradual spread of the process of coagulation from the center of the

astrosphere outward. It is interesting to note, finally, that the time required for the production of an astrosphere in an egg and an ordinary coagulation in a sol is about the same.

The facts given above lead us to believe that *the formation of the astrosphere, or what amounts to the same thing, according to our definition, the process of fertilization, is identical with a localized and oriented gelation.*

In our concluding paragraphs we shall bring as further evidence that the laws governing colloidal solutions actually suffice, according to our minds, to explain the by-no means simple structure of the astrosphere, the work of Bütschli, Alfred Fischer and Rhumbler. These observers have produced artificially, in unorganized colloids, by the same methods and means which have been employed to produce these structures in eggs, astrospheres, not unlike those found in the ovum. Our theory serves also to harmonize the results obtained by these observers, which, according to them, stand in apparent variance with each other. The recognition of the fact that their experiments are made with colloids and that the means employed to produce the artificial astrospheres are all such as the physical chemist may use to convert sol into gels is the harmonizing element.

In the following table, based on the one formerly given, the attempt is made to point out the coagulating factor in each of the processes of normal or artificial fertilization with which we are thus far acquainted. Perusal of this table will show that all the physico-chemical methods already enumerated for producing gelation in colloids have been successfully used in the production of astrospheres in egg protoplasm, or what amounts to the same thing, for the normal or artificial fertilization of the egg. It indicates at the same time how Bütschli, Alfred Fischer and Rhumbler have succeeded in employing nearly all these methods for the artificial production of astrospheres in unorganized colloids as well.

1. NORMAL FERTILIZATION: EGG AND SPERMATOZOON BOTH PRESENT.

1. *Normal Egg and Normal Spermatozoon.*—The gel-producing factor resides in the spermatozoon. The entire spermatozoon is, however, not necessary, as only the head and middle piece enter the egg, the tail-piece disappearing before an astrosphere is produced. Histologic examination shows that the formation of the astrosphere starts from the middle piece, while the head-piece swells markedly to form the male pronucleus.

2. *Normal Egg and Incomplete Spermatozoon.*—It has been shown by Boveri that the middle piece alone is necessary for the production of an astrosphere. Under certain experimental conditions the head-piece of the spermatozoon can be kept quiescent in the egg, the middle piece alone leading to the formation of an astrosphere.

3. *Egg Without Nucleus and Normal Spermatozoon.*—In this case a normal spermatozoon enters an egg fragment containing no nuclear substance. The formation of an astrosphere occurs in this case also.

4. *Polyspermia.*—Under certain experimental conditions several spermatozoa may enter an egg. Multiple astrospheres corresponding with the number of spermatozoa are produced under these circumstances.

The gel-producing factor in all these cases of normal fertilization is the spermatozoon, or more accurately, the middle piece of this cell. It might be thought that the nucleus, either of the egg or the spermatozoon, plays a necessary rôle in the formation of the astrosphere. That

this is not the case, however, is shown by the experiments of Morgan, who has been able to produce astrospheres artificially by chemical means in egg fragments containing no nuclear matter.

In attempting to point out where in the foregoing table the spermatozoon, or more properly, the middle piece, belongs, we have to remember that the spermatozoon contains at least two or three such factors:

A.—The middle piece is certainly a colloidal substance, or a mixture of such; that is to say, we might have to do in fertilization with the action of one colloid on another. The colloids of the spermatozoon might be enzymatic in character. Familiar examples of coagulating enzymes are pepsin, trypsin and pepsin, which are able to bring about the coagulation of albumoses and peptones. The possible enzymatic character of the spermatozoon has already been pointed out by Loeb.⁵ His conception of the process of fertilization is, however, entirely different from our own in that he believes the fertilizing agent to act as a mere accelerant of a process which occurs in the egg even in the absence of such a fertilizing agent.

B.—The middle piece contains, as does the entire spermatozoon, certain salts, which might act together with the colloidal substances to produce a coagulation. That the presence of these salts in the spermatozoon might play some rôle in the process of fertilization has also been pointed out by Loeb.

C.—Mention must finally be made of the possible mechanical rôle of the movements of the tail piece of the spermatozoon. The mechanical action of the spermatozoon has been especially emphasized by Meltzer,⁶ though he did not, of course, attempt to explain the nature of the change which it produced in the egg.

Which of the gel-producing factors mentioned above plays the chief rôle in the formation of astrospheres can not be determined from the experimental facts which we have at our disposal up to the present time.

We have yet to show that artificial astrospheres can be produced in unorganized colloidal solutions through the addition of another colloid. The best illustrations of this of which we know are certain experiments of Alfred Fischer and Bütschli. The former observer was able to produce artificial astrospheres in gelatin, agar-agar and especially deutero-albumose through the action of dried elder pith nuclei. Bütschli has produced astrospheres artificially in gelatin by sowing into it particles of dried egg albumin. The illustrations are, however, not entirely free from criticism, for the colloids used to produce the astrospheres were not entirely salt free.

II. PARTHENOGENESIS: EGG WITHOUT SPERMATOZOON.

1. SO-CALLED NATURAL PARTHENOGENESIS.

So-called natural parthenogenesis is combined with such external conditions as increase in temperature, freezing desiccation, etc. This method of fertilization is characterized by the fact that the formation of the astrosphere is not brought about through a clearly demonstrable external factor, but that the gel-producing agency resides within the egg protoplasm itself, even though at times the formation of the astrosphere occurs in conjunction with certain external conditions. In parthenogenetic development the polar bodies, which are not thrown off as in ordinary fertilization, seem to be able to assume the gel-producing function of the middle piece of the spermatozoon. We are dealing in this case again with the action of a colloid on a colloid, though

5. Loeb: *Am. Jour. Physiology*, 1903, vol. III, p. 470 et seq.

6. *Am. Jour. of Physiology*, 1903, vol. IX, p. 251

the possibility of the co-operation of certain salts present in these polar bodies must not be overlooked. It is interesting to note that in nearly all cases of natural parthenogenesis observed thus far the development of the egg is combined with such external conditions as increase or decrease in temperature, desiccation, mechanical agitation, etc., all of them conditions which may bring about the conversion of a sol into a gel.

2. ARTIFICIAL PARTHENOGENESIS.

A. Through withdrawal of water.

B. Through specific chemical methods.

a. Through Salts.—The most general method of producing artificial parthenogenesis is the osmotic method discovered by Morgan and further developed by Loeb. In attempting to find the gel-producing agent responsible for the astrospheres in this method of fertilization, the one which first comes to mind is the increase in the concentration of the colloids in the egg. The extraction of water from the egg, however, brings about an increase in the concentration of the salts at the same time. Since we are not yet acquainted with an illustration from the realm of physical chemistry of the coagulation of an absolutely pure, that is to say, salt-free colloid, through increase in its concentration alone, we are inclined to believe that in osmotic fertilization we are really dealing with the effects of specific salts.

This view is supported by the biologic fact that artificial parthenogenesis can be produced through specific salts as indicated in the next paragraph, and by the physico-chemical fact that the coagulation of colloids is produced much more readily and generally through salts than by osmotic means. What has been said above holds for osmotic fertilization, whether brought about through electrolytes or non-electrolytes. Of the many substances which have been used for this purpose, we need mention only magnesium chlorid, potassium chlorid, sodium chlorid, etc., solutions of different sugars, glycerin, urea, etc.

We are acquainted also with the formation of astrospheres in unfertilized egg through the action of specific salts. In these water is not given off by the egg, but the entrance of these salts into the egg causes the formation of astrospheres. Under this heading we can mention the parthenogenetic development of chetopterus through the addition of traces of potassium chlorid as first found by Mead and later worked out in detail by Loeb; the parthenogenetic development of amphitrite through the addition of calcium chlorid or calcium nitrate, as found by Martin H. Fischer, as well as the development of strongylocentrotus eggs, as found by Herbst, through traces of silver salts.

It is of interest, finally, to make brief mention here of experiments by Morgan, which show that in artificial parthenogenesis, as well as in normal development, the nucleus plays no important rôle in the formation of the astrosphere. Morgan has succeeded in producing astrospheres in egg fragments containing no nuclear matter by treating them with concentrated salt solution of various kinds. As examples of the artificial production of astrospheres we may cite the following: Particles of calcium sulphate in gelatin (Bütschli), diffusion of mercury chlorid or platine chlorid, or the addition of tiny crystals of mercury chlorid, potassium bichromate, etc., to albumose solutions (Alfred Fischer).

b. Through Acids (Organic and Inorganic).—Tichomiroff was the first to produce parthenogenesis arti-

ficially, and this in Bombyx, which he succeeded in making develop through treatment with strong acids. Further experiments in this direction have been made by Loeb and Neilson with star fish eggs, and more recently by Delage. The acids used have been H_2SO_4 , HCl , HNO_3 , H_2CO_3 , etc. Organic acids, when sufficiently concentrated, are equally effective, as has been shown by Loeb. As an example of the artificial production of astrospheres in unorganized colloids through acids, we may cite the work of Alfred Fischer, who was able to produce these structures by allowing osmic or picric acid to diffuse into albumose solutions.

c. Through Alkalies.—J. Loeb has been able to produce cell division in certain marine eggs through the addition of various to the sea water. As a parallel illustration of the production of astrospheres through alkalies we may mention Alfred Fischer, who succeeded in producing these histologic in faulty acid albumins through the addition of alkalies.

It is interesting to note that astrospheres have been produced in eggs of the same species through the addition of either acid or alkalies. Alfred Fischer has found this possible, also in solutions of unorganized colloids. From a physico-chemical standpoint, it seems strange at first sight that acids and alkalies should both be able to produce the same effect in the species of egg. The paradox may, however, be explained by an observation of Hardy, who has found that an alkaline sol of albumin is converted into a gel through the addition of an acid. If more acid is added, however, the gel is redissolved, and an acid sol of albumin is produced. The acid sol of albumin may then again be reconverted into a gel, which can then be changed to an alkaline sol by the addition of an alkali. This indicates how a gel can easily be produced through either the addition of an acid or an alkali.

d. Through Other Chemicals (Alcohol, Etc.).—Mathews has succeeded in causing the parthenogenetic development of sea urchin eggs by treating them transitively with chloroform, ether or alcohol. Mention must also be made under the heading of the work of R. Hertwig, who several years before noted a production of astrospheres in the same species of egg after treatment with strychnin. We are dealing in all these substances with well-known precipitants of colloidal solutions.

e. Through Changes in Temperature.—The parthenogenetic development of star fish eggs has been produced through a lowering of temperature to near the freezing point by Greeley. In discussing the physiologic effects of decrease in temperature, we have to consider two processes. If the temperature is decreased to the freezing point ice is formed, in consequence of which the concentration of the colloids of the egg or the salts dissolved in the protoplasm is increased. Either of these conditions it will be remembered, is effective in determining the formation of gels. If the temperature is not reduced to the freezing point we can look on the coagulation of the colloids of the egg only as a gelatin of a heat-reversible sol (such as gelatin). As Greeley kept the eggs at a low temperature for only a short time, it might be thought that the effects of the lowering of temperature would be reversed as soon as the eggs were returned to room temperature. We learned above, however, from the experiments of Hardy that a heat-reversible gel does not return to the liquid state after gelation when the increase in temperature is only a few degrees.

Mathews and Delage have succeeded in producing cell division in certain marine animals through an increase of temperature. The experiments of Delage are

7. Tichomiroff: Arch. v. Anat. u. Physiologie, 1886, supp. vol. p. 35, and Zoölog., Aug., 1902, p. 25.

not entirely free from criticism. In this case the gel-producing factor is, of course, the increase in temperature.

Through a decrease in temperature Bütschli and Rhumbler have succeeded in producing astrospheres in gelatins, which simulate in a truly striking way those found in developing eggs.

D. Through Mechanical Means.—The first to produce artificial parthenogenesis through mechanical means was Tichomiroff, who succeeded in causing the unfertilized eggs of Bombyx to develop through brushing. Mathews was able to show that the eggs of star fish will develop artificially if shaken or squirted through a pipette. These results have been confirmed and shown to hold true also for the unfertilized eggs of amphitrite and chetopterus by Martin H. Fischer. Through the work of Scott it has been shown that at least two periods exist in the life of the unfertilized amphitrite eggs, during which mechanical agitation is most effective in bringing about their development. The rôle of mechanical agitation in bringing about the precipitation of colloidal solutions has already been discussed above, and needs no further comment here.

Loeb has expressed the view that all unfertilized eggs possess a certain tendency to develop parthenogenetically, that is to say, without being acted on by any external agent. Certain other authors have expressed a belief that it is only necessary to expose the unfertilized eggs of various marine animals, especially star fish, to certain "abnormal" conditions. The latter view is certainly incorrect. We believe that in all cases specific external conditions determine the development of the unfertilized egg. Or to express this in terms of our theory, we can say that the colloidal solutions of the egg protoplasm lie exceedingly near their critical point, that is to say, their coagulation point. To indicate how exceedingly slight these external conditions may be which determine the parthenogenetic development of the egg, we may quote the experiments of Herbst, who found that only after the most careful cleansing "with acids and stiff brush" could he free his dishes which had contained traces of silver salts, from this chemical sufficiently to prevent it from exerting a fertilizing effect. Even the most careful transference of amphitrite eggs from one dish to another is sufficient frequently to cause the development of a certain per cent. of unfertilized amphitrite eggs.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CATHARTICS.

CHAPTER VII.

The Anhydrid Group.

The active principles in drugs of this group are resinous in character; their chemistry is obscure, but most of them are known to be glucosides. They cause violent irritation and even death in excessive doses and are not commonly used alone unless a strong irritant action is desired. Since they produce very watery stools, they are sometimes used in dropsy, or to sweep away parasites—for instance, after a narcotic tenifuge, such as aspidium.

JALAPA.—U. S.—Jalap, the dried tuberous root of *Ergoninum purga*, gathered in the neighborhood of Jalapa, Mexico, whence its name. The drug was introduced into Europe about 1609; it is now official in all pharmacopeias. The drug should contain not less than 8 per cent. of total resin, but not more than 1.5 per cent. of resin soluble in ether.

Average dose (in powder): 1 gm. (15 grains).

PULVIS JALAPÆ COMPOSITUS.—U. S.—This is a mixture of 35 parts of jalap and 65 parts of potassium bitartrate.

Average dose: 2 gm. (30 grains).

RESINA JALAPÆ.—U. S.—That part of the alcoholic extract which is insoluble in hot water.

Average dose: 0.12 gm. (2 grains).

COLOCYNTHIS.—U. S.—The peeled dried fruit of *Citrullus colocynthis*, a species of cucumber. As "Kolokynthis," this drug was described by Dioscorides and appears to have been well known even before his time; since then it has been in constant use.

Average dose: 0.05 gm. (50 mg. to 1 grain).

EXTRACTUM COLOCYNTHIDIS.—U. S.—

Average dose: 0.030 gm. (30 mg. ½ grain).

EXTRACTUM COLOCYNTHIDIS COMPOSITUM.—U. S.—Compound Extract of Colocynthis is a mixture of 16 parts of extract of colocynthis, 50 parts of purified loes, 6 parts of cardamon, 14 parts of resin of scammony and 14 parts of soap.

Average dose: 0.50 gm. (7½ grains).

PILULÆ CATHARTICÆ COMPOSITÆ.—U. S.—Compound Cathartic Pills. Each contains:

| | | |
|------------------------------|---------|-----|
| Comp. ext. of colocynth..... | gr. iss | 08 |
| Mild mercurous chlorid..... | gr. i | 06 |
| Resin of jalap..... | gr. 1/3 | 02 |
| Gamboge..... | gr. 1/4 | 015 |

Average dose: 2 pills.

PILULÆ CATHARTICÆ VEGETABILIS.—U. S.—Vegetable Cathartic Pills. Each contains:

| | | |
|-------------------------------|---------|-----|
| Comp. ext. of colocynth..... | gr. i | 06 |
| Ext. of hyoscyamus..... | gr. ss | 03 |
| Resin of jalap..... | gr. 1/3 | 02 |
| Ext. of leptandra..... | | |
| Resin of podophyllum, aa..... | gr. 1/4 | 015 |
| Oil of peppermint..... | m. 1/8 | 008 |

Average dose: 2 pills.

SCAMMONIUM.—U. S.—Scammony, a gum-resin obtained by incising the living roots of *Convolvulus scammonia*, has been known and properly esteemed as an active cathartic for over 20 centuries.

Average dose: 0.250 gm. (4 grains).

RESINA SCAMMONII.—U. S.—Resin of Scammony is that portion of the gum-resin that is soluble in alcohol, but insoluble in water.

Average dose: 0.200 gm. (3 grains).

PODOPHYLLUM.—U. S.—Podophyllum, popularly known as mandrake root or May apple, is said to have been used by the American Indians, but the statement has been repeatedly questioned.

Average dose: 0.500 gm. (7½ grains).

FLUIDEXTRACTUM PODOPHYLLI.—U. S.

Average dose: 0.5 c.c. (8 minims).

RESINA PODOPHYLLI.—U. S.

Average dose (purgative): 0.015 gm. (15 mg. ¼ grain);

(laxative): 0.005 gm. (5 mg. 1/10 grain).

LEPTANDRA.—U. S.—Is rarely used in substance.

EXTRACTUM LEPTANDRÆ.—U. S.

Average dose: 0.25 gm. (4 grains).

FLUIDEXTRACTUM LEPTANDRÆ.—U. S.

Average dose: 1 c.c. (15 minims).

ECONYMUS.—U. S.—Econyinus is the dried bark of the root of *Euonymus atropurpureus*.

The Extract (dose 0.12 gm. (2 grains)), and the Fluidextract (dose 0.5 c.c. or 8 minims) are also official.

ELATERIUM.—U. S.—Elatrin, a neutral principle obtained from elaterium, a substance deposited by the juice of the fruit of *Ecballium elaterium*.

Average dose: 0.005 gm. (5 mg. 1/10 grain).

The therapeutics of the anhydrid group may be treated together, as the action of the different members is very similar and there are fewer indications for one, rather than another, in a particular case.

They are all used to some extent in dropsy, but elaterium is the most effective of all in the removal of water. They cause depression, and when this is severe it demands stimulation.

They are rarely used alone; thus scammony, which, in overdoses, has caused death, is used in the compound cathartic

pill; jalap is often combined with calomel or with potassium bitartrate, in the compound jalap powder, which is administered alone. An example of the combination of calomel with jalap is the calomel and jalap powder of the National Formulary, which consists of:

| | | |
|---------------|-----|----|
| Calomel | 3i | 32 |
| Jalap | 3ii | 64 |

The dose is about 1 gm. (15 grains), or a smaller amount may be given and repeated at intervals of several hours.

Resin of jalap is nearly tasteless and is, therefore, often given in capsules; it may be mixed with a little sugar for the purpose.

Compound cathartic pills are so well known that they scarcely require further notice. The soap present (in compound extract of colocynth) slowly reduces the mercurous chloride to the black oxide—increasing its effectiveness.

Podophyllum has been called "vegetable calomel" and it was supposed to increase the secretion of bile, but this is not probable. It causes purgation after ten to twelve hours and is very useful in acute constipation.

A suitable form of administration is suggested below, but the possible combinations are endless. The Triplex Pills (N. F.) have the following formula:

| | | |
|---------------------------|---------|------|
| R. Purified aloes..... | gr. ii | 13 |
| Mass of mercury..... | gr. i | 1065 |
| Resin of podophyllum..... | gr. 1/4 | 1016 |

Dr. Jno. W. Francis has used a pill containing about 1 grain, each, of purified aloes, scammony and mass of mercury, with 1/20 minim of croton oil, 1/4 minim of oil of caraway and enough tincture of aloes and myrrh to make one pill.

Leptandra, enonymus and some other official vegetable drugs cause purgation, but do not require special mention here.

CAMBOGIA.—U. S.—Camboge is a gum-resin obtained from *Garcinia hanburii*.

Average dose: 0.12 gm. (2 grains).

Purgative Oils.

There are but two of these which merit discussion here. Castor oil and croton oil owe their activities to two acids, ricinoleic in the castor oil and crotonoleic in croton oil. The acid does not exist uncombined in castor oil, but is liberated when it reaches the intestine, forming new compounds which are irritant and therefore purgative.

Crotonoleic acid does exist free to a small extent in croton oil, which is, therefore, irritant even when applied to the skin.

Other bland fixed oils are sometimes used as laxatives. Among those which are official are Olive Oil, Cotton Seed Oil, and Expressed Oil of Almond.

OLEUM RICINI.—U. S.—Castor oil, expressed from the seed of *Ricinus communis*, is a pale, yellowish or almost colorless, transparent, viscid liquid, having a faint mild odor, but an offensive taste. It was known to the ancients, but fell into disuse; it was again brought into notice in 1764 by a West Indian physician, who described it as a gentle purgative.

Average dose: 15 c.c. (4 fluidrachms).

Castor oil is very useful in ordinary constipation, and often in diarrhea, where it serves to remove the irritating substance.

Owing to the widespread repugnance to the taste of castor oil, many means have been devised for disguising it. If the mouth is merely rinsed with strong whisky, the oil may be swallowed without discomfort. For children it is given in the form of soda water with syrup of sarsaparilla, or with ginger ale, when it is often swallowed without the child's knowledge.

The following formula is useful for disguising the taste:

| | | |
|--------------------------|-------|-----|
| R. Spts. menth. pip..... | 3iiss | 10 |
| Ol. ricini q. s. ad..... | 3iii | 100 |

Sig.: 1st c.c. (4 fluidrachms) to be taken without further dilution.

Emulsions of castor oil have never been popular, as they but imperfectly disguise its taste. Soft capsules, containing 15 minims each, may be swallowed, and many persons find them unobjectionable. Three or four capsules are given at bedtime.

OLEUM TIGLI.—U. S.—Croton Oil. A pale, brownish-yellow fixed oil, expressed from the seeds of *Croton tiglium*; it has a slight fatty odor, and a mild, oily, afterward acid and burning taste. (Great caution is necessary in tasting.)

Average dose: 0.05 c.c. (1 minim).

Owing to its irritant character and the violence of its action, croton oil is not generally used as a purgative, but there are conditions in which it is very useful; it may be given in apoplexy, when the patient is unconscious, a drop being placed on the tongue either in the form of an emulsion or on sugar. It is useful when, from any cause, there is difficulty in administering a bulky cathartic, but it is contraindicated in inflammatory conditions of the intestines.

Croton oil is also applied to the skin as an irritant.

Laxative Sweet Substances.

Some of the following substances may be treated under the subject of dietetics, since they are laxative mainly because of the bulk of non-absorbable matter. The dose is large and the action mild—with the exception of Cassia Fistula, which is apt to cause griping.

MANNA.—U. S.—The concrete saccharine exudation of *Fraxinus ornus*. It consists mainly of a peculiar sugar, mannite.

Average dose: 16 gm. (240 grains).

PRUNUM.—U. S.—Prune, the partly dried fruit.

TAMARINDUS.—U. S.—The preserved pulp of the fruit.

Average dose: 15 gms. (½ ounce).

FICUS.—U. S.—The partially dried fruit.

CASSIA FISTULA.—U. S.—The dried fruit. This and the three preceding articles enter into confection of senna.

Manna is a mild laxative, but it is rarely used alone; it enters into the compound infusion of senna.

Phenolphthalein is not official as a medical substance, but is mentioned in the Pharmacopeia, in the list of reagents and test solutions, as an indicator in acidimetry.

It has attracted some attention of late as a laxative. In combination with soap and salicylic acid, it is being widely advertised under the name of "Probilin."

Since many of the symptoms resulting from indigestion and constipation were formerly attributed to a deficiency in the formation of bile, agents were sought which would increase its secretion. Many of the purgatives now in common use were supposed to possess this property, but the only agent which has been shown by experiment to increase the secretion notably is bile itself.

The precise rôle played by bile beyond the splitting of fats, is still a moot point.

In this connection it may be mentioned that the mineral acids, particularly the dilute nitro-hydrochloric, have been much used for their supposed cholagogue action, this is too slight to give them practical value, but they are useful in many conditions for which a deficiency of bile is supposed to be the cause.

Dr. Philip Shaffer recently gave a woman with biliary fistula about 20 gms. (5 drams) of the purified ox bile in three days, resulting in a notable increase of bile secretion.

The patients' general condition seemed to be but little affected by the absence of bile from the intestine, but fats were not so well borne as in a normal person. This but confirms the experience of other observers, and in this light cholagogues lose much of their importance.

FEL BOVIS.—U. S.—The fresh bile of the ox is only used in the form of:

FEL BOVIS PURIFICATUM.—U. S.—Its use has already been mentioned.

Average dose: 0.5 gm. (8 grains).

(To be continued.)

1. The proprietors of probilin quote Dr. W. Bauermeister of Brunswick, Germany, as authority for the assertion that salicylic acid and sodium oleate are the most powerful cholagogues. This is not in accord with the generally accepted opinion of therapeutists. The same authority states that he had the two drugs put up in pills containing 1½ grains of each, adding menthol and phenolphthalein as anaesthetics and to mildly stimulate intestinal activity. But we are unable to understand why he should add "these pills, named probilin, are difficult to prepare." At least, any competent American pharmacist can readily prepare them. Three or four of these pills taken before retiring are said to be effective.

Clinical Reports

SUCCESSFUL SUTURE OF A PENETRATING WOUND OF THE HEART.

JOHN H. GIBBON, M.D.

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PHILADELPHIA.

Within the past three years I have made two contributions to the subject of penetrating wounds of the heart, the last of which was read at a meeting of the College of Physicians in May,¹ 1904, and it is my intention to briefly relate the details of a case of successful suture of a stab wound of the right ventricle and to make a few comments on the symptoms and treatment. This patient is the second one on whom I have reported, the first having died on the operating table.²

Patient.—A. C., aged 38, a well-developed, healthy, colored man, was admitted to the Bryn Mawr Hospital on July 30, 1905, at 12:20 a. m.

History.—He had been stabbed with a "penknife" about one hour previous to his admission. Immediately after the stabbing he was able to walk a short distance, but then fell to the ground and soon became unconscious. His friends brought him to the hospital in a cab.

Examination.—At the time of his admission he was profoundly unconscious, the reflexes were lost, the pupils dilated, skin cold and moist, finger nails cyanosed and respiration very rapid and shallow. There was no pulse in the peripheral vessels and the heart sounds were very distant, rapid and irregular. The patient's clothing was saturated with fresh blood and an examination showed three stab wounds, one at the bend of the left elbow, one just below the edge of the pectoral muscle in the left axilla and a third about three-fourths of an inch to the left of the sternum and on a line with the fourth costal cartilage. This latter wound was more extensive than either of the others and measured about one and three-fourths inches in length, extending upward and outward. At the time of admission the first two wounds were not bleeding, but a small amount of hemorrhage was taking place from the wound over the heart which was partly filled with clot. The area of cardiac dullness was decidedly increased.

Treatment.—The patient was given vigorous stimulation and in about half an hour his condition had improved somewhat and he could be partially aroused. I saw the patient about 1:45 with Dr. Branson, who assisted me in the subsequent operation, and who thought from the symptoms that the man at least had a wound of the pericardium and that this sac was filled with blood, making pressure on the heart.

Operation.—The patient improved considerably after his admission, and when put on the operating table he could be aroused sufficiently to give his name. He had had morphin and atropin, and it took but a small amount of ether to produce anesthesia. An exploration of the wound over the heart showed that the fourth costal cartilage had been completely severed transversely. The wound did not extend beyond the cartilage, and it is this fact which prevented blood escaping readily from the pericardium. When the cartilage was manipulated a quantity of blood escaped between its divided end. The entire cartilage, with a portion of the rib itself, was removed with rongeur forceps. Exploration of the pericardium then showed a wound which would admit the end of the index finger. This wound was increased in size and the pericardium was found filled with blood clot and liquid blood. The patient's pulse had improved under the ether, but it was much fuller and more regular after the evacuation of the pericardium. The sac rapidly filled again with fresh blood, and I had considerable difficulty in locating the wound in the heart itself. In my former case I had no trouble of this kind, as on passing my finger over the surface of the heart it readily discovered the opening. Being unable to discover the wound by digital examination, I put two fingers behind the heart, lifted it up

to the pericardial opening and by rapidly sponging away the blood I was able to see the wound, which was partially filled with clot. It was situated in the right ventricle near the auriculo-ventricular groove. The bleeding from this wound was very free, but could be controlled readily by digital pressure. It easily admitted the tip of the index finger and measured from one-half to three-fourths of an inch in length. The opening in the endocardium seemed about one-half as long as the external wound. A traction suture of chromicized gut was then rapidly passed through both edges of the wound and the heart held firmly up against the pericardial opening. Then four other sutures of chromicized gut were introduced with an intestinal needle: The traction suture had been put in with a spear-pointed needle and there was considerable oozing from the punctures. This I controlled with an additional suture passed with an intestinal needle. The traction suture was of the greatest aid in the passage of the others, and without it it would have been very difficult to have closed the wound, as the heart muscle was continually contracting and expanding. I made no effort to avoid the endocardium in passing the sutures, as I think it is more important to close the wound throughout the thickness of the heart wall than to avoid entering the endocardium. A small gauze drain was placed against the line of heart sutures and brought out through the pericardial opening in which no sutures were placed. In order not to prolong the operation I simply packed the external wound also. The patient went off the table in very satisfactory condition. Pulse 88, respiration 32. The pleura was not injured and I was careful to avoid it in my manipulations.

Postoperative History.—During the subsequent twelve hours there was considerable serous oozing, requiring a change of dressing. At this time the patient's pulse was 112, respirations 36 and temperature 101°. He complained of considerable pain in the left shoulder and chest. The second day after the operation his condition was quite alarming; respirations were 62, and he complained of great distress in the chest. I changed the dressing at this time and found that the gauze packing had become so dry and adherent to the wound as to interfere with drainage. I withdrew the gauze, and a large quantity of fluid from the pericardium escaped with a gush. A smaller gauze drain was introduced and a moist dressing applied, in order to insure drainage. The patient was immediately relieved and the respiration fell to 38 within a short time. Large quantities of salt solution were given by the rectum and were readily absorbed. On the second day the patient took liquid food with relish. Except for the distension of the pericardium, due to faulty drainage, the patient made an uncomplicated recovery. The dressing was changed every other day, and on each occasion for some time the pulsating heart could easily be seen. On August 5, six days after the operation, I introduced several catgut sutures into the external wound and closed it nearly completely, but no sutures were put in the pericardium, the wound in this structure having nearly closed.

On August 7 the pericardial wound had entirely closed. On August 10 the man sat up in bed, and August 13 he was out of bed. On August 19, twenty days after his operation, he was discharged with a superficial granulating wound. On September 10 he returned to work as a master plumber and tells me he has not lost a day since. At the present time he is perfectly well, and has not the slightest discomfort or pain about the wound. His heart action is regular and normal.

In reviewing the symptoms in this case it will be readily seen that they were those of compression of the heart and not those of simple profuse hemorrhage. The unconsciousness, the embarrassed respiration, the absence of pulse, the cyanosis, the feeble and irregular heart sounds, together with the increased cardiac dullness, indicated plainly compression of the heart due to hemorrhage into the pericardium. The absence of signs of fluid in the pleura indicated that this membrane had escaped injury. I think that it is important to determine, if possible, before operating for wounds of the heart, whether or not a wound of the pleura has taken place, since it may influence the choice of the method of exposing the heart. In neither of my cases was the

1. Amer. Jour. Med. Sciences, September, 1904.

2. Phila. Med. Jour., Nov. 1, 1902.

pleura injured. In the first case, however, I produced a small wound of the pleura in resecting the cartilage; I was able to avoid this complication in the present case. Unless one is able to demonstrate a wound of the pleura I do not believe that it is wise to make the osteoplastic flap which is generally recommended, but think that it is better to separate the periosteum and to excise as much of the cartilage, sternum or rib as may be necessary to give free access to the wounded heart. In the present instance, I had ample room and after the introduction of the traction suture had not the slightest difficulty in closing the heart wound. Two fingers behind the heart are quite enough to lift it up where it can be plainly seen, and the traction suture introduced. After the introduction of this suture the rest of the operation is easy. In making the osteoplastic flap it is very difficult to avoid injury of the pleura. In but a few reported cases has this structure escaped injury.

I shall be careful in my next case, if I am fortunate enough to have another, not to use any other than a curved intestinal needle, as the beveled needles produce considerable hemorrhage. I think, also, in a future case I shall not drain the pericardium, but shall close it at once, since it has been shown that after complete closure it does not become distended with fluid. The accumulation in this case was probably due to the irritation of the heart surface by the gauze which I employed. Drainage of the external wound, however, I believe should always be employed. A large percentage of the patients who have been operated on for penetrating wound of the heart have died from infection, and in a considerable proportion of those who have recovered the cure has taken place in spite of infection. I expected suppurative in this case, as there was little opportunity to sterilize the skin thoroughly, and I was agreeably surprised that the wound entirely healed without the slightest infection. The temperature chart shows the highest temperature which the patient had was 101° on the day after operation, and that after a few days the temperature remained normal.

It is remarkable that although the first successful operation of stabwound of the heart was done in 1896, less than ten years ago, there have already been reported about 100 cases, and the percentage of recovery has been surprisingly high. Dr. F. T. Stewart, in a paper which he read before the College of Physicians in May, 1904, and in which he reported a successful case, showed a collection of sixty cases with a recovery rate of nearly 40 per cent. Since his paper was published there have been a number of successful cases reported by foreigners, but I have been able to find no successes reported by American surgeons. If I am correct in this, the case which I report is the fifth successful one in this country.

This subject was so freely discussed at the meeting of the college, to which I previously referred, that I hesitate to go more deeply into the question of statistics and technic. Before closing, however, I would state that there are constantly reported cases in which patients have lived for a number of hours or days after stab wounds of the heart, a correct diagnosis not being made until after death. Whenever there is a question of wound of the heart an exploration should be made, just as it is made in questionable wounds of the abdominal wall. Too vigorous stimulation, such as the intravenous injection of salt solution, is to be strongly condemned in these cases until after the heart wound has been closed, and even then should be employed with caution.

TETANUS FROM BLANK CARTRIDGE WOUND IN A BOY'S RIGHT HAND.*

J. NOER, M.D.
STOUGHTON, WIS.

History of the Case.—E. A., aged 12, was shot in the palm of the right hand by a blank cartridge June 26, 1905, and came at once to my office. I found a small wound in the palm of the right hand between the second and third metacarpal bones. The immediate area about the wound was infiltrated with a 2 per cent. cocaine solution, a free opening made in the skin, the interior thoroughly curetted, washed out freely, and saturated with tincture of iodine compound. A gauze drain was introduced and a light gauze dressing applied.

June 27: Wound dressed and drain saturated with iodoform introduced.

June 28: Some tumefaction on back of hand. Patient put under chloroform and a free counter opening made on back of hand and an attempt made to follow up and to clean out more thoroughly the track of injury made by the cartridge. Wound thoroughly washed with hot sublimate solution, peroxid and compound tincture of iodine, and then loosely packed with iodoform gauze.

From this time wound was dressed daily, washed with hot sublimate solution and peroxid and a gauze drain introduced between metacarpal bones. This treatment was kept up till July 8, when the drain was removed and the wound allowed to close, which it did in about three days.

Patient did not at any time exhibit any symptoms of sepsis, e. g., fever, pain, glandular swelling, and increased pulse rate.

Up to July 8 he was at all times in perfect health, except the slight annoyance from the dressing and open wound in the hand. During the first week there was some slight swelling of the hand and evidence of slight pus infection, which promptly disappeared.

Tetanus Development.—July 10: Fourteen days after injury and 2 days after removal of gauze drain he complained that his back pained him some and that in the night he had had some pain in the right side below the axilla. He attributed the pain in the back to the fact that he had been at work pulling weeds the day before. It was somewhat soothing to accept the little patient's explanation of the cause of his spinal pain, but what was to be done about the decided myalgia or whatever it might be in the right axillary region? At the first visit my patient suggested the possibility of tetanus. Were his fears to become true?

July 11: I saw patient at his home. He had had a bad night and did not feel well enough to be up. Temperature, 101; pulse, 100. Right hand painful and also pain in back along spine and on right side of chest along ribs up as far as the axilla. On movement, arm was painful. Muscles of the right arm, forearm, hand and fingers showed painful spasmodic contractions every two to five minutes. Duration of spasm was very short—two or three seconds possibly. There was no trismus or other clonic contraction. There could, however, be no question about diagnosis.

Treatment.—Antitetanic serum not being obtainable in city, it was wired for, but for some unaccountable reason was not sent till next morning, causing delay of 20 hours before first injection of 20 c.c., sixteen days after injury.

Locally, nothing was observable to indicate the serious nature of the infection. The original wound was healed and nothing abnormal was in evidence, except a scar in palm and on back of the hand. Inasmuch as the tetanus bacillus is strictly anaerobic and its activity localized in the tissues at or near the point of infection it appeared rational to anesthetize patient again, open wound thoroughly, saturate with tincture iodine and drain. This was done at once.

Hydrate of chloral was given internally, one gram every three to six hours. Its administration made the muscular contractions less frequent and less severe. A hypodermic of morphia, $\frac{1}{4}$ gr., during the evening made the contractions less painful.

* From paper read before the Central Wisconsin Medical Association, Madison.

July 13: Patient shows effect of chloral and morphin by marked drowsiness. Says he feels well, except when pain comes on. Contractions come on at pretty regular intervals in all muscles of the right side of the body, beginning always in the hand, passing up the arm and thence over the right side till they involve the back and at times the left leg, producing complete opisthotonus. Intervals are longer—5 to 10 minutes—but spasms are at times very severe and painful, so much so that patient screams loud and sharp when the spasm comes on. Temperature, 101½; pulse, 90. Hand dressed and 20 c.c. antitetanus serum injected into muscles of the back. Chloral continued and morphin, ½ gr., given in the morning and evening.

July 14: 8 a. m., pulse 88, temperature 99. Night fairly comfortable. Had some very severe general convulsions between 10 and 12 o'clock in the night. Nurse states that face turned blue and that several convulsions were so severe as to throw him out of the bed. Chloroform had to be given to dress hand. Ten c.c. antitetanus serum was injected into back and into tissues about wound.

July 15, 16, 17 and 18: Symptoms continued about the same, except intervals between convulsions were somewhat longer—15 to 20 minutes—and patient would at times rest from ½ to 1 hour without any painful contractions.

July 16 and 17: Patient apparently much better. Is less sensitive to extraneous disturbances, as noise and light. Hyperesthesia of skin not so marked. For days the skin was so sensitive that a breeze of cold air or a sudden touch on the skin of the hand or back would invariably produce a convulsion. Convulsive seizures are shorter in duration and not so painful. The use of morphin discontinued and chloral given only every six hours and dose lessened about one-third. While the convulsive seizures are in general much less severe and farther apart, he would have several very severe seizures during the 24 hours. These would invariably start in the right hand, passing up the arm, involving, in regular order, muscles of the arm, shoulder and back till complete rigidity with opisthotonus was produced.

The milder attacks were momentary and would involve only the right side, often only arm and back. Often patient would only complain of being too hot. There would be a momentary restlessness and the "spell" was over. The face has the characteristic expression of *risus sardonius*. Muscles of lower abdomen hard and board-like. All the muscles of the right arm, shoulder and along right side of spine are in a state of clonic contraction. The arm is flexed at the elbow, as is also the hand at the wrist and likewise the fingers.

Notwithstanding the permanent contractions of the muscles above mentioned and the occasional severe convulsive seizures, the patient was apparently much better. Pulse and temperature were normal, appetite and digestion excellent and general condition fairly good. The chloral was gradually discontinued during the next two days.

July 20: Patient had several severe and protracted convulsions in the night. Chloral was again given in gram doses, every three hours, till symptoms again abated, when interval of administration and dose was again diminished.

July 25: Convulsive seizures limited to two or three in twenty-four hours. By July 29 they practically ceased and chloral was given only three or four times in the twenty-four hours, being discontinued entirely during the following three or four days. Gauze drainage discontinued and wound permitted to close.

For a period of about 3 weeks the patient took from 2 to 5 grams (30 to 75 grs.) of chloral a day. On withdrawing it I found that he had acquired the chloral habit and it took about two weeks to wean him from it. The contractions of the muscles of the fingers, hand, arm and shoulders persisted for several weeks, but gradually disappeared by use of massage and warm baths.

Recovery in this case can, I think, be attributed to the following causes:

1. The mildness of the original infection or an unusual resisting power on the part of the patient.

2. The aid of the thorough mechanical cleaning and free drainage of wound.

3. The abundant use of chloral hydrate to control convulsions, to ease the muscular rigidity and to induce sleep.

The antitetanus serum may have aided to some extent the natural protective powers of the patient. I doubt very much if it had in this case any real curative value.

New Instrument

AN IMPROVED NIPPLE-SHIELD.

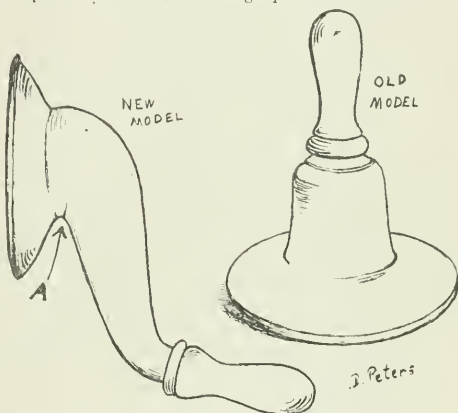
J. MORRIS SLEMONS, M.D.

Associate in Obstetrics, Johns Hopkins Medical School.

BALTIMORE.

The ordinary type of nipple-shield is so frequently unsatisfactory in cases where such an appliance is urgently needed that I have designed a new model to overcome some very obvious defects in the old one.

It very often happens that the shield now on the market can not be used at all, and, indeed, in most instances where it is used there is considerable discomfort occasioned either the mother or the child. The mother must invariably assume an awkward position in order that the milk may flow in the proper direction. If in bed she must turn so that she lies practically over the child: if sitting up she must bend forward



at a very uncomfortable angle, otherwise the milk will remain in the shield. The child not infrequently is restless and dissatisfied because it is compelled to nurse so long before any milk reaches it. This is due to the fact that the rubber nipple is at a higher level than the bottom of the chamber into which the milk is first received. As a result of this a teaspoonful or more of milk must always be drawn out before the child gets a drop. Nurses, I find, have recognized this and are prone to put milk in the shield before placing it on the breast. Clearly, this is a troublesome and inadvisable procedure.

The model which I have devised is shown in the accompanying diagram. It is so constructed that the first milk drawn from the breast reaches the infant immediately. The breast nipple projects beyond the angle (marked A) in the floor of the shield and the milk falls at once through the glass tube to the rubber nipple. Delay in the transmission of the milk is entirely avoided and can not be a source of annoyance to the infant. Moreover, the S-shape curve of the shield allows the mother to be in a more comfortable position than is possible with the old model. Whether lying down or sitting up the posture required when the new model shield is used is the same as when the child is nursed directly from the breast.

The pattern presented here was devised some months ago when I found the old style appliance of no help to me in a case where the need of a shield was imperative. It worked very satisfactorily at that time and has been used since with equally good effect.

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SATURDAY, FEBRUARY 10, 1906.

SPECIFIC SERA AGAINST INFUSORIA.

Notwithstanding the importance of many animal parasites in the production of disease, comparatively little of immunity in connection with this class of organisms. experimental work has been done from the standpoint. This is evidently due to the fact that it is difficult to obtain cultures of such organisms. That immunity is an important factor in diseases of protozoan origin is clear from the fact that in malaria an acquired immunity may be developed, as is also the case in Texas fever. The best known experimental work along these lines is the immunization of rats against trypanosome infection. Rabinowitsch and Kempner treated white rats with the blood of gray rats infected with trypanosomes and succeeded in producing an immunity in the former. Laveran and Mesnil, in investigating the properties of the immune blood serum, found that it was not trypanocidal, but possessed an agglutinating property without destroying motility. When injected into the peritoneal cavity the trypanosomes were not changed morphologically, but were soon taken up by the phagocytes and digested. All attempts by these workers to isolate a specific toxin by heating, drying or freezing the organisms failed, and growing them in collodion sacs in the peritoneal cavity of animals gave no evidence of the production of a toxic body.

An important paper by Rossle¹ recently appeared, in which the author gives his results of immunizing animals with infusoria. *Paramecium caudatum* and *Glaucocoma scintillans* were injected several times subcutaneously into rabbits and guinea-pigs and the properties of the serum of these animals were compared with normal serum. Since normal serum in pure condition is injurious to the organisms it is necessary to work with diluted sera. At a dilution of 1 to 20 or higher no effect is noted by the normal serum on the infusoria. The immune serum, however, behaves very differently. The infusoria when introduced at first swim about in a very lively manner; this activity soon ceases and there follows a specific toxic effect in the form of a paralysis of the paramecium, involving the cilia of the surface, the contractile vacuole and finally the undulating membrane of the cytostome. A distinct agglutination does not occur, but the organisms tend to adhere to the sides of the container and other objects, but not to each other. No anatomic changes could be made out nor anything

that could be interpreted as a lytic process, though certain differences could be brought out by vital staining between the protozoa treated with the normal and the specific sera. The fact should be noted that in low dilutions the same effect was observed in the normal serum as in the specific serum, there being therefore not a qualitative, but only a quantitative difference between them. The immune serum lost its specific properties by heating at 56 C. for one hour and could not be reactivated by normal serum. A curious result was obtained by using Loeffler's method of immunizing with the dry heated bodies of the paramecia. Obtained in this way, the specific body of the immune serum was much more stable, resisting a temperature of 70 degrees for one-half hour, but in other respects agreeing with the serum prepared by the injection of living infusoria.

Probably the most interesting and important observation made was the following: If the organisms were introduced into the specific serum for a time, then removed and washed, and after a time again introduced into the serum, it was found that they were less sensitive to the specific effect, and by continuing this process the organism finally reacted to the specific serum in the same way as to the normal. In other words, the infusoria themselves had become immunized against the specific serum. It is possible, or rather probable, that protozoa which cause disease may thus immunize themselves against the body juices in this manner, and Rossle calls attention to the possibility of this occurring in these diseases; and this may be an explanation of the protracted course and the incurableness of many of the protozoan diseases.

These facts, indicating an immunization of the invading organism against the body fluids, are exactly in accord with the hypothesis advanced by Dr. Welch in the Huxley lecture in 1902. He called attention to the possibility of the living bacteria in the host casting off receptors as a result of the stimulation of the body cells, and to the possibility that there may thus rise from bacteria lytic bodies which act specifically on the various cells of the host. The conception is made clear by considering the bacterium as the host and the cells of the body as the invader. The bacterium would thus acquire an immunity against the cells or the body fluids.

In calling attention to this work it should be noted that the author so far has only worked with a few animals, and, therefore, many more experiments must be made before the results given above can be accepted beyond question. The few results obtained are so suggestive, however, that work with this class of animals should be vigorously carried on. The author has devised some very clever means for obtaining the infusoria in pure growths, meaning by this growths of one variety of infusoria, but not free from bacteria, there being always some of the latter of a harmless character in the cultures used. These do not interfere with the inoculation experiments. For the details of these methods the original work should be consulted.

LYMPHATISM AS A FAMILY DISEASE.

As medicine grows older there is a tendency to discard some of the terms formerly used as being either inaccurate or unscientific. In some instances, a term, such as *scrofula*, has been rightly discarded, because it covered a variety of conditions, due to a variety of causes, and clinically separable. In other cases, terms have dropped into disuse because they were unfashionable or because it seemed that the condition they described was not scientifically proved to exist. Among this last group must be mentioned the so-called diatheses and temperaments about which our professional grandparents were so fond of speaking and which we so rarely mention. We probably tend nowadays in some ways to be too scientific, to discard terms too easily because we can not show actual pathologic evidence that they exist, forgetting that there are many conditions undoubtedly existent, of the pathology of which we are still ignorant. Among the diatheses, the lymphatic diathesis is the only one which seems at present to be on a firm anatomic basis.

We have mentioned before the condition spoken of as lymphatism or the status lymphaticus. It is far from uncommon, and from its association with sudden and mysterious deaths in infants has a medicolegal aspect, as well as a strictly professional one. It will be remembered that children who present this condition of lymphatism are unusually subject to infectious diseases, as is also true of the small proportion of adults who are affected, and that in quite a large proportion of the cases of death from anesthesia the condition is present. Some of the curious cases of death following trivial physical shocks or even fright have also been shown to be associated with the status lymphaticus.

The fact that this condition may exist as a family disease so far has not been especially emphasized, and it has remained for Hedinger¹ to call attention to this aspect of the question. In his article he mentions a family of nine children, five of whom had died suddenly during infancy. In some instances, the child simply became cyanotic, lost consciousness, and was dead in a few minutes. In other cases, the picture was that long ago described by Kopp as thymic asthma. Hedinger cites reports of a number of other observers recording the death under similar circumstances of from two to nine children in single families.

The lesions found in such cases are constant, though varying in degree, and consist of enlargement of the thymus and of the lymphatic apparatus, the latter sometimes affecting single groups of glands, but more often involving also the lymphatic apparatus of the spleen and the intestines. The microscopic lesions resemble in many ways those of an infection, though bacteriologic examination is usually negative.

The pathogenesis of this condition is still very obscure and seems liable to remain so. There is nothing known

to account for its appearance in several members of a family. Alcoholism in the parents and consanguinity have both been blamed for this as for many other family conditions. The conditions found, as stated, suggest infection, and the possibility of an autotoxemia has been suggested, but merely on the ground of the histologic resemblance of the lesions in this condition to those of bacterial infection. Possibly some curious change in metabolism, a subject about which we still know so little, is at fault. For the present we must be satisfied with knowledge of the occurrence of the condition and look to the future for an explanation of its cause.

MEDICAL HISTORY ERRORS.

Few things have been more encouraging in recent medical literature than the renewed attention which is being paid all over the world to the history of medicine. Nothing is more chastening than to find how many of the discoveries that are thought to be very modern are only re-discoveries of the principles that were disowned by men many centuries ago, practically applied in their teachings and in their practice and then forgotten because of changes in the theoretic point of view in medicine. Another interesting phase of this subject has been the larger sympathy that has developed for these early workers in medicine and the realization of how much they accomplished and under what apparently discouraging circumstances. Indeed, until recently, when the works of the old masters have been more read, the old-time medical curricula in the universities were so little understood that it was considered that certain phases of scientific medical work were not touched on at all.

Perhaps the most striking example of this is to be found in the impression conveyed by practically all histories of medicine published in English that during the fourteenth and fifteenth centuries there was little or no development of the science of anatomy in Christian Europe because the practice of dissection was under ecclesiastical censure. The supposed decree by which this fatal obstacle to anatomy was created was pointed out very definitely, and it seemed to be clear that it had prevented all dissection. As a matter of fact, however, the history of the fourteenth and fifteenth centuries shows a continuous series of anatomic developments of high order, in spite of the supposed papal legislation against it. Further investigation shows that the decree which was supposed to have forbidden dissection really forbade quite a different practice and on very justifiable grounds. Pope Boniface VIII prohibited the crusaders from cutting up the bodies of their dead friends in the East and boiling them in order to bring the bones home for burial in Europe. It is easy to understand how many serious evils might follow from this unhygienic practice and how eminently commendable was the promulgation of this law. It seems especially unfortunate that it

1. Deutsches Arch. für klin. Med., 1905, lxxvi, 248.

should have been misconstrued into an attempt to prevent the development of the science of anatomy along the only lines in which such development is really possible—those of actual dissection and practical demonstration.

An examination of the decree itself brings out these facts very clearly and the history of anatomy in the centuries immediately following this promulgation shows the rest. Within a few years after the issuance of the decree Mondino did his great work in dissection in Italy and published a text-book which was the guide for dissectors for nearly two centuries. A corresponding state of affairs has recently been shown to exist with regard to the false impression that alchemy, the mother science of chemistry, was also forbidden by the ecclesiastical authorities. Investigation proves this second supposed decree hampering the development of the great science to be quite as much misconstrued as that with regard to anatomy.

"Alchemies" were forbidden, but it is clearly stated just what chemical processes were intended by the word alchemies. Many of the alchemists pretended to make gold and silver and found a number of dupes who were quite content to give them real gold and silver for the supposed precious metals that they could manufacture. Alchemies of this kind were forbidden, but nothing else. The pope¹ who issued the decree was himself one of the most earnest students of chemistry of the time, doing excellent original work, and published a volume in which he demonstrated the impossibility of the transmutation of metals. Professor Allbutt, in his address on the historical relations of medicine and surgery at the Congress of Arts and Science held at St. Louis in 1904, mentioned a little book on eye diseases written by this same pope, John XXII, which contained some very practical directions in regard to the treatment of ordinary affections of the eye.

The general histories of medicine published in English still continue to repeat these erroneous statements with regard to ecclesiastical interference which did not take place. As a matter of fact, the whole attitude of the ecclesiastics of the time was in favor of the development of scientific teaching of all kinds and they were prominent in their encouragement of universities. The grateful acknowledgment of what was accomplished within these earlier ages and the recalling of it to modern generations will only make clear how slow is human progress and how much even the best advances are likely to sink into obscurity if they are neglected for some passing favorite theory. This of itself should be enough to bring us to do justice to the grand old men of the olden times who accomplished so much with inadequate means, and often under discouraging circumstances, for the development of the sciences whose full fruition was to be delayed for so many centuries.

THE SO-CALLED MAGIC TOUCH AS OPPOSED TO LABORATORY PRECISION IN DIAGNOSIS.

Regretful surprise is occasioned whenever a respected contemporary lends its support to the minority protest against the revolution in pathology, diagnosis and therapy which laboratory science has effected in medicine during the last three decades and which, as every liberal-minded physician knows, is still on the very threshold of its achievements.

Innovation has always had its obstructionists, reform its opponents. A few years ago a surgeon of prominence, for motives best known to himself, publicly decried the value of laboratory methods as applied to surgical diagnosis. He found a sympathetic audience in those who, for lack of knowledge or from inertia, had been unable personally to acquire the skill and knowledge necessary to apply these methods in their daily work. He attained a notoriety of advertising proportions. Privately, however, this surgeon was forced to admit that he availed himself of many of the laboratory's results in deciding the nature of a given surgical affection. Like all appeals to prejudice, however, his utterances were accepted as sincere and his cue was followed by many imitators. Thus an agitation against laboratory aids in diagnosis was launched.

An amusing feature of this really ridiculous campaign is the constancy with which its advocates are compelled to fall back on their plea for an education of the senses as the *sine qua non* of diagnosis. A recent flowery orator proclaimed to his audience that he taught his students the importance of training the sense of touch, and thus enabled them to render superfluous the microscope, test tube, microtome, culture media, blood-counting apparatus, centrifuge and all the other paraphernalia of the modern diagnostic laboratory. These men forget that our medical forefathers educated their senses to a degree of acuteness unattainable by modern men who have perfected various implements like the stethoscope, ophthalmoscope and fluoroscope to assist the senses which have long since depreciated through various agencies of civilization.

This appeal reminds one of a kind of retrogression in which a premium will be placed on the magic touch, or the laying-on of hands of medievalism, or the persuasive, pocket-emptying "touch" of osteopathic or other manipulating quacks. These pleaders for sense-education seem to forget that good laboratory practice is the most effective training for sharpening the senses, and that it scores its triumphs in the sickroom whenever a laboratory worker chooses to enter the pursuit of clinical medicine or surgery.

To give a detailed account of the achievements of the laboratory in forwarding medicine is a task so laborious as to exhaust one's patience when called on to controvert the claims of those antagonizing progress in this direction. Instances in which the theory and practice of medicine have been revised and uplifted through the

1. "John XXII and the Supposed Bull Forbidding Chemistry," by James J. Walsh, Medical Library and Historical Journal, vol. III, No. 4.

conquests of the laboratory, if enumerated, would pass in review the history of medicine in the last three decades, an era of progress beside which all former periods attain utter insignificance. And this is due not to better training of man's senses, but to the aid these senses have secured through laboratory devices.

THE STATE AND TUBERCULOSIS.

In the present medical and public enthusiasm in regard to the tuberculosis question the duty of the state has been a subject of much discussion, which has in turn led to a considerable amount of actual and proposed legislation. Some of this has been wise, part of it might be wiser. A very fair and sensible review of the subject is given in an address delivered by Dr. J. P. C. Foster¹ of New Haven, Conn., before the Laennec Society of Johns Hopkins Hospital. The measures which he points out as necessary are the scientific supervision of water and milk supplies, rational tenement-house legislation, registration of cases of tuberculosis, control of indiscriminate expectoration, and proper efforts to educate the public in needed sanitary precautions. His remarks in regard to the last named necessity are pertinent and suggestive. He recognizes that there is a tendency to overdo the matter of expense in sanatoria and public care. "The highest claim," he says, "that such institutions have on state support is not in their charitable, but in their educational value."

Even with the model of the Massachusetts State Sanitarium before him he does not seem positive as to the advisability of erecting state institutions. The better way, as he sees it, is in the formation of state antituberculosis associations, which, through private benevolence, should initiate and control the sanatorium movement, and only ask a certain amount of government aid when the usefulness of the institution is assured. This is the plan which has been adopted in Canada and, to a certain extent, in his own state of Connecticut. There will be no lack of private benevolence when the need for it is definitely shown, and it is not necessary that such institutions should be unduly multiplied or expensive. He would make a sanatorium of this kind meet the needs of a population of not less than 250,000, and its work should be mainly educational. It is neither necessary nor desirable that these should be free institutions, but they should receive curable indigent patients of special intelligence who could serve as sanitary missionaries after their discharge.

The vast army of indigent and ignorant consumptives should receive proper care in municipal institutions, in which, if necessary, they could be isolated without causing undue expense. The average consumptive in private life needs education rather than isolation or public care. The intelligent and organized effort that is required properly to bring about the best results is clearly indi-

cated in Dr. Foster's address, and as an object lesson he related what has been successfully done in New Haven and Hartford, where, with an expenditure of only \$50,000, provision has been made for 100 beds, fully one-half of the number for which the state could justly be called on to contribute, and this absolutely without any political work or interference whatever.

THE SEVENTEEN YEARS' WAR FOR PURE FOOD.

The history of the pure-food legislation and the methods and the motives of its obstruction by the Senate are well described by Henry Beach Needham in the *World's Work* for February. He shows that the first pure-food bill was introduced seventeen years ago into the Senate, and that during the past four years substantially the same act has twice passed the House. The obstructive tactics of certain senators and the motives of the leading opponents of the bill are pretty well analyzed. The liquor interest, the patent-medicine business, the cottonseed oil industry of the South (which furnishes most of our imported olive oil) glucose manufacturers, etc., all have their advocates among the Senate leaders, one of the most prominent of whom, who is said to have much control over legislation and to be himself interested in the wholesale grocery business, a fact which "senatorial courtesy" does not allow being mentioned in the Senate debates. He points out that the tactics in the present long session are likely to be somewhat different from those that prevailed last year. If, he says, public clamor shows no signs of abatement the Senate "yields." When the Senate yields, then is the time to watch legislation, for while obstruction is still practiced the chief reliance is on emasculation. "To convert a bill drawn in the interest of the whole people into a harmless measure which 'business' will accept" is then the policy. "Beware of the Senate when it 'yields,' for it has not yielded. The enacting clause of the House bill will be retained, but the remainder of the measure will be the Senate's own make." We must not give the matter up. There is a force of public opinion that can make the Senate yield to some purpose, and the medical profession should have its share in creating it.

TETANUS FROM BLANK CARTRIDGE WOUND.

For several years in our annual Fourth of July tetanus article we have laid particular stress on the necessity for the most vigorous measures in the treatment of blank cartridge wounds when first seen by the physician, and also the prophylactic administration of tetanus antitoxin. The radical nature of the procedures we have advocated, namely the anesthetizing of the patient and most extreme dissection and drainage of the irregular radiating track of the explosive injury, have seemed to many unnecessary. Until one has proved it by dissection it is hard to appreciate how widespread are the effects of the explosion beneath the skin, and without this appreciation it would seem possible to secure adequate cleansing and drainage by fairly free incision and the usual surgical measures. The administration of antitoxin as soon as possible after the injury is received has seemed

¹ Published in the Johns Hopkins Bulletin and Charities and the Commons simultaneously.

to many an unnecessary elaboration of the prophylactic measures. Elsewhere in this issue¹ is narrated a case that seems to us to corroborate the position we have assumed. The patient, with the usual blank cartridge wound in the hand, was given exceptionally thorough surgical care under local anesthesia, including thorough curetting and the use of iodine as an antiseptic. Two days later the wound was again cleaned out, this time under general anesthesia, and from that time until it had healed up it was treated most thoroughly under the best surgical methods. Yet in spite of all this care, tetanus developed on the fourteenth day. We agree with the reporter of the case in ascribing the successful outcome to the thorough mechanical cleaning and free drainage of the wound, which undoubtedly tended to make the severity of the infection much less than it would have been under less vigorous treatment. At the same time it emphasizes the fact that tetanus is not an ordinary surgical infection that can be met by the same methods of treatment that are successful in preventing infection with other organisms. As in this case, infection with other bacteria may be avoided, and healing take place aseptically, but deep in some hidden corner the tetanus bacilli or spores may hide, uninjured by any antiseptics that may reach them, capable of multiplying and killing the patient at the first favorable opportunity. If thorough surgical treatment is instituted with every such injury the incidence of tetanus as a Fourth of July sequence will be enormously lowered, but to secure the final complete success it is necessary to go beyond ordinary surgical methods and to administer a prophylactic injection of antitoxin—only in this way can we make sure of avoiding tetanus altogether.

ANOTHER STEP TO PROTECT CHILDHOOD.

As the result of an interesting trial three Chicago saloon-keepers were recently ordered to pay \$17,500 damages to some children for injury done them by reason of the repeated intoxication of the father through liquor sold by the saloon-keeper. The law which recognizes the principle that a liquor seller, in selling or giving intoxicating liquors to a habitual drunkard, injures the person, property and means of support of dependent children has in it possibilities of much good. An important social problem of the dependent in our cities is vitally connected with intemperance, and every influence is needed which can be brought to bear on this etiologic factor. We have to provide hospitals, asylums and agencies of relief to repair the damages done to individuals and to society, and more verdicts such as the one above referred to would have the double effect of checking the cause and of relieving the result.

ANOTHER JUDGE DEFINES PRACTICE OF MEDICINE.

We are privileged to add to the collection of erratic definitions of the practice of medicine one by Justice Joseph M. Deuel, who remarks that the practice of medicine consists of three things—diagnosis, discovery of the cause, and the cure by drugs, and that if a doc-

tor does not prescribe drugs he is not practicing medicine. *American Medicine* very brightly remarks: "This must be wormwood and gall to the therapeutic nihilists, and it should stimulate our pharmacologists and therapeutists to renewed activity in their efforts to restore their special science to its at one time pre-eminence. In the meantime, the surgeon who reduces a dislocation and the physician who cures a tuberculous patient with cold air and good food, are not in the practice of medicine at all. It is difficult to comment temperately on such a blow at the medical profession; indeed, it is not possible to follow out the mental processes which result in such a conclusion." We may call attention to the fact that some light is thrown on the mental processes of the judge by the fact that he is the one whose character and practices were laid bare by the exposures in the recent libel suit in which *Collier's Weekly* was vindicated for its attack on the vile *Town Topics*.

BRITISH CONTROL OF MISCONDUCT.

The British General Medical Council, the central body of which regulates medical practice in Great Britain, has issued a notification that any practitioner who resorts to advertising and canvassing methods renders himself liable to be charged under the medical act with "infamous conduct in a professional respect" and with erasure of his name from the register of local practitioners of medicine. The phraseology has an ugly sound, but it seems to us to fit the offense. Unfortunately in this country not all our state boards are legally qualified to follow this British precedent. There are without question many illegal advertising quacks in Great Britain, but it is a satisfaction that they are legally infamous as such, and their social and business standing must be more or less affected, even if their activities are not entirely squelched. It does not take much search of the advertising columns of the secular press in this country to find plenty of evidence of "infamous" quackery in every sense of the word. We wish that the British rule could be enforced here.

THE SPITTING HABIT.

In spite of the rather spasmodic enforcement of anti-spitting regulations, there are some valuable results of the agitation. Many spitters have been led to see themselves as others see them and have reformed to a certain extent. The promiscuous spitting that used to be common in cars and in public places is certainly lessened and the improvement is still progressing. A Rochester (N. Y.) paper says that the educational effect of the agitation has been marked in that vicinity. The work of the enactments, so far as they have been made, has been mainly educative, the few instances of their enforcement serving mostly to point a moral. There is a certain class of mankind to whom only penalties will appeal, but for the great mass of approximately decent people the agitation of the subject is constantly being more and more effective. The bad habit of spitting in public places bids fair to be before long a thing of the past.

Medical News

ALABAMA.

Personal.—Dr. Lucian A. Spencer, Bessemer, was severely injured January 13 in a collision between his buggy and a delivery wagon.

Doctor's Office Destroyed by Fire.—On January 17 fire originating in an adjoining building destroyed the office of Dr. Samuel C. Tatum at Center. The damage is estimated at \$200.

Society Elects Officers.—At a meeting of the Dallas County Medical Association, held in January, the following officers were elected: President, Dr. William W. Harper, Selma; secretary, Dr. Barney B. Rogan, Selma; treasurer, Dr. Clement Ritter, Selma, and censors, Drs. Samuel G. Gay, Clement Ritter, W. McLean Pitts, William W. Harper, all of Selma, and Dr. Joseph M. Donald, Harrell.

DISTRICT OF COLUMBIA.

Personal.—Dr. S. O. Richey, who has been ill for some time, has returned to the city fully restored to health.—Dr. William R. Moulton, formerly resident physician at Bilibid prison, Manila, P. I., has returned to Washington.

Health of the District.—The report of the health officer for the week ended January 20 shows that there were 118 deaths, 67 white persons and 51 colored. The following cases of contagious diseases were reported: Diphtheria, 38; scarlet fever, 35; typhoid fever, 56; smallpox, 20.

Health Employes to Take Vacations in Winter.—Dr. William C. Woodward, health officer of the district, in his report to the commissioners, states that the natural desire of the employes of the department to take vacations during the summer months interferes with the work of the department. He advises either dividing the vacation period into two terms, only one of which may be between June 1 and September 30, or allowing employes to take the entire vacation of thirty days during the winter months.

ILLINOIS.

Illegal Practitioner Sentenced.—"Prof." J. R. Braun, Hillsboro, charged with violation of the medical practice act, was found guilty January 24 and sentenced to pay a fine of \$100 and, in default of payment, was committed to jail.

A New Society.—The Eastern Illinois Ophthalmological and Otological Society was organized at Champaign January 16. At a meeting to be held in Decatur, March 6, permanent officers will be elected and the organization perfected.

Evanston Is Healthy.—The health commissioner of Evanston announces in his annual report 209 deaths in a population of more than 23,000, or a little less than 9 per 1,000. Pneumonia and heart disease each caused 20 deaths; tuberculosis, 19, and cancer and old age, each 15.

Physician Wins Suit.—In the suit of Charles Yeager, a butcher of Belleville, against Dr. Arthur M. Kohl, in which the plaintiff claimed \$5,000 damages on account of the closing of his place of business, confiscation of his stock and his own confinement in the county contagion hospital on account of smallpox with which he claims he was not afflicted, the jury returned a verdict for the defendant.

Personal.—Dr. Baker, Congerville, has purchased the practice of Dr. Eric W. Zook, Dunlap.—Dr. Reinhardt Rembe, formerly a practitioner of Bloomington, but for the last five years a resident of Munich, Germany, is spending the winter in America.—Dr. W. E. Schowengerdt, Champaign, is seriously ill with typhoid fever.—Dr. William H. Scott, Dallas City, was thrown from his buggy in a runaway accident January 23 and sustained severe bruises of the face.

Chicago.

Hospital Dedication.—The new Washington Park Hospital at Sixtieth Street and Vernon Avenue was dedicated by a charity bazar, held on the evenings of January 31 to February 3 inclusive.

For Sick Children.—At the performance of "Babes in Toyland," January 29, the proceeds of which was given to the Children's Hospital Society at Chicago, the net receipts amounted to \$3,500.

Newberry Medical Library Sold.—The trustees of the John Crerar Library completed arrangements February 5 whereby the medical department of the Newberry library will be transferred to their new building when it is completed. During the intervening time they will have charge of the immense collection in its present quarters in the Newberry Library building.

Deaths of the Week.—For the week ended February 3 the total deaths were 557, equivalent to an annual mortality of 14 per 1,000. Pneumonia caused 103 deaths; consumption, 68; Bright's disease, 42; violence, including suicide, 40; heart diseases, 39; intestinal diseases, 32, and cancer, 31.

A Banquet to Baron Takaki.—A banquet is to be given on the evening of February 10 to Surgeon-General Takaki of the Imperial Japanese Navy (retired) by Dr. Nicholas Senn, at which, in addition to the guest of honor and Dr. Jōichi Takamine, the Senn Club and representatives of the medical departments of the Army, the Navy, the Public Health and Marine-Hospital Service and the Illinois National Guard will be present.

Again Convicted.—Dr. Francis M. Steward was convicted January 29 of robbery. Felix Barard, the complainant, stated that he was met on the street by a "capper" and invited to the office of Dr. Steward for free examination, at the conclusion of which he was informed that he had a number of serious diseases and that his bill was \$110, which he had to pay or leave his clothes. The previous conviction of Dr. Steward was for a similar offense in 1897. The defendant moved for a new trial and was released on bonds of \$6,000.

IOWA.

New Hospital.—The old Christian church at Charles City has been sold to Dr. J. H. McLeod, who will repair the building and fit it up as a hospital.

Addition to Hospital.—The new building of St. Joseph's Hospital, Keokuk, erected at a cost of about \$30,000, was turned over by the directors January 20.

Asks Definition of Vaccination.—The State Board of Health has asked the legislature to define "vaccination" as prescribed in the law requiring all school children to be vaccinated. The point at issue is whether the so-called internal vaccination practiced by certain homeopaths is or is not to be considered as vaccination.

State Inebriety Hospital Opened.—The Detention Hospital for Inebriates, Knoxville, was opened January 18. Hereafter all dipsomaniacs will be committed to this institution instead of to insane hospitals, except that women inebriates will still be committed to the State Hospital at Mount Pleasant. Dr. O. C. Vilhite has been made superintendent of the institution, and Dr. W. S. Osborne of the Cherokee State Hospital has been made assistant superintendent.

Polk County Medical Society.—This society held its annual meeting at Des Moines and elected the following officers for the ensuing year: President, Dr. A. C. Page; vice-president, Dr. G. D. DeYoung; secretary, Dr. C. A. Ayres; treasurer, Dr. Clifton Scott; censor, Dr. J. W. Cokenower. The society instructed the secretary to send a telegram to Congressman Hull indorsing the pure food bill now before congress, and requesting him to use his efforts toward its passage. A committee of three was appointed to confer with local school boards regarding sanitation in public schools. The present membership of the society represents 85 per cent. of the eligible practitioners of Polk County.

Personal.—Dr. Guy Ramsey, North Liberty, was seriously injured in a collision between his sleigh and a trolley car January 9. Dr. Ramsey's hip was badly fractured, but it is not believed that he sustained internal injuries.—Drs. B. M. Howland, Melbourne, and E. M. Singleton, Marshalltown, have been selected as physicians of Marshall County.—The office of Dr. Fox, Calendar, was destroyed by fire January 18.—Dr. N. McKitterick, Burlington, has resigned as president of the Des Moines County Medical Society.—By the will of Mrs. Jessie M. Bishop, her residence in Charles City, valued at about \$10,000, is bequeathed to her physician, Dr. A. R. Brackett.—Dr. H. S. Patterson, Elkader, has been reappointed a medical member of the commissioners of insanity.—Dr. Frederick E. Welch, Rutland, was operated on for gallstones in Mercy Hospital, Chicago, January 1, and is making rapid progress toward recovery.—Drs. H. O. Conaway, Oskaloosa, and J. C. Farrell, Barnes City, have been appointed physicians for Mahaska County.

MARYLAND.

New Hospital for Northern Maryland.—A new hospital was opened in the northern section on February 1; it is known as St. Luke's and accommodates twenty patients, but will be enlarged shortly. The incorporators are Drs. C. K. Jump, E. Z. Cole, Charles L. Evans, William Dulany Thomas, George E. Henck, John A. Evans, Bowman M. Hood, William M. Pannemaker, O. E. Murray, J. W. Wisner, B. C. Catlin and H. H. Stansbury. Dr. William Dulany Thomas will be superintendent.

Society Elects Officers.—At the annual meeting of the Talbot County Medical Society, held at Easton January 31, the following officers were elected: President, Dr. Julius A. Johnson, Easton; vice-president, Dr. Edward R. Trippe, Easton; secretary, Dr. Philip L. Travers, Easton; censors, Drs. Kennedy Wilson, Tilghman; Samuel C. Trippe, Royal Oak; Charles H. Rose, Cordova; delegate, Dr. James A. Stevens, Oxford. There was a good attendance, and addresses were made by Drs. R. T. Taylor, Thomas Cullen and Lewis M. Allen, of Baltimore.

Baltimore.

Births and Deaths in January.—During January 906 deaths and only 735 births were reported. Several deaths from grip were reported during last week.

Course of Study to be Lengthened.—The authorities of the Johns Hopkins University are considering the question of lengthening the course in the collegiate department from three to four years and that in the medical school from four to five years.

Portrait of President Remsen for Johns Hopkins University.—A full-length portrait of President Ira Remsen of the Johns Hopkins University has been painted by his son, Ira M. Remsen, formerly a student at Johns Hopkins and now an artist in New York City. It is said to be intended as a gift to the university.

Personal.—Dr. William Osler left Baltimore on January 30 for Canada after a stay here of three and one-half weeks. He will spend several days with his mother and will then return to New York and sail for England. He read a paper at the Johns Hopkins Hospital Historical Club January 29 on John Radcliffe, who established the Radcliffe Library at Oxford in 1740.—The real and personal estate of the late Dr. Charles C. Shippen is appraised at \$164,965.

MASSACHUSETTS.

City Protests Against Pollution of River.—The city of Waltham has protested before the committee on public health against the introduction into the Charles River of sewage and waste by the manufactories and town of Milford, which is 60 miles upstream.

Brookline to Have a Municipal Gymnasium.—The town of Brookline, "the richest town in the world," has voted \$100,000 to build a new municipal gymnasium. It will be located on the square where already face the high school, manual training school and the free public bath house.

Lectures on Medical Jurisprudence.—Ezra R. Thayer, LL.B., is to give four lectures on the physician's relations to the law and the courts at Harvard Medical School on Monday evenings at 8, beginning February 12. The lectures are open to medical students and to members of the profession.

Height of Buildings.—Another bill introduced in the Massachusetts legislature affecting the height of cities provides that all buildings hereafter erected outside of Boston shall be not more in height than one and one-fourth times the width of the street on which they stand and none over 125 feet high. Some such law prevails in Paris.

Boston.

Mayor Finds Fault with Milk Inspectors.—Mayor Fitzgerald of Boston has found fault with the milk inspectors employed by the Board of Health, with the result that two of them have been suspended.

Testimonial to a Trustee's Work.—A letter of hearty appreciation has been sent by sixty-nine medical men to Hon. Henry H. Sprague, a trustee of the City Hospital, accompanied by a silver bowl and platter appropriately inscribed. The letter commends Mr. Sprague's character, energy and fidelity in his thirty years' service as trustee.

Protection of Food from Contamination.—The Woman's Health Club has petitioned the State Board of Health to make regulations for protecting food offered for sale in public places from contamination. Dust, flies, odors, excrement of dogs, cats and mice, and indiscriminate handling are all shown to be real dangers, especially to the food sold to poor people.

Personal.—Dr. David Cheever, son of Dr. David W. Cheever, has been appointed third assistant visiting surgeon to the Boston City Hospital. His father was one of the six surgeons first appointed to the staff of the hospital in 1864, when the institution was opened.—Dr. James J. Scannell has been appointed assistant bacteriologist. The other men have moved up since the departure of Dr. H. W. Hills, and now the laboratory is in charge of B. R. Richards, S.B., assisted by Dr. Francis H. Slack.

The New England Deaconess Hospital.—Though this institution has only 14 beds, it cared for 234 patients last year, 1,763 during the ten years since it was started. Twenty-five deaconesses made 20,865 calls in the year. Of the work done one-third is gratuitous. Sufficient funds have at last been secured to guarantee the starting of the new hospital building in March. This is to be near the great group of medical school and hospital buildings in Longwood.

MISSOURI.

Alumni Election.—The Medical Society of the City Hospital Alumni of St. Louis elected Dr. L. H. Behrens, president; Dr. W. Baumgartner, vice-president; Dr. F. J. Taussig, secretary, and Dr. Jules Brady, treasurer.

Election of Officers.—The election of the St. Louis Medical Society resulted as follows: President, Dr. George Homan; vice-president, Dr. Robert Barclay; secretary, Dr. Hart Goodloe, and treasurer, Dr. Charles J. Orr.

Personal.—Dr. R. B. Gradwohl, St. Louis, announced at the meeting of the St. Louis Medical Society, February 3, the discovery of a new species of intestinal parasites, probably belonging to the *Oesophagostomum* family of the *Scerostoma*.—Dr. George Harron, at the same meeting, reported an interesting case of hookworm disease observed in Missouri, but contracted in Alabama.—Dr. and Mrs. Richard L. Sutton, Kansas City, sailed for Liverpool January 13 for a trip of two years abroad.—Dr. and Mrs. John H. Duncan, St. Louis, sailed for Europe February 1.—Dr. Guy L. Noyes has succeeded Dr. Edward W. McAllester as superintendent of Parker Memorial Hospital, the hospital of the medical department of Missouri State University, Columbia.

NEW JERSEY.

Personal.—Dr. Harry H. Pemberton of Long Branch was shot but not seriously injured by his daughter, January 29. The daughter was subsequently examined by physicians and pronounced to be insane.

NEW YORK.

Mortality in the State.—The State Department of Health reported 137,059 deaths in this state last year. These, together with 175 delayed returns, made a death rate of 17.4 per 1,000, or about the average for the past five years. There was a daily average of 376 deaths, against 380 in 1904 and 350 in 1903. Pneumonia was the chief cause of death, causing 14,157 deaths in 1905, against 13,531 in 1904, and 9,000 in 1903. Consumption caused fewer deaths than pneumonia. The mortality from cerebrospinal meningitis was 2,566, against 1,700 in 1904, the average being in former years 550. Diphtheria had the smallest mortality of any year on record. Typhoid fever had fewer deaths than in the two years preceding. Smallpox occurred in only a few localities and the nine deaths were all in the maritime district. Epidemic diseases caused 13.5 per cent. of the mortality. Consumption caused 10 per cent. of the deaths, and 175 deaths per 100,000 population in the maritime districts. The infant mortality was 27.5 per cent. of the total, being 1,000 less than last year. There were 24,000 deaths of individuals past the age of 70. Bright's disease caused 8,870 deaths; in 1902 this disease caused 6,818 deaths; in 1903, 7,674; in 1904, 9,068.

Buffalo.

Personal.—Dr. Marcel Hartwig was recently operated on at the Johns Hopkins Hospital, Baltimore.—Dr. Roswell Park, who has been confined to his home by illness, is rapidly convalescing.

Hospital Elections.—The Buffalo Emergency Hospital staff at its annual meeting elected the following officers: President, Dr. Francis J. Carr; vice-president, Dr. Vertner Kenerson, and secretary, Dr. Edgar A. Forsyth.—The Buffalo Hospital Sisters of Charity held the annual meeting and elected the following officers: President, Dr. George H. Westinghouse; vice-president, Dr. Walter D. Greene, and secretary, Dr. Alfred E. Diehl.

New York City.

Harvey Society Lecture.—The eighth lecture in the Harvey Society course will be delivered by Prof. L. B. Mendell at the New York Academy of Medicine on Saturday, February 10, at 8:30 p. m. Subject, "The Formation of Uric Acid."

Smallpox at Quarantine.—The Fabre line steamship *Roma* was detained for several hours because one of her steerage passengers was ill with smallpox. Three hundred and fifty passengers who were in the same compartment were detained at Hoffman Island for observation.

A New Catalogue.—The New York Academy of Medicine has just issued a catalogue containing the acts of incorporation, constitution and by-laws, a list of fellows, associate fellows, honorary fellows, benefactors, and a complete list of fellows from the institution of the Academy, Jan. 6, 1847, to Jan. 1, 1906.

Fire in Bellevue Laundry.—Eight hundred patients were endangered by a fire in the laundry building connected with this hospital early on the morning of January 30, but owing to the quiet and effective work of the hospital fire brigade and the city firemen only a few patients were awakened, and the damage does not exceed \$1,000.

Beginning New Bellevue.—Two brick pavilions on the southeast corner of the grounds have been emptied of patients and will be razed. This is the first step in the erection of the new hospital for which \$8,500,000 has been appropriated. The consumptive patients have been sent to the Metropolitan Hospital while the others will be cared for in tents.

Musical for Hospital.—A musicale was held Monday evening, February 5, for the benefit of the Williamsburg Hospital, in Brooklyn. This hospital has been open to the sick poor for the past sixteen years and this is the first appeal to the public for money, though the demands on the hospital have been very great, and of late many needed improvements have been made at great expense.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending January 27, 1,468 cases of measles, with 34 deaths; 404 cases of tuberculosis, with 178 deaths; 348 cases of diphtheria and croup, with 41 deaths; 226 cases of scarlet fever, with 16 deaths; 29 cases of typhoid fever, with 5 deaths; 23 cases of cerebrospinal meningitis, with 16 deaths, and 215 cases of variella; a total of 2,713 cases and 290 deaths.

Public Hospitals Commission.—Mayor McClellan has appointed a commission to reorganize the administrative methods of the public hospital system of this city. The city is about to expend a large sum of money for the extension of the public hospital system and it is the mayor's idea that the whole system should be brought under one controlling body. The commissioners of charity, health and tenement house departments and the president of Bellevue and the allied hospitals are among the members of this commission. In a letter to the new commissioners the mayor has asked them to consider the problems presented by existing methods of administration and to propose such remedies as may be necessary to correct the defects of the present system. They are asked to inquire after the future needs of the city in regard to caring for the sick poor so that adequate provision may be made for carrying on this work. A report is requested so that if necessary legislation may be secured to give the city a better system than that under which it now works.

NORTH CAROLINA.

General Hospital for Raleigh.—A movement is on foot in Raleigh, headed by Dr. Hubert A. Royster and backed by the board of trade and leading citizens, to secure a large general hospital for the city.

Tri-State Society.—The eighth annual session of the Tri-State Medical Association of Virginia, North Carolina and South Carolina will be held at White Stone Lithia Springs, S. C., February 27 and 28.

Society Elections.—The Iredell-Alexander County Society has elected officers for 1906 as follows: President, Dr. E. E. Kluttz, Troutmans, and secretary, Dr. John E. McLaughlin, Statesville.—The Haywood County Medical Society has elected the following officers: President, Dr. J. Rufus McCracken, and secretary, Dr. J. Howell Way, both of Waynesville, N. C.

New Superintendent.—At the meeting of the trustees of the State Hospital for Colored Insane, Goldsboro, January 24, Dr. William W. Faison, for some years first assistant physician, was elected superintendent in place of Dr. John F. Miller, deceased. Dr. Faison is well qualified and has rendered the hospital excellent service for several years past. His election was unanimous, Drs. Cobb and Jordan, the other leading candidates, withdrew in his favor before the election was held.

OKLAHOMA.

Physicians as Mayors.—Three or four of the largest towns of Oklahoma and Indian Territory have elected physicians in active practice as mayors during the past year.

Personal.—Dr. Ulbus L. Russell, Oklahoma City, returned from London, December 29.—Dr. H. Coulter Todd, Oklahoma City, who is now at Moorfield's, London, returned February 1.

Hospital News.—The Mangum Hospital was destroyed by fire November 22.—The crowded condition of St. Anthony's Hospital, Oklahoma City, has been relieved by the recent opening of the large addition to the old building.

PENNSYLVANIA.

Personal.—Dr. Warren F. Klein, Lebanon, has been appointed a member of the local board of medical examiners by the commissioner of pensions, vice Dr. Charles L. Miller, resigned.

Philadelphia.

Statue of Dr. Leidy.—On February 1 a council's committee on city property acted favorably on an ordinance granting permission for the erection of a statue to Dr. Joseph Leidy on the City Hall plaza.

Medical Alumni Meeting.—The medical alumni of the University of Pennsylvania will give their annual banquet February 21. Dr. Wharton Sinkler, representing the board of trustees as well as the medical alumni, will preside, and Dr. George E. de Schweinitz will be toastmaster.

Malpractitioner Sentenced.—"Dr." Mary Roberts, charged with performing a criminal operation, was sentenced by Judge von Moschizker, January 30, to three years' imprisonment. Mrs. Roberts is the wife of William Roberts, who was sentenced to seven years' imprisonment in Boston for complicity in the murder of Susan Geary, the victim of the dress-suit case tragedy.

Hospital Reports.—During January 63 patients were under treatment at the Kensington Hospital for Women. There were 27 patients in the hospital January 1, and 29 are still under treatment.—The Germantown Hospital admitted 132 patients in January and discharged 92, the number remaining on February 1 being 85. During the month 1,700 cases were treated in the dispensary.

Bequests.—By the will of the late Nannie M. Fidler the Philadelphia Home for Incurables will receive \$5,000 for the establishment of a free bed in the women's cancer ward; the will also devises \$10,000 to Dr. Charles S. Mills.—The will of the late Nicholas Lenning contains bequests of \$10,000 for the Maternity Hospital, \$5,000 for the Philadelphia Dispensary, and \$5,000 for the Sanitarium Association.

Personal.—Dr. William W. Keen was a guest of honor at the annual banquet of the Bucknell Alumni of Philadelphia, at the University Club, February 1.—Dr. Theodore H. Weisenburg has been appointed secretary of the Section on Nervous and Mental Diseases of the American Medical Association for the ensuing year, to take the place of Dr. David I. Wolfstein, (Cincinnati, who is ill.—Dr. Edward H. Nichols, Boston, gave an illustrated address to the Philadelphia Pathological Society, February 8, on "The Pathology of Chronic Non-tubercular Arthritis."—Dr. and Mrs. Oliver P. Rex sailed from New York for a cruise to the Mediterranean and the Orient, January 30.—Dr. and Mrs. Alexander Williams Biddle will leave for Japan next month.

Health Report.—The total number of deaths from all causes reported during the week aggregated 751, a decrease of 12 from the number reported last week, and an increase of 33 from the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 21; measles, 26; whooping cough, 7; diphtheria, 13; tuberculosis, 55; cancer, 21; apoplexy, 20; epilepsy, 4; heart disease, 51; acute respiratory disease, 127; enteritis, 29; Bright's disease, 40; old age, 7; suicide, 3; accidents, 17, and marasmus, 4. There were 509 cases of contagious disease reported, with 34 deaths, as compared with 476 cases and 31 deaths. There was a slight increase of typhoid fever during the week, 344 cases, with 21 deaths, being reported, as compared with 339 cases and 17 deaths in the preceding week.

Efforts for Sanitary Trolley Cars.—Dr. Coplin, director of public health and charities, has instituted general inspection of the street-car service of the city for the purpose of framing regulations to protect public health against dirty, overcrowded and poorly ventilated cars. In a letter submitted to the chief of the health department he requests a careful examination of all trolley cars, and the report to be submitted to the department containing such information as may come within their personal observation, particularly on the following points: General cleanliness.—In case any car is in a condition believed to be prejudicial to public health the officer shall transmit to the chief medical inspector the license and running number of the car, the line, the date and hour when the observation was made, and the points between which the reporting officer was a passenger; and the officer shall state in

detail the condition believed by him to be detrimental to public health. Spitting.—In case any officer of the bureau of health observes evidence of spitting in public cars he shall report the conditions under which the observation was made, as indicated above; whether the conductor could have easily determined the fact that this violation had occurred, and whether the conductor made an effort to suppress the nuisance. All noisy, rattling cars are also to be reported.

WISCONSIN.

New Hospital for Appleton.—Dr. Albert M. Freund is erecting a private hospital on Superior Street, which will probably be ready for patients in the spring.

Proposed Tuberculosis Sanitaria.—A movement is reported to be on foot to establish a sanitarium in Milwaukee for the treatment of tuberculosis. A similar movement is contemplated in La Crosse.

New Home for Epileptics in Milwaukee.—The Riverside Sanitarium property on Humboldt Avenue is to be used by members of the various Lutheran congregations as a home for epileptics and feeble-minded individuals.

GENERAL.

Fraudulent Solicitor Arrested.—H. Fred Mace, a fraudulent solicitor of magazine subscriptions and of subscriptions to *THE JOURNAL*, regarding whom a warning was issued in *THE JOURNAL*, January 27, has been arrested in Los Angeles. Any physicians who have been victimized by this individual are requested to communicate with Mr. James Horsburg, Jr., assistant general passenger agent, Southern Pacific Railway, 431 California Street, San Francisco.

Rockefeller Institute Scholarships.—The Rockefeller Institute for Medical Research offers for 1906-07 scholarships to assist investigations in experimental pathology, bacteriology, medical zoology, physiology and pharmacology, and physiologic and pathologic chemistry, to be carried on in the laboratories of the institute in New York City. The value of these scholarships ranges from \$600 to \$1,000. They are open to men and women who are properly qualified to undertake research work in any of these subjects and who will devote their entire time to it. Applications and credentials should be in the hands of the secretary of the Rockefeller Institute, Dr. L. Emmet Holt, 14 West Fifty-fifth Street, New York City, not later than April 1, 1906. The announcement of the appointments is made about May 15. The term of service begins preferably on October 1, but, by special arrangement, may be begun at another time.

Report of the Recent Yellow Fever Epidemic in Cuba.—The local board of health of Havana has issued a report of the recent yellow fever epidemic in Cuba. The report states that the most likely source of infection was undoubtedly New Orleans, where the disease had prevailed since July. Once a week a steamer made direct trips between New Orleans and Havana, covering the distance in less than three days, with the aggravating circumstance that it was never fumigated at either port, and that during its stay at New Orleans it was tied to a wharf situated in one of the most severely infected quarters of that city. In Havana the measures taken against those steamers consisted in forbidding their approach to the wharves and only allowing cargo to be taken from or into the vessel in lighters by means of immune persons. All persons not immune were held in strict quarantine for five days. Immune passengers, on the other hand, were allowed to land without restrictions of any kind. While the disease is practically wiped out, the report goes on to state that it would be a grave error to think that all preventive measures may be omitted, as sporadic cases may still be expected to occur; some of them so mild that the diagnosis might be difficult or even impossible on purely clinical data. Attention is called to the necessity for continued vigilance and for the destruction, so far as possible, of all mosquitoes and their breeding places.

Health Report of the Philippines for September.—The report of the Board of Health for the Philippine Islands for September states that during the month 692 births were registered and 1,068 deaths. Of the births 368 were males and 324 females. The most prevalent causes of death were, in the order of their frequency: Convulsions (under 5 years), 245; tuberculosis of the lungs, 128; Asiatic cholera, 126; diarrhea and enteritis (2 years and over), 72; meningitis, 58; acute bronchitis, 56; beriberi, 38; dysentery, 36; congenital debility, 16; chronic diarrhea and enteritis (under 2 years), 29; chronic bronchitis, 25; senile debility, 20; diarrhea and enteritis (under 2 years), 17; tetanus, 14; organic disease of the heart, 13; malarial fever, 12; chronic rheumatism and

gout, 8; bronchopneumonia, 8; acute nephritis, 8; chronic nephritis, 7; congestion and hemorrhage of the brain, 7; intestinal parasites, 6; typhoid fever, 5; tuberculosis of the meninges, 5; angina pectoris, 5; leprosy, 4; pneumonia, 4; puerperal hemorrhage, 4; accidental traumatism, 4; accidental electrocution, 4; malarial cachexia, 3; purulent infection and septicemia, 3; tuberculosis of the abdomen, 3; cancer and other malignant tumors of other organs not specified, 3; anemia, chlorosis, 3; acute endocarditis, 3; pulmonary congestion, 3. There was one case of smallpox, with no deaths registered during the month. There were two cases of bubonic plague, with two deaths.

FOREIGN.

Accidents in British Coal Mines.—Though there were 62 fewer separate fatal accidents in the coal mines of Great Britain and Ireland in 1905 than in the previous year, the deaths increased by 95, the figures being 1,150 as compared with 1,055 in 1904.

Exhibition of History of Medicine in Art and Crafts.—Dr. Holländer of Berlin (No. 3 Kleiststrasse), is in charge of the historical exhibit which is to be one of the features of the festival inauguration of the Empress Friedrich House at Berlin, the center for postgraduate instruction. The exhibit is to be opened this month and continue to the middle of April.

Rinecker Prize Goes to Overton.—The triennial Rinecker prize given by the medical faculty of Würzburg, Germany, was awarded this year to E. Overton, assistant at the Würzburg Institute of Physiology. His researches on the osmotic properties of cells, the mechanism of narcosis and the importance of the mineral elements for the functions of the cells have attracted much attention among physiologists.

The Queen of Portugal and the International Medical Congress.—Queen Amelie of Portugal is interested in nursing and in medicine and took a course of instruction in these subjects a few years ago. The Lisbon faculty of medicine conferred an honorary degree of medicine on her in token of appreciation of her interest in science. It is now stated that she has been appointed honorary president of the approaching International Medical Congress, which opens at Lisbon, April 19.

Official Medical Fees in Case of Industrial Accidents.—*THE JOURNAL* in its issue for January 13, page 141, gave the text of the recent French decree regulating the medical fees in case of industrial accidents. It went into effect last November. Previous to that date the remuneration of the physician attending a workman injured while at work was the same as that paid by the authorities for medical care of the indigent. The *Semaine Médicale* took the lead in calling the attention of the authorities to the injustice of this remuneration. The workman is not a pauper, and the employer should pay for his treatment accordingly. The result was the promulgation of the decree referred to which was first published in full in the *Semaine Médicale* for October 11.

The Physicians of Germany.—Heinmann compares the statistics for 1905 with those of other years in regard to the number and distribution of physicians in Germany, his article appearing in the last number of the *Deutsche med. Wochts.* for 1905. The total number in the empire is 31,041. Greater Berlin has 3,970; Berlin proper has two less than last year. More than one-eighth of all the German and one-fifth of all the Prussian physicians live in Berlin. In 1905 throughout the empire only 1,057 medical graduates received the state "approbation" which entitles them to practice as regularly qualified physicians, and in Prussia only 362. The corresponding numbers in 1900 were respectively 1,384 and 662. The number of medical students enrolled has dropped from 8,986 in 1890 to 6,288 in 1905.

Records of Details in Regard to Operations.—A letter from Vienna in the *Münch. med. Wochts.* states that the minister of the interior has recently decreed that in all private hospitals and clinics the names of the operator and of the assistants, both medical and lay, must be recorded for each operation. It is possible that the measure may be extended to include the public hospitals. The motive for the decree was a suit brought on account of the death of a woman who had been operated on a few weeks before in a Vienna hospital. A sponge was found in her abdomen, left from the operation, and a suit for damages was instituted. The suit had to be dismissed, as the authorities were unable to discover who was the responsible party, there being no record of the person in charge of the instruments and sponges at the operation.

Tuberculosis and Workmen's Insurance in Germany.—Their statistics for the German empire during the years 1900-1904 have just been published by the societies for compulsory

insurance of workmen against sickness. They show the money received and paid out for sanatoria, hospitals, building loans, etc., the number of sick treated and the results of treatment, both immediate and remote. In a communication in the *Deutsche med. Wochts.* No. 52, Wagner comments on the figures presented, remarking that they show again the terrible extent to which the working classes are decimated by tuberculosis. The results of treatment are constantly growing better, however, and the only hope, he thinks, is in the extension of the sanatorium movement. He notes that the cures realized in tuberculous women are more apt to be permanent than in men.

German Society for Total Abstinence Among Physicians.—This long established society has now decided to issue reports addressed to the medical press to keep the medical journals informed in regard to matters affecting the liquor question from the medical point of view, and also in regard to the movement for total abstinence among physicians at home and abroad. The reports are to appear as material accumulates, and are sent out as a "Korrespondenz-Blatt," edited by Dr. Arnold Hollitscher of Pirmkanhammer. The first number contains a warning against a new German periodical *Das Leben*, which was founded by the brewery interests but masquerades as a scientific journal. It was able to secure articles from Ewald, Goldscheider, Litten and other prominent scientists for its first numbers. Their articles were altered in such a way as to make them an endorsement of alcohol, in some instances absolutely contradicting the authors' well-known views.

Child Mortality in London.—The report of the medical officer of the London County Council has just been made public, and in regard to the mortality among infants and young children provides some instructive reading. It is a matter of more or less common knowledge that about 20 per cent. of children born in most cities are doomed to death owing to the conditions under which they are born. This, however, has been generally regarded as to a large extent, a terminating evil. According to the report issued recently, "the adverse environment which slaughters one in five of the infants born has a maining effect on those left." There has been a tendency to look on a high death rate of infants as a natural weeding out of the unfit, leaving the strong ones to survive in order to propagate a hardy race. This view can no longer be held, as experience has shown that many of the survivors are liable to develop into weaklings, and frequently to become progenitors of useless children.

International Laryngo-Rhinological Congress as Memorial to Türk and Czermak.—The Vienna Laryngological Society ("Wiener laryngologische Gesellschaft") is sending out an appeal to all interested in laryngology and rhinology to unite in a worthy memorial to Türk and Czermak on the fiftieth anniversary of their pioneer work in clinical laryngology and rhinology. It is proposed to have the jubilee celebration take the form of an international congress for these specialties, to be held at Vienna, April 21 to 25, 1908. The appeal is signed by the president of the society, Prof. O. Chlari, I, Bellariastrasse 12, Vienna, Austria, and the secretary, Prof. M. Grossman, IX, Garnisonsgasse 10. They request that each scientific society, especially those devoted to these specialties, will appoint some one of its members who will remain in constant correspondence with the president of the acting committee in reference to all matters concerning the congress. The invitation to laryngologists and rhinologists to take part in the congress is cordial and urgent. The favor of an early acceptance is requested.

From Russia.—Notwithstanding the strikes and uprisings in Russia, our medical exchanges have been regularly received, without any interruption to date, even in the receipt of the *Meditsinskoe Obozrenie*, which is published in Moscow. They pursue the even tenor of their scientific way, apparently undisturbed, although they refer incidentally to the "prevailing unrest," and contain occasional obituary notices of medical men and women arrested or killed on account of their revolutionary activity or by the rioters. The privat docent for pathologic anatomy at Moscow, V. Worobioff, was shot by soldiers recently. They were searching his house, where he had established an emergency shelter and hospital for persons injured in the revolutionary movement. He was vice-president of the Moscow Therapeutic Association last year. The Russian Surgical Congress and the National Medical Congress were to have convened at Moscow early in 1906, but on account of the disturbances there both have been postponed *sine die*. The medical officials connected with the district hospitals are assumed by the indignant populace to be partisans of the autocracy, and they have had to flee from the

rioters. In many places the hospitals have been destroyed, and at Tver nine physicians were seriously injured. The Czar has recently conferred various decorations on a large number of physicians for courage and devotion during the campaign in Manchuria.

Consumption and Marriage.—The question as to whether or not consumptives should marry has been widely discussed in America of late years, at frequent intervals. In Great Britain the matter has not received much attention. It would seem now as if the subject possesses interest for the general public, for one of the principal lay journals of a recent date contains an article on consumption and marriage written by a well-known medical man. The writer points out that immunity or susceptibility to pulmonary tuberculosis are determined, to an exceptional degree, by the bodily health. That is why consumption is in general a disease of the lower classes in Great Britain, the fewer victims of the upper classes paying the penalty for the indifference of their class to the misery beneath them. In short, a person who comes into this world with a family history of consumption stands a better chance of being a healthy individual, provided that a sane and out-of-door life is led, than the person who has a clean bill of health, so far as ancestors are concerned, but who either from compulsion or choice, lowers the vitality of the system by breathing foul air and living amid general insanitary surroundings. As to marriage of individuals having a consumptive family history, the writer is like the late premier of England on political questions, somewhat noncommittal. He states that, professed advocate of eugenics though he be, the marriage of persons having a consumptive family history can not be altogether condemned. He declares in almost the same breath that "if some of us are to marry and some are not, I would rather in a general way, that those who have a bad family history remain in single blessedness." Perhaps, after all, this is the most sensible mode of regarding the matter, although, of course, it stands to reason that those who have acquired the disease would far better not marry.

Makes Artificial Albumin.—Our German exchanges announce that Emil Fischer has succeeded in the synthetic production of certain bodies resembling peptones. His communication was presented at a meeting of the German Chemical Society at Berlin, January 6, and the mere preliminary announcement of his address attracted a crowd of eminent scientists from all over Europe. Fischer is professor of chemistry at Berlin and has an international reputation as the "master of synthetic chemistry." In his latest research he sought to produce the albumoses and peptones by reversing the process of their production, commencing by blending together certain amino acids, the resulting compounds possessing properties which correspond to those of the peptones. They present all the more important reactions of the peptones, and he calls them peptids. He can make them with 2, 3, 4, 5, 6 and 7 different amino acids, and has thus succeeded in producing 80 different kinds of peptids. He distinguishes them by the number of molecules, the same as the saccharids, calling them dipeptids, tetrapeptids and so on to polypeptids. The peptids are optically active like the natural proteins, and the more complicated the peptid the more closely it resembles natural derived albumin. The polypeptids give the biuret reaction, they are precipitated by phosphotungstic acid, and the trypsin of the pancreatic juice splits a number of the artificial peptids, with the same resulting products as in hydrolysis of the proteins. To complete the researches it was only necessary to succeed in producing a peptid from natural derived albumin, to fit the last link into the chain of the synthesis of albumin. This he has accomplished with silk fibrin, a comparatively simple derived albumin, which he was able to reduce to glyzyl alanin, identical in every respect with the artificial peptid glyzyl-alanin.

The Danger of Ice.—Sir Shirley Murphy, medical officer of health to the London County Council, has recently called attention to the danger of allowing natural ice to come into contact with beverages and foodstuffs. He refers to the matter in part as follows: "As regards the conditions under which the ice industry is carried on, there are undoubtedly certain sources of risk of contamination incidental to the manipulation of ice in London, but the main question to be decided is the advisability of employing natural ice under circumstances in which it comes into actual contact with beverages and with food. Having in view the facilities which now exist for obtaining artificial ice, it appears not unreasonable to suggest that for all purposes in which there is actual contact with food, ice made from absolutely pure, and preferably from distilled water, should be used, inasmuch as the source

of natural ice can never be known with certainty by the consumer." Dr. Hamer, assistant medical officer to the council, points out that it is necessary to call attention to the need of supervision of cold stores. The New York legislature last year had under consideration a bill for the inspection of storage warehouses located in cities of the first class; to insure sanitary conditions in these stores, and to give the inspectors authority to condemn any foods stored therein which are considered as unfit for use or deleterious to health; also to provide a license fee of \$500 per annum for such inspection. Dr. Hamer also called attention to the fact that the attempt has been made in Chicago to provide for the inspection of cold-storage plants and to limit the time of storage of perishable goods. In the salmon and fresh water fisheries bill, introduced into the British house of commons last year, it was proposed to make compulsory the registration of refrigerating premises in which salmon may be stored. Finally, it was pointed out that it will probably be found necessary in the near future to require registration of all cold-storage plants, as the possibilities of mischief in the case of a cold store are greater than they are in that of a dairy, yet the latter is subject to control by the health authorities, while the former is not.

Free Sanitarium Treatment of Non-tuberculous Affections Among the Working Classes of Germany.—Much has been written about the sanitarium treatment of the tuberculous policy holders in the insurance against sickness now compulsory in Germany, but little has been said in regard to courses of treatment given to non-tuberculous affections. It seems, however, that during the last seven years 67,795 men and 41,765 women have been given a free course of treatment on account of rheumatism, gout, heart and lung affections, anemia, urinary or venereal affections or inebriety. The average length of the course of treatment was about fifty days. The treatment of these affections is less expensive for the insurance companies (Kranken-kassen) than that of tuberculosis, as the courses are shorter and forced feeding is not required, the total cost for each patient averaging about \$50 for the former and \$90 for the latter. The number of venereal cases admitted to treatment was 473 in 1904, 508 in 1903, 333 in 1902, and 142 in 1901. The insurance companies have not found it necessary to establish special institutions for the care of their non-tuberculous sick policy holders, but distribute them as pay patients in existing hospitals, clinics, convalescent homes, etc. Out of each 100 thus treated, from 34 to 38 are still gaining their own livelihood after an interval of five years. The permanent results are thus from 4 to 7 per cent. more favorable than with the tuberculous beneficiaries. In a communication to the *Deutsche med. Wochs.* for January 4, Wagner analyzes and comments on the statistics recently published by the insurance societies. He remarks in conclusion that during the last seven years 88,000 tuberculous working people have been treated in special sanatoria, over 59,000 other sick persons in various hospitals, and over 36,000 others at the best watering places of Europe. In nearly every instance the course of treatment was a long one, causing considerable expense. Under other conditions these prolonged courses of treatment are possible only for the well-to-do. The classes of society which hitherto have had to do without calling in a physician to attend them in case of illness are now treated by eminent specialists and receive prolonged care in a suitable medical institution. The results on the whole are very encouraging, but at first not quite so favorable in the non-tuberculous as in the tuberculous cases, although the later outcome is better.

Sanitary Measures in French African Possessions.—Small-pox is very prevalent in the Senegal country, southwest of the Sahara desert, and efforts have been made to introduce vaccination without success. The lack of calves for obtaining the vaccine and the fact that vaccine material brought from Europe spoils on the long trip, render it impossible to apply the usual methods of vaccination. Arm-to-arm vaccination was tried but proved expensive, and is liable to be dangerous, as syphilis and leprosy are so frequently encountered. Consequently this method had to be abandoned. Promising experiments are now under way in which rabbits and gazelles are used for the vaccine producers. An epidemic of yellow fever decimated the population of Senegal in 1900, but within the last year or so an effectual system of "mosquito brigades" has been established among the natives, which have done remarkably fine work. Armed with shovels and pickaxes, cement and kerosene, they visit every nook and corner of the towns, villages and stations. An account in the *Semaine Méd.* for January 10 states that the natives have taken hold of this work with zest and have co-operated in promptly isolating the occasional cases of yellow fever encountered, so that no con-

tagion has resulted in any instance from the imported disease. Similar prophylactic measures have been undertaken against malaria, screening of houses, etc., and the reduction in the number of cases among the employés of the railroads and the soldiers has been strikingly apparent. At some places the results were nullified by taking the netting to the window blinds. This prevented the opening of the blinds for ventilation so that the men preferred to sleep on the verandas. Numerous regulations in regard to hygiene have been enforced and boards of public health appointed in various communities. The authorities pay about \$2,400 a year to certain civilian physicians who reside in populous native centers to instruct the natives in hygiene and give them medical attendance. They are engaged for five years with six months leave of absence twice after two years of service. Circulars and pamphlets giving the prophylactic measures against various diseases of man and animals have been distributed freely, and the *Journal Officiel*, published by the governor general of French Western Africa, devotes much space to suggestions in regard to the care of the health in general, and under the local conditions.

LONDON LETTER.

Fracture Dislocation of the Shoulder; Action Against a Doctor for Malpractice.

At the Glamorganshire assizes a mining engineer brought an action for negligence against Dr. Skyrme and Mr. Lynn Thomas (the leading surgeon in South Wales), in which occurred a most regrettable conflict in the evidence of eminent surgeons. The plaintiff was knocked off a bicycle, receiving a violent blow over the right shoulder, with lacerations of the face, wrist, hand, knee and ankle on the right side. Half an hour later he was seen by Dr. Skyrme, who discovered a dislocation downward of the head of the humerus, with swelling of the shoulder. By pulling on the limb with his foot in the axilla he was able to reduce the dislocation, but finding crepitus and effusion in the axilla, he anticipated serious complication and expressed a wish for a second opinion. Mr. Lynn Thomas saw the case and confirmed Dr. Skyrme's serious prognosis. There was one-half inch shortening, showing that the fragments were overriding; the pulse was small compared with the opposite side, and the veins of the forearm were engorged. It was thought advisable to submit the limb to the manipulations necessary to bring the fragments into end-to-end apposition. As it was thought dangerous to apply the usual methods for retaining the fragments in position, lateral apposition was obtained by bringing the elbow to the side and fixing it there. The usual large pad in the axilla was omitted, only a small pad being used. During the following night the plaintiff removed the small pad from the axilla. Some days later Dr. Skyrme found him lying in bed with an ambulance book in front of him and a set of bandages, which, with the assistance of the nurse, he was endeavoring to arrange. Subsequently a skiagraph was taken and shown and explained to the patient. His case was largely based on this and other skiagraphs taken subsequently. They showed displacement inward of the upper end of the lower fragment, in which position union took place. The plaintiff stated that the arm was crippled, though he admitted that he could use the hand. In order to obtain evidence in support of his case he visited various medical men, but met with difficulties in inducing them to give evidence. At the action, Mr. A. J. Pepper, Mr. W. Rose and Mr. W. H. Battle gave evidence on his behalf. Mr. Pepper did not accept the evidence given by Dr. Skyrme and Mr. Lynn Thomas as to the nature of the injury. His opinion was that there had been no dislocation and no such interference with the circulation as to threaten gangrene. He thought that the deformity ought to have been reduced at the time of the accident and that failing, that the open operation should have been advised when the skiagraph showed the extent of the displacement. Mr. Rose and Mr. Battle agreed with this evidence and expressed the opinion that the treatment was improper. Mr. Lynn Thomas stated that he informed the patient that the result of a skiagraph could not affect the treatment, emphasized the need of keeping a strict lookout for further embarrassment of the circulation, and dismissed the idea of open operation. For the defendants, Sir Thomas Smith stated that the only proper judges as to what should have been done on the day of the accident were the physicians in attendance, and that he did not think that operation at a later stage, with a view to replacing the fragments, would have improved matters, his experience being that such an operation usually left the patient worse. When asked whether the x-rays had modified treatment he said, "They have largely increased actions at law." Mr. Mansell Moullin

and Mr. Robert Jones also gave evidence on the same side, the former stating that an attempt to bring the fragments into apposition on the day of the accident would have been dangerous, considering the injury to the vessels, nor would he have favored operation at a later stage. The jury disagreed and was discharged.

Sanitation in West Africa and in India.

Lieut.-Col. Giles has published a valuable report on an expedition sent by the Liverpool School of Tropical Medicine to investigate general sanitation and antimalarial measures in Sekondi, the West African gold fields, and Kumassi. He also makes a comparison between the conditions of European residence in the Gold Coast and those existing in India. At Sekondi, the point of commencement of the railway which now extends to Kumassi and which is intended to open up the Hinterland, a rapid growth of population, both European and native, is practically certain. The report dwells on the importance of maintaining a complete separation between European and native dwellings, even when the latter are occupied by native clerks, who are "people of education and quite inoffensive neighbors from a social point of view," the fact remaining that they and their families are as dangerous sources of the malarial parasite as their less cultivated countrymen. The daily association with natives for business purposes appears to be unobjectionable, but their blood is liable to supply the malarial parasite to mosquitoes, who may then convey it to Europeans sleeping in the vicinity. In addition to the separation of residential quarters it is declared necessary to fill up two lagoons which intersect the town and furnish extensive breeding places for mosquitoes. The railway to Kumassi calls for observation only on the score that its rolling stock is ill-adapted to the requirements of tropical traveling. Kumassi itself is infected by mosquitoes and also by a fly analogous to the tsetse and like it a carrier of trypanosome fatal to horses, and its site is declared to be so unfavorable to antimalarial operations that the best solution of the difficulty would be to remove the seat of the district government to some more favorable position. Failing this, it is probable that a great improvement of the existing conditions might be brought about by a thorough draining of the surrounding marsh. A favorable report is given, not only of the possibilities of antimalarial sanitation in the mining districts, but also of what has been accomplished. Stress is laid on the economy attendant on these measures. The financial success of a mining company depends far more on them than is usually recognized. The cost of paying and nursing sick men and the heavy expenses involved in invaliding and replacing them are a heavy drag on the industry which might be lessened by steady attention to sanitation, which would yield handsome interest on the money expended. As a general result of a comparison between the salubrity of West Africa and that of India, Colonel Giles concludes that there is not much difference between the two climates and that the main reason for the better health of the Anglo-Indian is that he has made himself more comfortable in his surroundings and that the unsanitary habits of Indian natives has led to the European living quite apart from the native and with consequent lessened liability to the contraction of native diseases.

Sanitary Measures in India in 1903-4.

The annual blue-book just issued on this subject contains much valuable information. The general health was less satisfactory than in 1902, chiefly owing to epidemics of cholera and plague. The mean death rate for India was 34.7 per 1,000 as against 31.5 in 1902. The mortality in the Bombay Presidency was 43.9, the highest on record, with the exception of the terrible famine year of 1900. Plague alone claimed 92,000 victims in Belgian and Dharwar, thus raising the mortality of these districts to 70. The mortality of the chief diseases was as follows: Fevers, 19.6; plague, 3.03; cholera, 1.37; dysentery and diarrhoea, 1.21; smallpox, 0.41. In the European and native armies, on the other hand, the mortality was abnormally low, one of the main reasons for which was their comparative immunity from plague. As usual, the chief causes of sickness among British troops were malarial and venereal disease, which accounted for 23.9 and 23.5 per cent., respectively, of all admissions to hospitals; but these diseases were not very fatal and the chief cause of mortality was typhoid fever which was responsible for 32 per cent. of deaths from all causes in the European army, while hepatic abscess was the cause of 10 per cent. British rule has conferred no greater boon than the hospitals and dispensaries, of which there were 2,500 in 1903. No fewer than 372,857 in-door and 22,399,350 out-door patients were treated. The number of

operations constantly increases, especially those for cataract. Out of 854,000 operations only about 2,000 proved fatal.

Extraordinary Attempt to Obtain Compensation by Self-Inflicted Mutilation.

An extraordinary attempt to obtain compensation by self-inflicted mutilation has been the subject of an action in the courts. At the first trial, the jury disagreed, but at the second they found a verdict against the plaintiff. According to his story, he was traveling alone in a compartment on the Tall Vale Railway (in Wales). He stood up soon after leaving the station in order to place his umbrella on the rack opposite, and in doing so was caused to reel against the door by a sudden jerk of the train. The door was open, owing to the negligence of the company's servants, and he fell out, with the result that he lay with his feet across the other line of rails, insensible, and a train passed over his legs, so crushing them as to necessitate double amputation. This tale not only lacked corroboration, except in the matter of injuries, but was contradicted by evidence for the company. The company's servants swore that, when the train left the station, there was no traveler in the compartment which he described, and no door was found open at the next station. The locomotive superintendent found by experiment that no jerk took place when the train passed the place of the alleged fall. On the other hand, it was possible for the man to have got there by walking along the line in the dark, and he could have bought the railway ticket found on him before starting. In addition to the motive to obtain compensation from the railway company, he had in his possession no fewer than three coupon-bearing newspapers which insure their purchasers against railway accidents. Another fact which told against him with the jury was that, before the alleged accident, he spoke to his acquaintances of a dream which foretold the loss of two legs below the knee. But the medical evidence told still more strongly against him. His injuries were confined to the crushing of both legs in a straight line, and it was difficult to explain how he could have fallen and remained in the attitude necessary for this to occur, or how the accident rendered him unconscious and left no physical traces, not even bruises. Moreover, after the train passed over his legs, he showed no sign of the dazed condition usually associated with a severe fall and insensibility. He summoned a miner who was passing and gave him detailed directions for the improvisation of tourniquets for both thighs, and the physician who was called was struck with his coolness. On being moved into a van, he put out his hands to guide the passage of the shutter on which he lay. When told his legs must be amputated, he replied: "Yes, I will have my two legs off below the knee." The jury rejected his claim. This case is one of the most remarkable instances on record of the extent to which a man will inflict injury on himself for the purpose of obtaining compensation.

The Battle of the Nurses.

A serious difficulty has arisen among the nurses. In Great Britain there are no fewer than 80,000 nurses. Many thousands of these have spent much time and money in reaching a high standard of efficiency; and in engaging a nurse the public have no guarantee that she knows her business. Any girl can put on a cap and apron and call herself a trained nurse. The term "certified nurse" counts for something with the public, but it guarantees very little. There is no control over the hospitals in the issue of certificates. In some hospitals a girl can obtain a certificate after only six months of the most elementary work. In others she has to serve four years and to pass a difficult examination. A demand is now being made by these highly trained nurses for registration by the state and an established standard by which efficiency may be recognized. The agitation for registration began in 1887 with the foundation of the Royal British Nurses' Association by Mrs. Bedford Fenwick, who was for many years a nurse and matron in a large hospital. Subsequently a split occurred on the question of registration. A part of the association, headed by Mrs. Fenwick, seceded and formed the "Society for the State Registration of Nurses," which is now in a flourishing condition. Both societies drafted parliamentary bills which were duly blocked, but in 1904 a select committee of the house of commons considered the question and recommended the registration of nurses by a board to consist of twenty-one members. A battle is now being waged between the two societies. The older society asks that the nurses should be represented on the board in the proportion of one to five physicians, while the younger society claims that there should be a preponderance of physicians.

Pharmacology

No Longer Members of the Proprietary Association.

The Lambert Pharmaceutical Company, St. Louis, ask us to announce that they have withdrawn from membership in the Proprietary Association of America.

Formula of Ayer's Cherry Pectoral.

Dr. Frank L. Smith, Stafford Springs, Conn., writes as follows: "In a recent number of THE JOURNAL you printed a copy of the formula of 'Ayer's Cherry Pectoral.' In the issue of January 6, Dr. Henry Leffman of Philadelphia also presents one in which he notes the fact, which struck me most forcibly, that the above nostrum was sold years, probably thirty or forty, before the introduction of terpin hydrate or heroin. Something like a year ago I saw in a medical journal an offer of the Ayer people to send samples and formula of their pectoral to any physician requesting it. Out of curiosity I wrote asking for it, and here is an exact copy of the formula sent me:

| | | |
|------------------------|----------|-------|
| R. Morphine acct. | KTS. iss | 1097 |
| Sanguinaria tr. | 3ii | 7 39 |
| Antimonii vin. | | |
| Ipecac vin. aa. | 3iii | 11 09 |
| Frax virg. syr. | 3iii | 88 72 |

"Can you inform me which is the correct one, and when the change, if any, was made?"

Endorsement of the Fight Against Nostrums.

At a recent meeting of the Central Oklahoma Medical Society resolutions were adopted commending the work of *Collier's Weekly* and the *Ladies' Home Journal* in exposing "patent medicine" frauds.

Similar resolutions were passed by the Oklahoma County (Okla.) Medical Society and by the Venango County (Pa.) Medical Society. The latter society, in addition, commended the action of the *Evening News*, of Franklin, Pa., in refusing to accept contracts from "patent medicine" firms.

At the last meeting of the Muskogee (I. T.) Medical Society the following motion was unanimously carried:

The Muskogee Medical Society tenders its sincere thanks and appreciation to THE JOURNAL of the American Medical Association for the timely crusade against the nostrums and so-called proprietary medicines and for its stand for an ethical profession.

At a meeting held January 8 the Hennepin county (Minn.) Medical Society passed resolutions approving the action of the American Medical Association in establishing a Council on Pharmacy and Chemistry and expressing its belief that the work of the council will result in great good, both to the public and to the physician. The society also resolved to support THE JOURNAL of the American Medical Association in its campaign of education in regard to nostrums and medical preparations.

Peruna's Shrewd Advertising.

It is often said that "it is an ill wind that blows no one any good." The successful promoter, whether he be exploiting stocks, the latest book or patent medicine, takes advantage of everything that comes his way to push the sale of his product. Strange as it may seem, the nostrum promoters are taking advantage of the campaign against patent medicines to further the sale of their products. The *New Idea* calls attention to the following advertisement:

"There are people who object to the use of any proprietary medicine on the suspicion that spirits may have been used in its manufacture.

"There Peruna has not altogether escaped such criticism. But people who have taken Peruna, who have known of the benefits of Peruna by actual experience, know how utterly unfounded such notions are concerning Peruna. When the treasurer of the National Prohibition Voters' League comes out in a public statement to the effect that words fail to express his praise for Peruna and for the manufacturers of Peruna, it must appear to every candid mind how utterly irrational it is to suppose that any objection could be raised against Peruna from the standpoint of temperance.

"Peruna has among its friends many of the leading temperance workers in this country who give it unstinted praise and do not hesitate to endorse it by the use of the most extravagant language."

The *New Idea* remarks that, since Peruna contains 28 per cent. of alcohol, "this advertisement is distinctly funny in its studied attempt to appeal to temperance people without flatly denying the presence of alcohol. . . . There is undoubtedly much truth in that advertisement. For instance, the first paragraph is true; so also the first sentence of the second paragraph. And we doubt not that every word of the last paragraph could be proved in court; many a temperance worker doubtless finds Peruna very convenient, and after he has had several liberalized doses he would be likely to feel like endorsing it 'by the use of the most extravagant language.' The word 'extravagant' is perhaps used advisedly by the Peruna people; it means, according to the Standard, 'exceeding just or ordinary limits, reason, truth or probability; immoderate; visionary.' Thus it would indicate their own opinion that these temperance workers' praise of Peruna 'exceeds reason, truth and probability.' The enthusiasm of the treasurer of the N. P. V. L. seems directly traceable to the use of Peruna q. s. and is not particularly difficult to account for. We ourselves have seen men in such a condition that 'they could not think of words to express their praise' of something that they had lately been drinking.

"For some reason the Acting Commissioner of Indian Affairs of the U. S. Government does not seem to know that 'it is irrational to suppose that any objection could be raised against Peruna from the standpoint of temperance,' for the horrid thing actually said in his official circular to Indian Agents (August 10): 'The sale of Peruna is hereby prohibited. As a medicine something else can be substituted; as an intoxicant it has been found too tempting and effective.' Commissioner Larabee seems not to 'know of the benefits of Peruna by actual experience,' strongly emphasizing 'benefits.'

"Peruna advertising, in some instances, appears to say more between the lines than on them."

Advertising "Ethical" Proprietaries to the Public.

A Philadelphia correspondent sends us a copy of *The Evening Bulletin* of that city, which contains two specimen advertisements of 'cut-rate druggists that are suggestive, if not startling. Under the display heading, "Patent Medicines at Cut Rates," in the first of these advertisements, we find 19 proprietary remedies. Of these no less than 12 are advertised in medical journals, are freely prescribed by physicians and are generally claimed to be strictly for physician's use. The second advertisement, while not specifically headed, is more comprehensive, and contains less than 102 titles, of which 13 are soaps or toilet preparations, leaving 89 more specifically medicinal preparations. Forty-two of the latter, or not far from one-half, are so-called "ethical" proprietaries that are widely used by a certain class of physicians. Several of the preparations are dangerous if used indiscriminately, or by those who do not know their action. That this form of advertising constitutes an abuse that can be regulated and controlled by the manufacturer of the preparation is evident. In this connection it may be well to point out to manufacturers who are supplying physicians with "ethical" proprietaries that manufacturers of "patent medicines" have found it practicable to market their wares through regularly appointed retail agents, who are bound by a penalty contract to limit their sales of the several preparations to serially numbered packages, at a specific price. If manufacturers of "patent medicines" can enforce contracts of this kind it would seem that manufacturers of preparations designed for the sole use of physicians could, if they chose, control the sale of their preparations so that they would not be advertised to the public, for whom many of them would be decidedly dangerous.

"Patent Medicines" at the Antipodes.

At the Australasian Medical Congress, held in Adelaide last September, Mr. G. A. Syme, in his address on "State Medicine and Medical Ethics," recalled the circumstances under which the New Zealand parliament passed an act authorizing the framing of regulations making it compulsory that all patent medicines should have the formula printed on the label, and that if any poison were contained in the preparations the bottle must be labeled accordingly. The manufacturers of these preparations and their agents raised such a protest and brought such influence to bear that the regulations were modi-

fied to the extent that the formula instead of being placed on the bottle was to be lodged with the health department. The manufacturers still objected, and as no further alterations could be obtained they decided not to send their preparations to New Zealand. Mr. Syme stated that evidently the vendors of patent medicines clearly realized that once the real nature and commercial value of their preparations became publicly known, there could be no demand for them at their present extravagant prices. In commenting on this the *British Medical Journal* says: "Happy country! which has got rid of this pestilential traffic; but we wonder what our halfpenny press would say if any legislator were bold enough to venture to propose a bill which would deprive them of a large part of their receipts. Some day the public may wake up to the desirability of taking action to check the sale of preparations which are either poisonous or fraudulent, as those which are neither would have nothing to fear from such a law." Evidently the press in Great Britain and her colonies is as much under the dominion of the "patent medicine" man as it is in the United States.

Correspondence

Dr. McCormack's Successful Work.

NASHVILLE, TENN., Feb. 5, 1906.

To the Editor:—I had already learned much of what Dr. J. N. McCormack, as medical organizer of the American Medical Association, has been doing in other states, but was not fully impressed with the importance of his work until I heard him at Gallatin one week ago. This was his first lecture in middle Tennessee, and I was so anxious to learn something of the nature of his work that I visited Gallatin for the purpose of hearing him. He spoke in the courthouse at 2 p. m. to an audience composed of medical men, ministers, lawyers, county officials, business men, teachers and women. Every one present listened intently throughout his talk, which was entertaining, interesting and instructive. I am sure that the members of the county society were made more determined to perform their duties to each other and to the public better than they had ever done before. I am sure that the laity present went home impressed with the fact that physicians are remiss in their duty if they hold themselves aloof from their professional fellows. I was greatly impressed with the importance of having the general public hear Dr. McCormack, for the reason that there are some physicians who need to be driven to the performance of their duties, medically speaking, by public opinion.

If Dr. McCormack were doing nothing else than striking boldly at the patent medicine evil, this alone would justify his being sent out by the American Medical Association. So pleased was I with the lecture, I am now arranging an itinerary for him in middle and east Tennessee which will keep him busy for several weeks. I only wish it were possible for him to visit every county in our state and every county in every other state. I do not believe there is another man in the United States who is as capable as he in the work he is doing.

G. C. SAVAGE.

Poisoning by Kopp's Baby Friend.

OMAHA, Jan. 23, 1906.

To the Editor:—Since reporting to you the case of opium poisoning from the use of "Kopp's Baby Friend" I have seen another child suffering in the same way from the same cause. The medicine in this case had been sent through the mails from the Kopp's at York, Pa.; the bottle bore the additional inducement for use that it was "the king of baby soothers." It seems to be the practice of those people to watch the birth notices published in the newspapers and to furnish free samples of their mixture to the baby's mother, and then our druggist will do the rest. The Antikamnia Chemical Company is using the mails in the same way to bring its goods before the people. I send you herewith a package from that company to one of my patients. It tells the tale. I hope that the proper authorities will put a stop to this infamous use of the United States mail.

ROBERT E. ESKILDSON, M.D.

Association News

NEW MEMBERS.

List of new members of the American Medical Association for the month of January, 1906:

- ALABAMA.**
Black, J. B., Blomberg.
Cocke, P. L., Birmingham.
Howard, P. J., Mobile.
Lee, J. D., Lynn.
Madler, N. A., Mobile.
- ARIZONA.**
Broderick, D. E., Bisbee.
Brown, L. E., Troy.
Goddard, E. S., Jr., Lowell.
Raymond, R. O., Williams.
- ARKANSAS.**
Beck, E. L., Texarkana.
Bentley, C. E., Little Rock.
Black, E. M., Yaney.
Blackwell, U. S., Esau.
Brown, W. A., Monticello.
Cannon, J. S., West Fork.
Cotham, E. R., Monticello.
Crocker, J. T., Lonell.
Dickson, H. N., Paragould.
Gallagher, W. M., Foreman.
Gillespie, L. J., Hope.
Harrod, G. W., L. Coal Hill.
Hankins, G. T., Paragould.
Jones, E. T., Hampton.
Jones, O. E., Newport.
Kinsworth, J. H., Little Rock.
Lamb, Ellis, Lorado.
Snider, W. P., Little Rock.
Martindale, G. H., Hope.
Owen, H. M., Newport.
Powell, J. T., Mayville, Ark.
Turner, N. M., Berryville.
Prickett, Charles, Tarry.
Robinson, F. A., Barfield.
Routh, H. P., Hackett.
Stanley, D. P., Little Rock.
Stewart, S. S., Little Rock.
Stroud, H. A., Jonesboro.
Turner, N. M., Berryville.
Turner, W. S., Plakemore.
Weaver, S. J., Saratoga.
West, Crawford, Newport.
West, M., Clearend.
Williams, E. K., Arkadelphia.
Williams, J. M., Malvern.
- CALIFORNIA.**
Bleeker, J. J., Pasadena.
Brunn, Harold, San Francisco.
Burke, W. P., Highland.
Christiansen, H. B., Salinas.
Dietsch, C. P., Los Angeles.
Dodel, Xavier, San Francisco.
Dunsmoor, N. C., Los Angeles.
Emerson, H. K., Los Angeles.
Gray, Diego.
Green, Nat., Watsonville.
Hearne, J. C., San Diego.
King, J. C., Bauling.
Koford, Fleming, Oakland.
MacDonald, E. A., Redlands.
McGulston, Caroline, Pasadena.
Manie, Alva F., Redwood City.
Marrand, R. C., Los Angeles.
Scholl, A. J., Los Angeles.
Siehe, Elizabeth B., San Francisco.
Wheeler, F. R., San José.
Worthington, G. B., McCloud.
Yast, F. O., Los Angeles.
- COLORADO.**
Childs, S. R., Denver.
Collins, Harriette M., Montrose.
Elder, E. A., Pueblo.
Hopkins, J. R., Denver.
Kennedy, A. L., Denver.
MacLean, A. M., Leadville.
McCartney, O. P., Delta.
Orendorf, Otto, Canon City.
Ort, C. L., Alamosa.
Ringle, C. A., Greeley.
Taylor, R. L., Denver.
- CONNECTICUT.**
Blanchard, I. D., Hartford.
Brownlee, H. E., Danbury.
Burham, J. L., Lyme.
Clarke, J. A., Greenwich.
Cloonan, J. J., Stamford.
Contes, F. A., Mystic.
Coulton, H. H., Hartford.
De Forest, L. S., New Haven.
De Wolfe, D. C., Bridgeport.
Engelke, Charles, Waterbury.
Fremont, E. T., New Britain.
Frost, C. W., S., Waterbury.
Gillam, W. S., South Manchester.
Hamant, I. L., Norfolk.
- DELAWARE.**
Crossmore, J. L., Wyoming.
Wales, J. P., Wilmington.
- DISTRICT OF COLUMBIA.**
Barry, Edmund, Washington.
Barr, H. S., Washington.
Crosson, H. J., Washington.
Douglas, J. F., Washington.
Erving, W. G., Washington.
Fillebrown, J. P., Washington.
Glazebrook, L. W., Washington.
Hammett, C. M., Washington.
Hardin, B. L., Washington.
Lehr, L. C., Washington.
McKale, J. F., Washington.
Magruder, E. P., Washington.
Mallan, T. F., Washington.
Mason, R. F., Washington.
Nevitt, J. E., Washington.
Randolph, R. M., Washington.
Thomas, J. D., Washington.
Tucker, W. P., Washington.
- GEORGIA.**
Crook, Martha, Columbus.
Hull, Marion McEl., Atlanta.
Manor, G. R., Warrenton.
Mathews, W. A., Augusta.
Mulhern, W. A., Augusta.
Patrick, J. Z., Statesboro.
Spence, I. N. B., Social Circle.
- ILLINOIS.**
Allen, S. A., Chicago.
Anderson, F. M., Decatur.
Barnes, S. D., Chicago.
Barnsback, R. S., Edwardsville.
Bennett, Cleaves, Mattoon.
Devitz, O. J., Chicago.
Edwards, L. M., Milwaukee.
English, J. N., Gillespie.
Ethernott, M., Carbondale.
Fox, Ralph, Bloomington.
Frank, J. E., Keosauqua.
Gailley, D. S., Ashland.
Gibbith, G. H., Clifford.
Gilmore, W. S., Chicago.
Gray, A. W., Chicago.
Grizzell, W. D., De Soto.
Haines, W. E., Bushnell.
Hamil, Charles, Greenview.
Hanly, H. H., Havana.
Harding, P. D., Evanston.
Hill, W. C., Murphysboro.
Holmes, J. A., Monticello.
Irwin, W. L., Plymouth.
Johnson, C. N., Chicago.
Jones, Leroy, Hooneston.
Jones, S. W., Danville.
Kalaclinski, Polke, Chicago.
Kaul, H. M., Princeton.
Kerschner, J. P., Dieterich.
Lands, R. F., Tiskilwa.
Littlejohn, H. C., Farmer City.
McDonald, J. H., Chicago.
Mefford, W. T., Chicago.
Moore, A. N., Mattoon.
Morgan, T. W., Virden.
Morris, E. V., D., Galesburg.
Orb, P. A., Chicago.
Paris, W. J. J., Cave-In-Rock.
Paul, W. H., Danville.
Richard, J. C., Chicago.
Randall, H. H., Decatur.
Roberts, H. H., Maywood.
Sheets, V. L., Chicago.
Stewart, A. F., Onida.
Sodewick, H. M., Peoria.
St. Clair, W. H., Elmhurst.
Stewart, H. J., Kewanee.
Taylor, Buford, Westville.
Tendall, H. H., Chicago.
Thorpe, S. H., Decatur.
Wilhelm, A. E., Decatur.
Wilkinson, G. H., Chicago.
Witt, H. H., Madison, Ill.
Wingbier, B. R., Searon.
Welker, J. W., Mattoon.
Walsh, W. E., Morris.
- INDIANA.**
Brand, H. E., Fairbanks.
Brannock, R. B., Jasper.

Bruggeman, H. O., Fort Wayne.
 Bury, D. M., Vincennes.
 Casbeer, I. M., Newport.
 Coleman, W. S., Rushville.
 Dickey, A. S., Tipton.
 Geisler, W. D., Clinton.
 Gillum, W. H., Rockville.
 Grayston, F. W., Huntington.
 Green, T. G., Shelbyville.
 Hooplandner, G. B., Elkhart.
 Hunt, J. H., Huntington.
 Holtzendorf, C. P., Plymouth.
 Haggerty, R. O., Elkhart.
 Hamilton, N. C., Kokomo.
 Hoyes, S. H., Ellettsville.
 Hurst, E. M., Cloverdale.
 Kahn, D. L., Indianapolis.
 Laval, William, Evansville.
 Morris, C., Rockville.
 McKee, W. E., Tipton.
 Miller, D. L., Goshen.
 Miller, J. M., Decatur.
 Oleschka, C. C. F., Fort Wayne.
 Ritter, T. B., Orleans.
 Rannels, J. N., Rochester.
 Sanders, J. M., Princeton.
 Snapp, J. A., Goshen.
 Shanklin, Leslie H., Sullivan.
 Strickler, S. L., Bogstown.
 Scott, N. W., Huntington.
 Thomas, P. B., Decatur.
 Van Swearingen, Garretie, Fort Wayne.
 Van Osdel, D. D., Rushville.
 Wall, E. T., Washington.
 Winander, W. C., New Albany.
 Wilcox, F. H., New Albany.
 Wolfe, Z. C., Corydon.

INDIAN TERRITORY.

Reber, G. A., Pentress.
 Savage, C. C., Hartshorne.

IOWA.

Anner, J. P., Waverly.
 Fuller, G. H., Delhi.
 Hannon, W. E., Hampton.
 Laurence, C. S., Falter.
 Manion, P. H., Charlotte.
 McCaulliff, G. T., Webster.
 Primm, C. W., Salem.
 Powell, Preston, Adair.
 Whitmire, W. L., Sumner.

KANSAS.

Brickell, J. B., Americus.
 Barber, C. E., Palco.
 Butcher, D. P., Severy.
 Bauer, W. H., Sylvia.
 Boock, H. H., Pittsburg.
 Cunningham, H. E., Garnett.
 Cobean, H. L., Wellington.
 Cheney, J. W., Kingman.
 Conner, J. A., Burlingame.
 Decker, J. C., Bellefonte.
 Elnother, C. L., Downs.
 Emory, E. B., Winfield.
 Fennor, W. L., Kansas City.
 Hymer, E. S., Wichita.
 Holman, J. T., Garland.
 Hart, M. M., Macksville.
 Henderson, A. H., Agenda.
 Henderson, A. C., Leonardville.
 Koezt, C. H., Onaga.
 Kline, J. S., Eldorado.
 Leich, E. J., Hlawatha.
 Moore, D. B., Osage City.
 Mills, H. L., Penasola.
 Martin, P. H., Iola.
 Manser, W. H., Burden.
 Markum, R. W., Scammon.
 McIntosh, E. S., Burns.
 Farrington, J. M., Emporia.
 Fitch, J. H., Emporia.
 Preston, H. H., Buffalo.
 Palmer, S. M., Florence.
 Redmond, G. W., Potter.
 Smith, A. D., Wamego.
 Stevens, L. A., Wheaton.
 Stevens, T. A., Caney.
 Steelsmith, Simon, Abilene.
 St. John, H. R., Altton.
 Tamm, G. D., Enterprise.
 Walter, G. R., Milan.
 Whigler, C. W., Harper.
 Zimmerman, A. C., Perry.

KENTUCKY.

Atkinson, J. L., Campbellsville.
 Beeler, G. F., Clinton.
 Bell, L. L., Pembroke.
 Bullock, W. O., Lexington.
 Bryant, J. P., Corbin.
 Bannister, W. D., Lexington.
 Davis, W. A., Ashland.
 Crowley, W. W., Newport.
 Cleaver, T. T., Lebanon.
 Davis, D. W., Louisville.
 Eason, H. A., Louisville.
 Dill, G. C., Louisville.
 Fulton, G. G., Williamsburg.
 Fleischaker, P. W., Louisville.
 Gibson, F. L., Ashland.
 Greenwell, J. L., New Haven.

Hunt, Charles, Clinton.
 Henderson, A. T., Ashland.
 Helmhold, A., Newport.
 Hite, A. G., Mount Vernon.
 Lewis, T. S., Lexington.
 Lapsley, F. L., Paris.
 Mattingly, W. E., Lebanon.
 Norris, C. S., Lexington.
 Prather, Porter, Lexington.
 South, J. G., Frankfort.
 Straus, E. C., Louisville.
 Thompson, G. E., Covington.
 Tydings, C. O., Cuyler.
 Van Meter, B. F., Lexington.
 Wade, J. H., Ashland.
 Walters, G. W., Covington.

LOUISIANA.

Robne, P. W., New Orleans.
 Wall, S. D., Slughter.

MAINE.

Boyle, Blanche C., Portland.
 Cleveland, H. H., Auburn.
 Gerrish, F. H., Portland.
 Hayes, D. W., Henderson.
 Hires, L. L., Westbrook.
 Nichols, H. H., Hingham.
 Peabody, F. B., Richmond.
 Pratt, G. L., Farmington.
 Phelps, Stuart E., West Sullivan.
 Sancer, E. B., Bangor.

MARYLAND.

Hill, J. G., Baltimore.
 Milhous, L. B., Baltimore.
 Purvis, J. O., Annapolis.
 Plummer, Edward, Baltimore.
 Roulston, T. C., Buckersstown.
 Reuland, George, Baltimore.
 Ries, A. F., Baltimore.
 Samuels, A., Baltimore.
 Tannar, F. N., Baltimore.
 Tarran, William, Baltimore.
 Winteritz, C., Baltimore.
 Watkins, D. A., Hagerstown.

MASSACHUSETTS.

Auger, L. L., Worcester.
 Anthony, F. W., Haverhill.
 Aver, J. B., Boston.
 Burley, E. T., Worcester.
 Binkley, D. N., Boston.
 Bellamy, W. W., Dorchester.
 Blanchard, B. S., Brookline.
 Butler, J. L., Springfield.
 Berry, L. M., Hingham Falls.
 Buzzell, David, Woburn.
 Beckett, F. H., Fall River, Mass.
 Bryant, G. W., West Somerville.
 Baker, G. L., Boston.
 Brickett, Beatrice H., Newton Center.

Brown, O. J., North Adams.
 Beal, H. W., Worcester.
 Bushnell, Homer, North Adams.
 Brace, G. W., Westfield.
 Cummin, J. W., Boston.
 Canfield, T. E., Woburn.
 Barker, E. J., Boston.
 Chase, H. M., Boston.
 Cozan, J. A., Boston.
 Crocker, J. M., Cambridge.
 Cones, W. P., Boston.
 Calse, G. E., Lowell, Mass.
 Clark, L. B., Waverly.
 Darling, C. R., Roxbury.
 Dennis, J. S., Boston.
 De Lue, F. S., Boston.
 Dudley, A. W., Cambridge.
 Drew, F. P., East Dedham.
 Dunn, F. P., Brookline.
 Elliot, H. L., Salem.
 Bosworth, W. H., East Boston.
 Edwards, W. L., Boston.
 Emerson, Kendall, Worcester.
 Emerson, E. E., Tewksbury.
 Finkelstein, Harry, Boston.
 Fair, R. P., Boston.
 Fitzgerald, J. J., Charlestown.
 Fish, Lewis, Boston.
 Fleming, P. J., Cambridge.
 Flynn, H. L., Dorchester.
 Greenwood, A. M., Marblehead.
 Gilbert, D. J., New Bedford.
 Getchell, A. C., Worcester.
 Garcean, Edgar, Boston.
 Gase, T. H., Worcester.
 Greene, R. S., Dorchester.
 Hall, W. D., Boston.
 Hunt, G. E., Holyoke.
 Hurd, A. J., Boston.
 Hache, S. W., New Bedford.
 Hayland, W. C., Worcester.
 Hickey, J. A., Peabody.
 Howe, H. N., Greenfield.
 Hunter, C. F., Boston.
 Hamilton, Annie L., Boston.
 Hurd, R. C., Newburyport.
 Haskins, M. R., Palmer.
 Hayes, S. W., New Bedford.
 Hooker, E. D., Arlington.
 Harlow, G. A., Tyngsborough.

Holyoke, Frank, Holyoke.
 Jones, E. W., Lynn.
 Jefferson, H. P., Boston.
 Kite, W. C., Hingham.
 Kahan, G. W., Brookline.
 Lyons, H. H., Fitchburg.
 Lancaster, S. R., Cambridge.
 Lang, H. B., Dorchester Center.
 Linnahd, S. W., Boston.
 Litchfield, Harry, Roxbury.
 Lowd, H. M., Swampscott.
 Loring, W. W., Malden.
 Lord, S. A., Boston.
 McGillicuddy, R. A., Turner's Falls.
 Mooring, S. W., Gloucester.
 McSheehy, T. W., Cambridge.
 Makechnie, A. N., Cambridge.
 Morse, H. L., Boston.
 Moulton, C. F., Boston.
 Morrison, W. A., Boston.
 Medalla, L. S., Boston.
 MacCoy, W. E., Brookline.
 MacLaughlin, J. L., Roxbury.
 MacCormick, J. A., Boston.
 Norton, G. E., Cambridge.
 Naves, E. H., Newburyport.
 O'Connor, D. F., Worcester.
 Perry, H. J., Boston.
 Phelps, O. W., Warren.
 Post, Abner, Boston.
 Pastene, A. A., Dorchester.
 Pond, E. H., Boston.
 Pierce, M. V., Milton.
 Plummer, E. M., Boston.
 Potter, Frances W., South Framingham.

Ruston, W. D., Somerville.
 Rogers, A. B., Boston.
 Riley, Elizabeth A., Boston.
 Robb, W. H., Jr., Boston.
 Reynolds, H. J., Boston.
 Ring, A. H., Arlington Heights.
 Richmond, Simon, Roxbury.
 Saville, S. C., Boston.
 Sanborn, P. M., Marblehead.
 Stockwell, E. W., Adams.
 Smith, A. A., Springfield.
 Scanlan, T. J., Boston.
 Shannon, N. L., Cambridge.
 Scannell, D. B., Boston.
 Stevens, C. R., Worcester.
 Swan, W. D., Cambridge.
 Stevens, G. E., Boston.
 Sleeper, F. W., Boston.
 Simmons, F. A., Brockton.
 Staples, C. H., Malden.
 Stone, L. R., Newton.
 Smith, P. H., Lowell.
 Sise, L. F., Medford.
 Smith, A. C., Brockton.
 Tilden, Wilder, Boston.
 Townsend, C. F., Boston.
 Twombly, E. L., Boston.
 Tenme, V. F., Boston.
 Tully, E. J., Fitchburg.
 White, W. W., Ware.
 Wheeler, L. A., Worcester.
 Williams, J., Boston.
 Watts, H. F. R., Boston.
 Washburn, F. J., Jr., Boston.
 Worcester, Alfred, Waltham.
 Watson, F. S., Boston.

MICHIGAN.

Ballard, L. Anna, Lansing.
 Case, J. T., Battle Creek.
 Deming, D. P., Cass City.
 Graham, H. W., Mount Morris.
 Knapp, M. S., Flint.
 Kioz, W. T., Alton.
 Larson, C. J., Zeeland.
 Noble, A. L., Kalamazoo.
 Koch, A. C., Kearsarge.
 Sutton, M. P., Clavton.
 Shumway, F. W., Lansing.
 Wilson, H. R., Saginaw.
 Young, John, Onaway.

MINNESOTA.

Avty, W. J., Moorhead.
 Barrett, Fredrick, Eveleth.
 Baker, A. C., Stephen.
 Browning, W. E., Caledonia.
 Condit, W. H., Minneapolis.
 Catfoll, J. J., St. Paul.
 Forbes, H. J., Winnebago City.
 Groves, A. E., Brainerd.
 George, J. W., Atkin.
 Gormann, R. T., Ramseyville.
 Humiston, Harry, Worthington.
 Johnson, Hans, Murdock.
 Kern, M. J., Freeport.
 Kittelson, T. J.,ergus Falls.
 Lenont, C. B., Virginia.
 Nelson, A., Fertile.
 Parrott, B. W., Long Prairie.
 McIntire, C. F., St. Peter.
 Sternberg, Oscar, North Branch.
 Taylor, A. C., Duluth.
 Van Valkenburg, B. F., Long Prairie.
 Wilkison, S. L., Duluth.
 Whiting, J. F., Spencer Brook.

MISSISSIPPI.

Haskin, J. W., Aberdeen.
 Haganam, J. L., Centerville.
 Moore, T. A., Red Banks.
 Sykes, R. L., Columbus.
 Windham, J. H., Busby.

MISSOURI.

Atkins, H. S., St. Louis.
 Adams, W. T., Richards.
 Biggs, M. O., Centerville.
 Baumgarten, Gustav, St. Louis.
 Breed, M. E., St. Louis.
 Boyd, R. L., Springfield.
 Bond, Van H., Clark Plant.
 Bryan, W. M. C., St. Louis.
 Beatty, J. D., Troy.
 Cassidy, G. H., Tullip.
 Dunnivant, A. P., Kirkwood.
 Dryden, U. C., Ford.
 Egbert, T. H., Kennett.
 Eberlein, E. W., St. Louis.
 Foster, F. W., East Lynne.
 Goodier, R. H., Hannibal.
 Harris, J. E., Marshall.
 Hencke, A. F., St. Louis.
 Jenke, J. B., Lewtontia.
 Jude, J. H., St. Louis.
 Keithly, C. L., Nevada.
 Koch, C. D., Maryville.
 Murphy, H. C., Richland.
 Miller, E. H., St. Louis.
 Murphy, J. C., St. Louis.
 Moore, Chrysanthus, St. Louis.
 Moss, F. M., Paris.
 Martin, J. L., Kansas City.
 Menestrina, J. P., St. Louis.
 North, E. P., St. Louis.
 Porter, E. S., Milan.
 Pierce, H. M., Hannibal.
 Patterson, H. H., Edgerton.
 Rhumold, F. M., St. Louis.
 Roberts, C. F., Kansas City.
 Reed, W. M., Kansas City.
 Read, N. C., St. Louis.
 Sherman, D. H., Elwood.
 Shrader, E. W., Moberly.
 Shattner, Charles, St. Louis.
 Sauer, W. E., St. Louis.
 Stevens, W. W., Greenwood.
 Towles, S. P., Jacksonville.
 Townsend, J. P., Potosi.
 Traussig, A. E., St. Louis.
 Woody, C. E., Springfield.
 Wolf, I. J., Kansas City.
 Wallis, W. M., Maryville.

MONTANA.

Fligman, L. H., Helena.
 Marquis, T. B., Clyde Park.
 Renick, P. R., Helena.
 Townsend, H. H., Melrose.

NEBRASKA.

Bush, M. E., Sumner.
 Birdsall, G. A., Alexandria.
 Dearling, W. H., Lushon.
 Dwyer, E. H., Gordon.
 Hart, J. P., St. Paul.
 Heath, G. A., Davkin.
 Johnston, N. T., Unland.
 Karr, G. M., Hay Springs.
 Metz, P. H., Humphrey.
 Martyn, D. T., Columbus.
 Pilsbury, L. B., Lincoln.
 Reed, Eleanor C., Peru.
 Strassburger, E. L., Tobias.
 Smith, E. J., Burdett.
 Sumner, Ella P., Bloomington.
 Waggener, J. A., Dawson.

NEVADA.

Hickok, G. R., Gardnerville.
 Lewis, J. A., Reno.

NEW HAMPSHIRE.

Lougee, G. W., Freedom.
 Pease, B. D., Greenville.
 Richmond, A. P., Dover.
 Tarbell, W. H., Bedford.
 Wallace, A. S., Nashua.

NEW JERSEY.

Burnette, H. H., Hoboken.
 Cook, H. F., Newark.
 Flinn, P. A., Jersey City.
 Jacquemont, J., Union Hill.
 Jennings, W. B., Haddonfield.
 Kersten, A. J., Jersey City.
 Marcy, J. W., Merchantville.
 Krester, J. M., Jersey City.
 Van Dune, E., Elizabeth, Newark.

NEW MEXICO.

Harronn, W. S., Santa Fe.
 Klutz, W. C., Tucuman.
 Mack Lake, William, Silver City.

NEW YORK.

Brothers, A., New York City.
 Boland, M., Brooklyn.
 Burke, C. L., Brooklyn.
 Griswold, V. M., Fredonia.
 Hochhelmer, E., New York City.

Jacobus, A. M., New York City.
Lester, O. M., New York City.
Mecker, H. D., New York City.
Northrup, W. G., New York City.
Paepke, J. G., New York City.
Smith, T. A., New York City.
Tyner, S., New York City.
Thacher, J. S., New York City.
Woodruff, J. V., Buffalo.
Williams, C. M., New York City.

NORTH CAROLINA.

Ballard, A. M., Asheville.
Beall, W. P., Greensboro.
McGehee, J. W., Reidsville.

NORTH DAKOTA.

Barbour, H. W., Edgeley.
Bevan, J. W., Monanzo.
Call, A. M., Rugby.
Currie, A. N., Hafton.
Cramond, J. S., Mobail.
Davies, J. S., Granville.
Devine, J. L., Lansford.
Fisher, Stephen, Dickinson.
Hillis, A. E., La Moure.
James, H. J., Bathgate.
Kennedy, W. J., Enderlin.
McGuire, C. J., Larimore.
Pence, R. W., Balfour.
Stephenson, E. R., Ellendale.
Snyder, E. D., Nomic.
Smith, Clinton, Devil's Lake.
Todd, G. D., Medina.
Verret, B. D., Tolla.

OHIO.

Baker, G. H., Cincinnati.
Blakely, C. W., Washington.
Chillicothe.
Blackford, J. M., Martin's Ferry.
Clemmer, J. W., Columbus.
Coburn, R. C., Upper Sandusky.
Collins, J. W., Toronto.
Confield, Robert, Cincinnati.
Coplan, M., Cleveland.
Davies, D. J., Cincinnati.
Dunham, A. H., Dayton.
Ellis, W. C., Bentonville.
Follansbee, G. E., Cleveland.
Frechling, L. H., Hamilton.
Fleming, A. C., Marietta.
Farley, J. T., Lancaster.
Fife, C. C., Cincinnati.
Gatch, C. W., Milford.
Gordon, J. W., Cincinnati.
Gooden, J. L., Columbus.
Hills, H. B., Youngstown.
Henzler, C. J., Toledo.
Hussey, A. E., Cincinnati.
Harris, James, Cincinnati.
Held, H. F., Cincinnati.
Hart, R. B., Marietta.
Huston, C. N., Hamilton.
Irvin, J. W., Creston.
Infeld, T. H., Hartford.
Korell, F. A., Key.
Lutmer, J. A., Cleveland.
Messe, Charles, Chillicothe.
McKerrahan, S. B., Portsmouth.
Maloney, J. J., Cincinnati.
Metzenbaum, Meron, Cleveland.
Moore, W. R., Ironton.
Norris, K. A., Columbus.
Parke, B. R., Wellsville.
Root, H. B., Grandview.
Ransaw, Allan, Cincinnati.
Sheppard, D. O., Barnesville.
Shelton, H. P., Georgetown.
Searce, J. B., Chillicothe.
Sprellwood, E. H., Chillicothe.
Sched, J. O., Hamilton.
Sharpe, J. W., McClure.
Steele, W. C., Berlin.
Tanner, E. J., Hamilton.
Turner, C. E., Columbus.
Thompson, W. B., Bethel.
Vesel, P. C., Cincinnati.
Webb, W. G., Canon.
Woodrow, O. M., Wellston.

OKLAHOMA TERRITORY.

Barrett, A. E., Hinton.
Owen, H. D., Keokuk Falls.
Wilson, H. H., Norman.
Renfrow, T. L., Billings.

PENNSYLVANIA.

Bastian, C. B., Williamsport.
Beaumont, W. R., West Auburn.
Ephraim, J. W., Allegheny.
Feidstein, S. L., Philadelphia.
Fretz, H. G., Philadelphia.
Githens, W. H. H., Philadelphia.
Griffin, Alfred, Philadelphia.
Hayes, L. Z., Force.
Harris, C. M., Johnstown.
Humphrey, W. S., Sharnsburg.
Hunter, J. A., West Middlesex.
Henry, C. O., Altoona.
Kennedy, G. W., Sharon.

Kling, S. S., Johnstown.
Morrow, T. M., Altoona.
Meredith, H. B., Danville.
Roderer, J. P., Philadelphia.
St. Clair, Thomas, Latrobe.
Steward, W. J., Lancaster.
Skiffen, P. G., Philadelphia.
Snyder, J. L., Greensburg.
Stewart, R. S., Washington.
Smith, H. R., Altoona.
Spencer, Elizabeth C., Norristown.
Thompson, H. A., Philadelphia.
Tinker, G. M., Sharon.
Van Naten, B. K., Franklin.
Wertheimer, H. G., Pitsburg.
Woodruff, J. S., Johnstown.
Wallace, A. A., Newcaste.
Walker, W. E., McKeesport.

CANAL ZONE, PANAMA.

Caldwell, B. W., Bas Obispo.

RHODE ISLAND.

Donley, J. E., Providence.
Davenport, J. H., Providence.
Power, J. E., Providence.
Roeh, W. S., Phenix.

SOUTH CAROLINA.

Burn, J. W., Charleston.
Harper, J. C., Greenwood.
Swygert, S. L., Greenwood.

SOUTH DAKOTA.

Beall, L. F., Irene.
Babcock, L. P., Deadwood.
Cook, J. E., Langford.
Kierland, F. N., Webster.
Milburn, J. A., Washington.

TENNESSEE.

Arnold, J. M., Lexington.
Bailey, William, Nashville.
Boyd, M. P., Farmville.
Brewer, J. D., Newbern.
Blanton, M. A., Ballieton.
Bazemore, G. M., Cleveland.
Blackwell, O. L., Whorley.
Connell, J. R., Adams.
Carter, S. M., Knoxville.
Compton, W. C., Vestport.
Campbell, H. T., Nashville.
Cox, J. B., Huntington.
Davis, J. E., Sweetwater.
Dickson, E. C., Chattanooga.
Edwards, T. D., Union City.
Finch, Carl, Dresden.
Fisher, J. B., Memphis.
Gist, D. R., Sparta.
Gardner, J. C., Knoxville.
Kelso, H. J., Knoxville.
Lones, C. E., Knoxville.
Lewis, P. K., Doyle Station.
Miller, S. M., Knoxville.
Matlock, P. N., Kenton.
Pangle, H. G., Russellville.
Pearson, M. M., Bristol.
Poter, W. W., Orme.
Richmond, W. D., Knoxville.
Roper, J. F., Union City.
Ray, R. L., Monterey.
Shannon, J. O., Franklin.
Slisk, J. A., Knoxville.
Smith, J. N., Cuba Landing.
Teachout, S. R., Huntington.
Woodson, L. M., Gallatin.
Barnes, G. R., Iversburg.
Walker, T. J., Dyersburg.
Weesner, B. C., Whitesburg.

TEXAS.

Alexander, P. T., Humble.
Beakley, S. S., Seagrin.
Bauggins, J. B., Delheimer.
Barnes, G. R., Trinity.
Coulter, H. F., Rockdale.
Corry, J. F., Rockwall.
Chandler, J. M., Weatherford.
Combs, H. B., Rockwall.
Dunn, R. McM., Palestine.
Friedman, A., San Antonio.
Gilmore, M. E., North Fort Worth.
Hayes, C. E., Rockwall.
Hill, B. W. D., Dawson.
Hedrick, J. A., Delhart.
Jackson, G. L., McMahon.
King, G. T., Rockwall.
Karbach, F. R., Maxwell.
Leal, M. T., Laredo.
Lancaster, J. R., Granbury.
McClure, M. E., Alto.
Metz, M. S., McKinney.
Meyers, W., Segula.
Nave, S. F., Shiner.
Pence, T. A., Rockwall.
Stark, H. D., El Paso.
York, W. E., Giddings.

VERMONT.

Carsley, S. R., Vergennes.
Lane, W. H., Brattleboro.
Pierce, E. B., Bennington.

VIRGINIA.

Bagby, B. B., Walkerton.
Browning, J. H., Charlottesville.
Cornett, B. F., Pennington Gap.
Combe, A. G., Vienna.
Emerson, G. O., Bachelors' Hall.
Fausley, G. R., Falls Church.
Hemel, H. H., Staunton.
Kent, S. T. A., Ingram.
Moore, W. C., Imboden.
Parker, T. A., Richmond.
Tranham, B. L., Jeff's Postoffice.
Watson, E. C., Roanoke.

WASHINGTON.

Patterson, W. M., Seattle.
Rosser, David, North Yakima.

WEST VIRGINIA.

Hoss, J. R., Huntington.
Bush, S. W., Parkersburg.

Craty, H. L., Huntington.
Seel, S. H., Elkhorn.
Marsh, W. A., Margaret.
Sammons, J. L., Catis.
Thornhill, E. O., Prosperity.

WISCONSIN.

Fazen, L. E., Racine.
Garlock, F. R., Racine.
Munkwitz, F. H., Milwaukee.
Rock, J. N., Milwaukee.
Taylor, E. A., Racine.
Wahl, Emil, Milwaukee.
Whyte, W. F., Watertown.
Von Neupert, C. Sr., Stevens' Point.

WYOMING.

Brown, D. E., Laramie.
Bo Dine, C. D., Douglas.
Wilton, H. A., Hanna.

Marriages

WILLIAM MAC ELLIOTT, M.D., to Miss Stella Tombs, both of Bryantsville, Ky.

EDWARD W. COLLINS, M.D., to Miss Lila Routt, both of Denver, February 7.

ROBERT CURTIS BROWN, M.D., to Miss Katherine Butler, both of Milwaukee, February 8.

ALFRED G. DOUST, M.D., to Miss Rose Belle Webb, both of Syracuse, N. Y., February 3.

JOHN B. MAGUIRE, M.D., to Miss Marion McCulloch, both of Lexington, Ky., February 21.

WILLIAM GAEDKE, M.D., to Mrs. Jessie Carrington, both of Bay City, Texas, January 27.

HOMER D. DUBLEY, M.D., Cananea, Mex., to Miss Daisy Sabin of Beatrice, Neb., January 25.

WILLIAM MCC. MILLER, M.D., to Miss Alice Hart, both of Millersburg, Ky., January 29.

FRANCIS ROWLAND PACKARD, M.D., to Miss Margaret Horstman, both of Philadelphia, February 10.

ELMER S. ALLEN, M.D., Arcola, Ill., to Miss Hannah Rowlands of Judson, Minn., at Chicago, January 23.

GUSTAVUS B. THORNTON, M.D., Memphis, Tenn., to Mrs. Mary Bailey Fowler of Griffin, Ga., January 25.

LOUIS PROVANCE MCCORMICK, M.D., Camelsville, Pa., to Miss Katherine E. Felsing of Northumberland, Pa., February 1.

Deaths

George Ryerson Fowler, M.D. Bellevue Hospital Medical College, New York City, 1871, of Brooklyn, one of the foremost surgeons of New York, died Feb. 6, aged 57, in Albany, N. Y., where he had been in attendance on the centennial meeting of the Medical Society of the State of New York. He died in Albany Hospital from paralytic ileus following an operation for gangrenous appendicitis performed by Dr. Albert Vander Veer, January 29. Dr. Fowler was born in New York, Dec. 25, 1848, the son of Thomas W. and Sarah Jane F. Fowler. He received his preliminary education in the public school of Jamaica, L. I. Soon after his graduation in medicine he devoted his attention to surgery and soon became known as a careful, conservative and skillful operator. He was surgeon to the Methodist Episcopal Hospital, surgeon chief to the Brooklyn Hospital, senior surgeon to the German Hospital, consulting surgeon to St. Mary's, Relief and Norwegian Hospitals. He was professor of surgery at the New York Polyclinic. He was examining surgeon of the State Medical Examiners Board. During the Spanish-American War Dr. Fowler served as chief surgeon of the Third Division, Seventh Army Corps, under General Fitzhugh Lee, and later was consulting surgeon and chief of the operating staff of the Second Army Corps and accompanied General Lee to Havana, where he organized the hospitals. He was discharged from the service Jan. 31, 1899. He was the author of a treatise on appendicitis which passed through two editions and of many other articles on surgical subjects. Dr. Fowler was taken ill on the train on his way to Albany, January 27, and was removed to the hospital January 29, where he was found to be suffering from appendicitis, and an operation was performed which disclosed a gangrenous appendix, which was removed. The paralysis of

the intestine which was found to be present at the time of the operation persisted, however, and caused his death eight days later.

Julian T. Feild, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1861; a member of the Texas State Medical Association, North Texas Medical Association and Grayson County Medical Society; president of the Denison Board of Health; a surgeon in the Confederate service throughout the Civil War; the first city physician of Denison, serving in that capacity for several years; a member of the City Council for five terms; some time president of the Denison Medical Society; a member of the Twenty-fifth Texas Legislature; for thirty years local surgeon for the Houston and Texas Central Railway; and at the time of his death local surgeon for the Frisco System, died at the home of his daughter in Denison, February 1, after an illness of two months, from Bright's disease, aged 64.

William G. Porter, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1868; a member of the American Medical Association; a member of the College of Physicians in 1872 and for many years its recorder; at one time an interne at Blockley Hospital; physician to the Philadelphia Dispensary, and surgeon at both the Philadelphia and the Presbyterian Hospital, died at his home in Philadelphia, January 30, from pneumonia, aged 59.

Edward Bennett, M.D. New York University, New York City, 1862; a surgeon in the United States Army from 1872 to 1875; one of the leading physicians of San Antonio, Texas, for many years, and city physician in 1875, died January 20 at Santa Rosa Infirmary in that city, from uremia, after a long illness, aged 70.

Claiborne A. Duvall, M.D. Jefferson Medical College, Philadelphia, 1857; a surgeon in the Confederate service during the Civil War, and several times coroner and health officer of Terrebonne Parish, La., died at his home in Houma, January 23, after an illness of several weeks, aged 73.

Lora D. Dennett, M.D. College of Physicians and Surgeons, Baltimore, 1881, a member of the Biddeford and Saco and York County Medical Associations, died at his home in Saco, Maine, January 30, after an operation for appendicitis and hernia, aged 55.

William Nickolous Klemmer, M.D. Jefferson Medical College, Philadelphia, 1893, a member of the Potter County Medical Society, died at his home in Germania, Pa., January 23, from chronic nephritis, after a long illness, aged 46.

Joseph Luke, M.D. College of Physicians and Surgeons of Chicago, 1885, formerly superintendent of schools, died at his home in Chilton, Wis., January 31, a week after a fall on the ice, in which he fractured his hip, aged 56.

William M. Cameron, M.D. College of Physicians and Surgeons in the City of New York, 1889, died at his home in New London, Conn., January 29, from valvular heart disease, after an illness of several weeks, aged 39.

Thomas F. Gibbs, M.D. University of Georgetown Medical Department, Washington, D. C., 1870, died at his home in Washington, D. C., January 30, from paralysis, after an illness of more than three years, aged 68.

Peter M. McGough, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1878, died at his home in Pittsburgh, January 24, from pneumonia, after a short illness, aged 50.

J. W. Fuqua, M.D. Medical College of Virginia, Richmond, 1864, a surgeon in the Confederate service during the Civil War, died at his home in Vinton, Va., January 27, after a brief illness, aged 71.

William Heverin Hobson, M.D. Jefferson Medical College, Philadelphia, 1895, of Philadelphia, died in the Samaritan Hospital in that city, from typhoid fever, January 30, aged 36.

William Williams Robertson, M.D. University of Maryland School of Medicine, Baltimore, 1864, died suddenly at his home in Baltimore, January 31, from cerebral hemorrhage, aged 60.

David Barry, M.D. Medical College of Virginia, Richmond, 1862, a surgeon in the Confederate service during the Civil War, died at his home in Ashley, Ill., January 31, aged 70.

James H. Bowen, M.D. Jefferson Medical College, Philadelphia, 1857, formerly a practitioner of Devall, La., died in Montgomery, Ala., January 23, aged 77.

Washington L. Jones, M.D. Louisville (Ky.) Medical College, 1875, died at his home in Ensley, Ala., January 26, from cerebral hemorrhage.

George W. Jordan, M.D. New York University, New York City, 1859, died at his home near Rodman, S. C., January 20,

Book Notices

COUNSELS AND IDEALS. From the Writings of William Osler. Selected by C. N. B. Camac, M.D. Cloth. Pp. 277. New York: Houghton, Mifflin & Co. 1905.

Camac has made an excellent series of extracts from Osler's writings and the choice bits are very happily arranged. Some of the group headings are: "Pioneers in Medicine," "Honesty, Truth, Accuracy and Thoroughness in Medicine," "Patient Devotion to Duty and High Ideals," "Medical Education," "Value of Travel," and "Man's Years of Usefulness and How He May Prolong Them." A subject index adds to the value of the book for reference.

THE PRINCIPLES OF RELIEF. By Edward T. Devine, Ph.D., LL.D., Author of "The Practice of Charity." Cloth. Pp. 495. New York: The MacMillan Co., 1904.

Devine first discusses the fundamental principles which should guide one who grapples with the vital social and economic problem of helping the dependent; then he illustrates both the problem and the methods of relief by case histories and by narration of the organized relief measures taken after some of the great disasters, such as the Galveston flood and the Slocum fire. Charity workers will find this book valuable, as Devine's experience fits him to speak with authority.

DISEASES OF THE HEART AND AORTA. By T. E. Satterthwaite, M.D., Professor of Medicine in the New York Postgraduate Medical School. Cloth. Pp. 304. Price, \$3.00 net. New York: E. R. Pelton.

This book covers the diseases of the heart and aorta. No space is devoted to such subjects as anatomy and physiology of the organ which often preface similar monographs. The text is illustrated by brief histories of numerous cases. It will enable a physician to review heart diseases and to get much important information which can not be found in text-books. Dr. Satterthwaite describes fully his own experience, which gives to the volume the personal flavor desirable in a monograph.

POST-OPERATIVE TREATMENT. An Epitome of the General Management of Postoperative Care and Treatment of Surgical Cases as Practiced by Prominent American and European Surgeons. By N. C. Morse, A.B., M.D., 155 Illustrations and 5 Plates. Cloth. Pp. 468. Price, \$4.00. Philadelphia: P. Blakiston's Son & Co., 1905.

This book will be appreciated by the general practitioner. Too often the surgeon who performs an operation sees the patient only once or twice, and the preparation and after-treatment—which are often vital to the success of the operation—are left to the physician in charge, whether he be prepared or not for all the needs of the case. Morse has made up his book from the methods of the best men in surgery. The matter is clearly presented and the illustrations are good.

HELPS AND HINTS IN NURSING. By J. O. Griffith, M.D., Ph.D. Family Edition. Cloth. Pp. 480. Price, \$1.50 net. Philadelphia: John C. Winston Co.

This book is intended, the author states, for use in homes, as a guide in time of sickness, but as it includes, among other things, directions for administering general anesthetics—ether and chloroform—and for the production of local anesthesia by ethyl chlorid and by hypodermic injection of cocaine, it certainly is not a book which ought to be put in untrained hands. "A little knowledge is a dangerous thing." The chapters on the nurse's relation to the patient, bed making and bed changing, bathing, preparation of food, method of making local applications and of administering medicines are practical and to be commended.

A GUIDE TO ANESTHETICS for the Student and General Practitioner. By T. D. Luke, M.B., F.R.C.S. Second Edition. 45 Illustrations. Cloth. Pp. 135. Philadelphia: J. B. Lippincott & Co. 1905.

The author states in the preface that the increasing popularity of ethyl chlorid as a general anesthetic is the reason for the new edition of this work. Chapter II is devoted to a discussion of the choice of an anesthetic. The book contains many illustrations showing the various apparatus for administering the different anesthetics. The author writes favorably of the chloroform-ether mixture, which, however, has enjoyed greater popularity in Great Britain than in America. He discusses at some length the difficulties likely to arise during administration of an anesthetic and their management. One

chapter is devoted to a consideration of local anesthesia. Luke believes, evidently, that ethyl chlorid is the coming anesthetic, in England at least.

A MANUAL AND ATLAS OF ORTHOPEDIC SURGERY, Including the History, Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis and Treatment of Deformities. By J. K. Young, M.D. Illustrated with over Seven Hundred Photographs and Line Drawings, mostly from original sources. Half morocco. Pp. 942. Price, \$12.00. Philadelphia: I. H. Blackiston's Son & Co., 1905.

This ponderous volume, weighing eight and one-half pounds and measuring almost three inches thick, has the appearance of being, and is, padded. The type is commendably large and clear, but some of the space between the lines could be spared, this and the omission of many blank pages would make the book less massive. The publisher's work is less important, however, than that of the author. He says that his work covers the whole field of orthopedics and, so far as we can discover, it does so. Young has taken especial pains with the illustrations. There are over 700 of them, and the examples of characteristic attitudes, deformities, apparatus, methods of treatment, etc., make an atlas of value for the general practitioner.

A MANUAL OF CLINICAL CHEMISTRY, MICROSCOPY AND BACTERIOLOGY. M. Klopstock and A. Kowarsky of Berlin. Translated by T. Wright, M.D. Cloth. Pp. 296. With 132 illustrations, 70 in colors. Price, \$2.25. New York: Rehnman Co., 1905.

This is a brief, clearly written and up-to-date manual, giving the most convenient and reliable methods of examining the excretions, secretions and blood for pathogenic micro-organisms and for abnormal cellular and chemical constituents. The technique of staining important bacteria which may occur in conjunctiva, upper respiratory passages, urine, feces and skin, and reliable methods of cultivating such organisms, are given in sufficient detail for those who are familiar with bacteriologic principles. One chapter is devoted to methods of bacteriologic examination and the formulae of stains and culture media, and another to qualitative and quantitative chemical examinations of the stomach contents. That recent advances have not been neglected is illustrated by paragraphs on the Morax-Axenfeld bacillus, the paratyphoid bacilli, and methods of cultivating bacteria from the blood.

SURGICAL DIAGNOSIS. A Manual for Practitioners of Medicine and Surgery. By O. G. P. Killian, M.D. Illustrated by 59 full page plates and by engravings in the text. Cloth. Pp. 449. Price \$4.50. New York: William Wood & Co.

Had the title of this book read a manual for "students" instead of for "practitioners," it would have more clearly defined its field of usefulness, as it is not comprehensive enough for the internist nor for the general surgeon. Its condensed character, its marginal reference and the extensive use of full-faced type in the text to emphasize the essential points make it particularly valuable in student work. The matter is well arranged, and the illustrations, including a number of x-ray plates, are as a rule good. At the end are found a number of tables as a sort of appendix. The heading of one of these, "Identical Symptoms Found in Various Diseases," is decidedly a misnomer as the anesthesia, for instance, of lepra nodosa is not "identical" with the anesthesia of hysteria, nor with that of myelitis, etc., as so classified. There is also a "List of Diseases, Symptoms, Syndromes and Laws Designated by Proper Names" which, although not complete, forms a fitting end to the work.

GALLSTONES AND THEIR SURGICAL TREATMENT. By R. G. A. McNibb, M.S., F.R.C.S. Second Edition. Revised and Enlarged. Cloth. Pp. 158. Price, \$5.00 net. Philadelphia: W. B. Saunders & Co., 1905.

There are few regions of the body so prolific of disturbances as is the upper abdomen, and not until this region was illuminated by the light of the operating surgeon and the living pathology studied, was the obscurity which surrounded many of them dispelled. In affections of the gall tracts particularly much progress has been made and this progress has been well set forth in this work. How well it has been received by the profession is shown by the fact that the first edition came out the latter part of 1904, and by the end of 1905 a second edition appeared, entirely revised and enlarged by some seventy pages. The entire subject has been very thoroughly covered: anatomy, anomalies, etiology, pathology, symptoms, complications, etc., and last but by no means the least important, a

full description of the technique of the various appropriate surgical operations for this class of cases. The various conditions are exemplified by detailing concrete cases and illustrated by numerous colored and black and white drawings. The author is a practical surgeon of large experience who understands thoroughly the subject of which he is writing and who expresses himself clearly and concisely. The work is a valuable one to the clinician as well as to the surgeon.

THE HARTON FIRST-AID TEXT-BOOK. A Manual for the Student in First-Aid. E. G. H. Hartung, M. D., First Lieutenant and Assistant Surgeon, Ambulance Corps. M. V. M. Arranged and Illustrated by Roscoe G. Wells, superintendent New England First-Aid Association. Cloth. Pp. 82. Boston: New England First Aid Association.

In view of the number of first-aid manuals worthy of the name now before the public we can find no good reason for the publication of this little book. In it, clearness and accuracy of statement, so essential to the beginner, have been sacrificed by carelessness in style and an unsuccessful attempt at brevity. As notable examples we cite the following:

Page 15: The Lower Extremity consists of the largest and longest bone in the body, called the femur, or thigh bone.

Page 35: Treatment In case of drowning, remove from the water.

Page 56: Cauterization is accomplished by thoroughly burning out the wound. . . . In the case of dog bite never cauterize the wound or kill the dog unless absolutely certain that the dog was mad.

Page 59: Burns produced by alkalis . . . should be treated by the application of acid solutions, such as dilute vinegar in lemon juice.

Page 62: Any substance which is taken into the body that will produce death is a poison.

Page 64: If the sufferer is physically or mentally depressed, such as cold hands and feet, blue lips, the face pale, and a cold perspiration upon the forehead and about the mouth, then a stimulant should be given.

Page 75: . . . the strength of an epileptic in a convulsion is quite powerful.

TEXT-BOOK ON THE PRACTICE OF MEDICINE. For Students and Practitioners. By J. M. French, A.M., M.D., Second Revised Edition. 61 illustrations. Cloth. Pp. 780. Price, \$4.00 net. New York: William Wood & Co.

This book is unlike most text-books in that the author has devoted the first part of the book to a short consideration of the classification and causes of disease, taking up the pathology and bacteriology and describing briefly the subjects of nutrition and metabolism. In the preface it is stated that changes and additions have been made to the text in order to bring the work up to date, yet in the chapters on syphilis no mention is made of the recently discovered *Spirochete pallida*, while in that devoted to yellow fever the *Bacillus icteroides* of Sanarelli is given as the generally accepted cause of the disease. More space than usual is given to tropical diseases. Some of the illustrations are excellent, particularly the charts showing the distribution of guinea-worm and *Filaria hominis*, while others, particularly the plate illustrating the parasites of malaria, leave much to be desired. Like most text-books on practice of medicine, not enough space is given to treatment. The last part of the work is devoted to a description of the methods of clinical diagnosis, and more particularly to those of laboratory diagnosis, and, while the latter does not exactly "belong" in a book of this sort, it is a valuable adjunct to the work.

DISEASES OF THE STOMACH AND INTESTINES. By Boardman Reed. Illustrated. Cloth. Pp. 1021. Price, \$5.00. New York: E. B. Treat & Co., 1904.

This book is founded on lectures to general practitioners. Much stress is laid on the simple methods of investigating diseases of the stomach and intestines, but the best laboratory methods are not neglected. It seems to have been the author's aim to describe the methods which he regarded as best, rather than a multiplicity of ways of doing the same thing. Speculative discussions and unsettled theories are not considered. This treatise must be regarded as a practical rather than as an exhaustive one. The first three lectures are devoted to the anatomy and physiology of the organs, and the following twelve to methods of examination. Stress is laid especially on what can be learned by observation, palpation and percussion. The chemical and microscopic examination of the contents of the stomach is described. Urine examination and what can be learned from it of value to the student of stomach and intestinal diseases is considered in two chapters. The fifteenth chapter contains "a symptomatic guide to diagnosis."

by which is meant an enumeration, under such heads as anorexia, breath fetor, foul tongue, constipation, etc., of all of the conditions or diseases in which these symptoms occur. Part III, which includes lectures sixteen to thirty-four, describes methods of treatment, embracing dietetics, exercises, electricity, medicinal therapy, mineral waters, etc. In Part IV individual diseases of the stomach and intestines are described. These descriptions are in the main accurate and full. In a series of lectures it is rare to find a balance of parts as well maintained as in a treatise, and this work may be criticised in this respect. Moreover, the lecture style leads to somewhat greater diffuseness of statement than is best in a treatise. Occasionally the author has allowed extraneous matter to creep in, as in Chapter XI, where a page is devoted to better fees for urinalysis and such work. Also, in the chapters on carcinoma of the stomach, gastrocolic fistula, its causes and symptoms are considered before the symptomatology of carcinoma is described. It is not logical to describe a complication such as this before the disease with which it is associated has been discussed.

Miscellany

INTERSTATE RECIPROCITY.

George W. Webster, M.D.

President Illinois State Board of Health; Secretary Council on Medical Education of the American Medical Association.

CHICAGO.

In considering the question of interstate reciprocity in medical licensure we are confronted by several fundamental facts, a want of knowledge of which is at the foundation of most of the present nebulous, hazy, chaotic ideas in regard to this subject. These are the facts:

First—Everything relating to the whole subject of medical education, including preliminary entrance requirements, the license and control of the practice of medicine, belongs to the state; its regulation and control is an exercise of the general "police power" of the state; it is one of the state's rights with which the federal government has nothing whatever to do.

Second—The State Board of Health, or the examining or licensing board in each state, is, in view of the authority vested in it by the legislature, the only body authorized to determine the condition or terms under which physicians are licensed to practice in that state. This body determines the character of the entrance requirements, the length and character of the medical course, the subjects embraced in the medical curriculum, the time to be devoted to each, the character and scope of the examination, the equipment of the medical college in order to be in "good standing" with the board. The state alone, each for itself, through its examining board, has the sole right to establish and to maintain medical educational standards.

Third—These laws and rules are not made and executed and standards maintained in the interests of the medical profession, out for the protection of the people, it being an inherent, constitutional right with which they are guaranteed—the right to "life, liberty and the pursuit of happiness." This fundamental fact is almost universally overlooked, both by the medical profession and, more especially, by those seeking special legislation in favor of special sects, such as osteopaths and the like.

Fourth—In accordance with its recognized constitutional right, each state has established its own standards, there being no uniformity between them, or at least there was formerly none, but at the present time there is comparative uniformity among some of them.

Fifth—Each of the 157 medical colleges in the United States has adopted a standard of its own for conferring the degree of M.D., but this does not confer the right to practice, as this would be delegating the authority of the state to the medical college.

Sixth—That various associations of medical colleges, state boards, etc., have established standards, but they also have no right to determine and to enforce standards for any state, as this would be delegating the power of the state to some organization, and this would not be tolerated.

Under these circumstances, what can be done to bring about exchange of licenses on a fair and equitable basis. A fair exchange can be made only on equal terms. Let us see what has been accomplished. Take Illinois for example. Illinois has determined that an applicant for licensure must have, as a preliminary entrance requirement, a high-school education or its equivalent, must have attended four courses of instruction of not less than seven months each in four separate calendar years in a medical college, the character and equipment of which is determined by the board, must have received a diploma after graduation from said institution and must have also sustained a satisfactory examination in all the branches usually embraced in the medical curriculum, the number of questions in each subject corresponding to its time value in the curriculum. Illinois offers to reciprocate with any state having equal requirements. On this basis Illinois at the present time does reciprocate with the following states: Iowa, Michigan, Wisconsin, Indiana, New Jersey, Maryland, Maine and Kansas.

In other words, here is practical reciprocity on the only rational basis: equal requirements, uniformity in entrance requirements, uniformity in length and character of the medical course and uniformity in the scope and character of the examinations. Uniformity in legislation is also desirable.

How can this scheme of reciprocity be extended so as to embrace all or nearly all the states? I would propose the following:

It should be done through the organized profession, as embodied in the American Medical Association and by its Council on Medical Education. This council should appoint the following committees:

First—A subcommittee on entrance requirements, comprised of, say, ten members, representing the medical colleges, the universities, the high schools and the boards of examiners. Let this committee be given at least a year, or, if necessary, a longer time, to study the whole subject and then to report to the Council on Medical Education what the minimum entrance requirements should be.

Second—A subcommittee of five or ten members for each of the twenty-three subjects in the curriculum, the committee to be selected from the leading educators in each subject and including, if possible, members of examining boards on each subcommittee. Let each of these committees establish a minimum standard and determine how many hours should be devoted to the subject, how much of this time to lectures, to recitations, to laboratory work and to clinics, and what kind of equipment, teachers, etc., are required to teach the subject properly, and the order in which the subject should be taught in relation to other subjects.

Third—An additional committee to determine whether other subjects, such as business methods, history of medicine, etc., shall be added to the present curriculum, and, if so, how much time should be devoted to them and where in the course they should be placed.

The committees, aggregating, in round numbers, 250 of the leading medical educators of the United States, would report to the educational council and it in turn would codify the work, and thus would be established standards of such high order of merit that no one would be able to criticize it successfully. The council would also provide for a plan of regular periodical, perhaps decennial, revision of this standard. Each state and medical society adopting this standard would be entitled to representation in the revision convention.

Then let the council urge the legislative committee of the American Medical Association to work in the interests of uniformity in medical legislation for the states through the legislative committees and examining boards of all the states.

To establish reciprocity it is only necessary for the states to adopt the standards of the Council on Education. As soon as a medical college adopts this standard let it be enrolled as an institution in "good standing," both with the council and with all examining boards that have adopted this standard. As soon as two states have adopted this standard there is reciprocity on a fair, rational, equitable basis. In a very short time a large number of states and the leading medical colleges will have adopted this standard and the others will be gradually brought up to it.

ADVANTAGES OF THE PLAN.

The advantages of this plan are:

1. It secures the co-operation of the American Medical Association and of the medical colleges.
2. It secures the co-operation of the high schools, the medical colleges, the universities and the state licensing boards in the establishment of standard requirements for entrance to the medical colleges.
3. The proposed standards will be more likely to be adopted because all parties concerned in their adoption are participants in their preparation and establishment.
4. It will bring the American Medical Association and the licensing boards into closer and more harmonious relationship.
5. It will bring the American Medical Association and the medical colleges in closer and more harmonious relationship.
6. It not only provides for high, reasonable and uniform standards for the present; but it provides for regular periodical revision by those adopting it and, therefore, interested in its maintenance and perpetuation.
7. It will bring into co-operative harmony the legislative committee of the American Medical Association and the legislative committees of the states.
8. After definite, uniform standards are adopted, it will be easier to secure the enactment of uniform, favorable, desirable legislation.
9. It establishes interstate reciprocity on a reasonable basis.

Tubercle Bacilli.—Piery and Mandoul (*Arch. Gén. de Méd.*, 1905, No. 19), have studied the different types of the tubercle bacillus in the various forms of the disease and summarize their general conclusions as follows: 1. Koch's bacillus takes various forms in the sputa of consumptives; the homogeneous, moniliform, para-moniliform and diplobacillus types are especially noticed. 2. These various forms are derived one from the other and are due to differences of coloration of the peripheral layer of the bacillus which sometimes is tinted like the central framework (homogeneous type), and sometimes, on the other hand, appears more feebly colored (paramoniliform type), and still others remain uncolored (moniliform type). 3. The morphologic and numerical variations in the sputa are in relation both to the evolution of the tuberculous process and to the clinical form of the disease. 4. Their study permits of following clinically the different stages of the tuberculous process and contribute to the diagnosis of the clinical form. 5. On the other hand, the morphology and number of bacilli in the sputa have no prognostic value. 6. The bacteriologic formula (morphology and number of bacilli) of the different forms of pulmonary tuberculosis undergoes modifications in hemoptysis bearing chiefly on the number of bacilli which is generally diminished by the dilution of the blood.

Retention of Salt as a Factor in Obesity.—More and more attention is being given to the reputed possibility of influencing dropsy by the regulation of the intake of salt as the favorable experiences of the French in this line are being confirmed by others. Labbé (*Presse Médicale*, No. 101, page 809) has recently been endeavoring to apply this same theory to obesity, explaining excessive corpulence as due in part to retention of salt with corresponding retention of water. He put two obese patients on the same diet, not salted, but each was given 15 gm. of salt a day, with which to season his food to taste. The amount left in the salt cellar showed how much had been used; the amount eliminated was also determined every day. He found that one patient retained over 40 gm. and the other over 100 gm. of salt in the course of a month. There was no trace of kidney trouble in either. On the basis of this rather limited and questionable experience he theorizes that chlorid retention must be an important factor in the production of obesity, also that the therapeutic restriction of fluids in obesity is irrational, ineffectual and even dangerous, as the tissues become dehydrated and consequently more saturated with salt. This explains, he says, the disturbances sometimes noted when the obese are kept on a dry diet. He declares that they should be encouraged to drink freely, but that the intake of salt should be restricted, and he proceeds to build up somewhat unwarranted conclusions as to the mechanism of his assumed "salting" of the obese. His communication does credit to his powers of imagination working on such scanty material, even if time should prove the correctness of his views in regard to the retention of salt in obesity.

The Irrational Stand of the Antivivisectionist.—The enormous sacrifice of animal life to provide the meat for the extra feasting at Christmas is the subject of comment by the *Medical Press* (London). "Man's merriment in this instance," it says, "is inseparably connected by long tradition with an enormously devastating sacrifice of life among the lower animals. . . . How many antivivisectionists, whose mental attitude commands our sympathy although not our respect, have ever paused to consider the inwardness of the Christmastide slaughter? Have they ever looked analytically on this picture of the butchers' and the poulterers' shops on the one hand and on that picture of the scientific laboratories on the other? Here we see a vast sacrifice of life, representing a vast amount of cruelty, with the sole purpose of providing folk with extra food for their Christmas enjoyment. There we see carefully planned research carried out under the most humane conditions known to science, with one single end and aim, namely, the preservation of human life from suffering and from death. The great fundamental distinction between the two sacrifices of the life of the lower animals in the two instances under consideration is that one is intended merely to satisfy the greedy maw of jovial man, while the other is intended to save him from bodily ills of all kinds. How can a sane, intelligence condone the butcher and condemn the vivisectionist? If anyone said of the butcher what is said every day in the week about the vivisectionist, the antivivisectionist would retort that the objections were sentiment gone mad. Yet all the while he swallows the camel of animal food, but strains with restless and incessant bitterness against the gnat of vivisection. The life of the lower animals is subservient to him for food, for labor, for clothing, for ornament, for anything and everything in his narrow world, in short, save for the one high purpose of acquiring the knowledge of preserving the health and the lives of his fellow-men. As men grow more intellectual and reasoned in their outlook, so will they be likely to regard the question of vivisection in its true perspective."

The Successful Practitioner Reads.—There is something radically wrong with the man who has "no time to read." If he hasn't the time he should take the time, just as he should to eat and sleep. How else can he know what is going on in the medical world and what advances are being made? Does it ever occur to him that the reason he lost that ease yesterday was because he is already behind the times—even though he is out of college less than five years? The fact that very likely would have saved the life was in the magazine. . . . which he never took the trouble to open. No matter how successful he may be, sooner or later he will be replaced in the affections and confidence of the community by young Jones, who has hard scrabbling enough now, . . . but who is forging to the front, because he has "time to read." It's a strange thing, but you never hear of any men of the first eminence in the profession who have no time to read. Yet they must be busy or all signs fail, for how else did they attain their eminence except by knowing things that others did not know and doing things that others could not do. Read? Why, these men are continually reading. In their "spare moments" they not only keep up with the profession, but keep ahead of it. . . . "No time to read?" My dear friend, it isn't so. The trouble is that you are too lazy; . . . you had rather take a nap or have a "quiet smoke" after the labors of the day or spend your time in some other idle way than to get right down to this building business—this making of better doctors. Gradually, how gradually you can hardly say, you got "out of the notion," and now you delude yourself with the belief that you are "too busy!" My poor friend, you are going to have time enough "for reading" or anything else after a bit. Really, wouldn't it be better to take a little time right now, and keep "in the swim?" "Work?" Of course, it is, but it pays.—*Am. Jour. Clin. Med.*

ANTIQUACKERY CAMPAIGN.

The German Antiquackery Society, whose official title is the *Deutsche Gesellschaft zur Bekämpfung des Kurfuschertums*, appeals for support to "all who regard enlightenment of the public in regard to the true nature of quack practices as an imperative task for the civilization of modern social life, and who wish to protect themselves and their fellow-men against injury in time of sickness." It urges all such to promote the aims of this antiquackery movement in the name of hygiene and public welfare. Subscriptions for this German society

should be sent to Dr. G. Siefert, Charlottenburg, Hardenbergstrasse 39, Germany. The annual membership fee is 3 marks, or about 75 cents, a year.

ANTIQUACKERY JOURNAL.

The society has its own organ, a twenty-page monthly, called *Hygienische Blätter*, edited by Dr. Carl Reissig, Hamburg 5, Germany, subscription about 50 cents a year, including foreign postage. It is written in popular style and writes up quacks and irregulars of all kinds, as well as nostrums, in much the same way as we are doing in the department of Pharmacology. The *Hygienische Blätter* is designed to be circulated among the general public, to be left on the tables in physicians' waiting rooms and elsewhere, while at the same time it contains articles suggesting ways and means in which physicians can aid in combating quackery. It is sent free to all members of the society. The October number suggests that physicians should take the pains to learn the past record of quacks and show them up. One of the more prominent German "nature healers" recently referred to the ranks of charlatans in Germany as "containing former jailbirds, frauds of all kinds, rakes and prostitutes," and the police records, when looked up, frequently prove the truth of this assertion.

NOSTRUMS.

One department of the *Hygienische Blätter* is devoted to secret remedies and nostrums, relating instances of injury from them and the results of analysis by experts.

QUACKERY BEFORE THE COURTS.

Criminal proceedings against "nature healers" and quacks of all kinds are recorded, with details, in another department, with an occasional table summarizing the various sentences passed by the courts for fraudulent or dangerous quack practices or for injury from such. The latest list includes 82 cases, in which fine or imprisonment was imposed. Previous criminal proceedings are recorded against many of the names.

ANTIQUACKERY EXPOSITION.

The antiquackery movement in Germany obtained great impulse from the exposition of quack methods which was held at Breslau in 1904 and again at Meran in 1905, in connection with the "Naturforscher Congress." The exhibition is in eight sections: fake ads., nostrums, wholesale quack measures, original remedies, "non-toxic" nostrums, non-operative treatment, electro-homopathy, magnetism, hypnosis, and the "nature healers." The collection has recently been accepted by the government and added to the collection of "means of instruction to promote the public health," for which a central station has been established to loan the collections as deemed advisable. The collection includes a number of the original formulas of various familiar nostrums, and, arranged beside the fake medical literature, are the articles and decrees from the police and other authorities showing them up, or showing the unsavory details of the careers of the originators. Both exhibitions attracted crowds of medical and lay visitors, and they are proving one of the most effectual means to enlighten the public in regard to the dangers of nostrums and quacks in general. The *Hygienische Blätter* was first circulated in connection with the first of these exhibitions. The beginning of an international antiquackery movement was recently described on page 132.

Queries and Minor Notes

CAUSE OF INCREASED URINATION AT NIGHT.

TO THE EDITOR:—What conditions might cause the amount of urine excreted during the night to exceed that excreted during the day? The patient is an unmarried woman, aged 55. She is poorly nourished, sallow, and her occupation is an indoor one. She has chronic constipation, which yields to mild laxatives and diet. The arteries are sclerotic, the heart is slightly enlarged, but compensation is good. Neither casts nor albumin can be found in the urine. The family history is distinctly "cardio-nephritic." Since this patient drinks fluid only between 6 a. m. and 6 p. m., and 24-hour tests show nocturnal urine to exceed diurnal, I have been forced to the conclusion that she is probably in the incipient stage of Bright's disease, despite absence of albumin and casts. The patient is greatly bothered by frequent nocturnal urination. Mechanical factors might account for increased frequency, but hardly. It seems to me, for increased quantity of urination at night. There is nothing in the pelvis to cause trouble except slight retroversion.

To emphasize: This patient drinks nothing after 6 p. m. She excretes more urine at night than in day time. Can you justify, on these premises, a diagnosis of deficient renal permeability? C.

ANSWER:—The age of the patient, her poorly nourished condition, the sclerotic state of her arteries, and the enlarged heart with, presumably, increased arterial tension, and in addition, her family history which you characterize as "cardio-nephritic," indicate that this is a case of incipient chronic indurative nephritis or contracted kidney.

The increased urination is not at all rare in this condition, and frequently constitutes, as you correctly surmise, an early sign of Bright's disease. The absence of casts from the urine does not militate against this diagnosis. It is possible, however, that if you will examine many specimens with very delicate tests, you will sooner or later find a little albumin. Senator expresses himself as follows in regard to this matter: "This form of nephritis is frequently overlooked or neglected in the beginning. It develops very gradually, with signs of cardiac hypertrophy and increased arterial tension and usually with some polyuria, and occurring especially at night (pollakiuria)." In regard to the form of nephritis that you are dealing with, which is presumably of the arteriosclerotic variety, the urinary signs are especially liable to remain absent for a long time after increased urination, with cardiovascular signs, make their appearance.

So far as the treatment is concerned, careful attention to the gastrointestinal tract and measures directed toward keeping the blood pressure down will be efficacious in preventing a rapid development of this disease.

ACETANILID IN BROMO-SELTZER.

NORTH PLATTE, NEB.

TO THE EDITOR:—Recently I was called to see a man who had taken a heaping tablespoonful of bromo-seltzer. The heart was missing about every third beat, he was cyanosed, and the extremities were cold. The pulse was thready, irregular and intermittent. When I first entered the room I was struck by the dirty appearance of the patient's hands, but on examining them more closely I found they were not dirty but cyanotic. The lips had the same dirty bluish appearance and the ashy gray color of the face reminded me of a cadaver. The temperature was 96 F. The man was bordering on collapse, and I think would have died had not his stomach been emptied and stimulants administered.

D. T. QUIGLEY, M.D.

WASHINGTON, D.C., Dec. 7, 1905.

TO THE EDITOR:—Can you give the formula of bromo-seltzer? I find that it is very extensively and freely used, and I think that it would be interesting to know what it is that so many people are taking so frequently, and in such large quantities.

B. M. RANDOLPH.

ANSWER:—We have had analyses made of Bromo-Seltzer as sold in original bottles to the trade. These analyses show that 100 parts of the effervescent salts contain:

| | |
|------------------------|--------------|
| Potassium bromid | 10.53 parts. |
| Acetanilid | 4.58 parts. |
| Caffein | 1.20 parts. |

Assuming an average dose of the article—a teaspoonful—to weigh 76 grains (5.0 gm.) each dose would contain:

| | |
|------------------------|---------------------|
| Potassium bromid | 7 grains (0.5 gm.) |
| Acetanilid | 3 grains (0.2 gm.) |
| Caffein | .8 grain (0.05 gm.) |

Since a half ounce of this preparation is often taken at a dose, and since many, women especially, are taking it daily, it is anything but "harmless."

STATES THAT RECIPROCATE.

IOWA, Jan. 31, 1906.

TO THE EDITOR:—What states have reciprocity agreements with Wisconsin, Illinois and Iowa?

A. B. C.

ANSWER:—There is reciprocity between Wisconsin, Indiana, Michigan, Ohio, Iowa, Kansas, Illinois, Nebraska, Kentucky, Maryland, Georgia, Oklahoma, South Carolina, New Mexico, North Dakota and District of Columbia, on the basis of qualifications as adopted by the American Confederation of Reciprocal Medical Examining and Licensing Boards. Requirements by the various states are so different that the question can not be answered by a general statement. Any physicians desiring to register in another state should correspond directly with the secretary of the licensing board of that state.

MIDWIFERY IN PENNSYLVANIA.

DENT'S RUN, PA., Feb. 1, 1906.

TO THE EDITOR:—Can a person without a license or certificate legally practice midwifery in Pennsylvania? B. F. MERRILL, M.D.

ANSWER:—There is no definite statement regarding this in Pennsylvania law. Most states require an examination. Further information may be obtained by writing to Dr. H. S. McConnell, New Brighton, secretary of the State Board of Medical Examiners.

State Boards of Registration

COMING EXAMINATIONS.

MAINE State Board of Registration of Medicine, City Building, Portland, March 13. Secretary, Wm. J. Maybury, Saco.

CONNECTICUT Medical Examining Board, City Hall, New Haven, March 13-14. Secretary, Charles A. Tuttle, New Haven.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, March 13-14. Secretary, Edwin B. Harvey, Boston.

Arkansas January Report.—Dr. J. P. Runyan, secretary of the State Medical Examining Board of the Arkansas Medical Society, reports the written examination held at Little Rock, Jan. 9, 1906. The number of subjects examined in was 7; total number of questions asked, 61; percentage required to pass, 75. The total number of applicants examined was 44, of whom 28 passed and 16 failed.

| College. | PASSED. | Year Grad. | Per Cent. |
|---|---------------------------|------------|-----------|
| University of Arkansas | (1898) 75; | (1900) | |
| Rush Medical College | (1884) 77; | (1886) | 75, 76 |
| College of P. & S., St. Joseph. | (1905) | (1882) | 77 |
| University of Texas | (1905) | (1905) | 81 |
| Flint Medical College | (1905) | (1905) | 92 |
| College of P. & S., St. Louis. | (1905) | (1905) | 78 |
| Kiel German Med. Coll. for Missionaries. | (1878) | (1878) | 77 |
| Kentucky School of Medicine | (1892) | (1892) | 85 |
| Hospital College of Med., Louisville | (1905) | (1905) | 77 |
| College of P. & S., Chicago | (1905) | (1905) | 88 |
| Barnes Medical College | (1895) | (1895) | 82 |
| University of Georgia | (1900) | (1900) | 75 |
| Met. Med. Coll. (The notorious diploma mill). | (1903) | (1903) | 78 |
| Vienna, Austria* | (1905) | (1905) | 78 |
| American Med. College | (1905) | (1905) | 81 |
| Tulane University | (1888) | (1888) | 75 |
| Vanderbilt University | (1895) | (1895) | 75 |
| Marion Sims Med. Coll. | (1884) | (1884) | 75 |
| New York Polyclinic Med. Coll. | (1904) | (1904) | 75 |
| Non-graduates | 75, 78, 78, 79, 81, 81, 7 | | |

| College. | PASSED. | Year Grad. | Per Cent. |
|--|---------|------------|-----------|
| Memphis Med. Coll.* | (1880) | (1880) | 64 |
| College of Indiana | (1905) | (1905) | 65, 8 |
| Tufts and American Med. Coll. | (1905) | (1905) | 70 |
| Non-graduates, 34, 39, 54.8, 55.4, 63.4, 66, 67, 68.7, 68.5, 68.7, 69, 70.8, 72.7. | | | |

* Year of graduation not given.

Iowa December Report.—Dr. J. F. Kennedy, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Dec. 27-28, 1905. The number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 8, of whom 5 passed and 3 failed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|-----------------------------------|---------|------------|-----------|
| College of P. & S., Chicago | (1905) | (1905) | 81 |
| Hahnemann Med. Coll., Chicago | (1906) | (1906) | 89 |
| National Med. Univ., Chicago | (1906) | (1906) | 85 |
| University Med. Coll., St. Louis. | (1906) | (1906) | 83 |
| Toronto University, Canada | (1904) | (1904) | 84 |

| College. | PASSED. | Year Grad. | Per Cent. |
|--------------------------------|---------|------------|-----------|
| Hahnemann Med. Coll., Chicago | (1887) | (1887) | 72 |
| McHerry Med. Coll., Nashville. | (1902) | (1902) | 69 |
| College of P. & S., Chicago | (1899) | (1899) | 62 |

North Dakota January Report.—Dr. H. M. Wheeler, secretary of the North Dakota State Examining Board, reports the written examination held at Grand Forks in January. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 27, of whom 23 passed and 4 failed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|--|------------------|------------|-----------|
| Trinity College | (1904) | (1904) | 86 |
| College of P. & S., Chicago (1898) 77; | (1904) 76; | (1905) | 81 |
| University of Minnesota | (1904) 87.5, 91; | (1905) | 77, 82 |
| Johns Hopkins University | (1905) | (1905) | 86 |
| Hamline University | (1904) 76.5; | (1905) | 76, 82 |
| Rush Medical College | (1885) 75; | (1905) | 78, 81 |
| Northwestern University | (1905) | (1905) | 84 |
| Hering Medical College | (1904) | (1904) | 86 |
| Queen's University, Ontario | (1905) | (1905) | 75 |
| Detroit Medical College | (1904) | (1904) | 83 |
| Sioux City Medical College | (1898) | (1898) | 70 |
| University of Illinois | (1903) | (1903) | 87 |

| College. | PASSED. | Year Grad. | Per Cent. |
|----------------------------|---------|------------|-----------|
| Germantown* | (1903) | (1903) | |
| University of Christiana** | (1902) | (1902) | |
| St. Louis University** | (1905) | (1905) | |
| Pedric Medical College* | (1905) | (1905) | |

Two candidates received licenses to practice because North Dakota reciprocates with the states from which they came.

* This candidate did not produce diploma.

** Below 65 in one or more branches and average therefore not computed.

Ohio December Report.—Dr. D. N. Kinsman, secretary of the State Board of Medical Registration and Examination, reports the written examination held at Columbus, Dec. 12-14, 1905. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of applicants examined was 29, of whom 24 passed and 5 failed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|---------------------------------------|----------------|------------|-----------|
| Cleveland University of Med. & Surg.* | (1897) | (1897) | 75 |
| Cleveland Homeo. Med. Coll. | (1899) | (1899) | 89 |
| Eclectic Med. Inst., Cincinnati | (1891) 87; | (1904) | 75 |
| Jefferson Med. Coll. | (1883) 87; | (1892) | 92 |
| Medical College of Virginia | (1905) | (1905) | 80 |
| University of Pennsylvania | (1895) 88; | (1902) | 91, 96 |
| Starling Med. Coll. | (1905) | (1905) | 80 |
| Western Reserve University | (1882) 86; | (1905) | 88 |
| University of Munich | (1903) | (1903) | 84 |
| Ohio Med. Coll. | (1905) 81, 86, | (1905) | 93, 95 |
| College of P. & S., Cleveland | (1905) | (1905) | 75, 85 |
| Western University, London, Ont. | (1904) | (1904) | 83 |
| Rush Med. Coll. | (1905) | (1905) | 85 |
| Illinois Med. Coll. | (1905) | (1905) | 80 |
| College of P. & S., Baltimore | (1905) | (1905) | 89 |

| College. | PASSED. | Year Grad. | Per Cent. |
|----------------------------------|--------------|------------|-----------|
| Cooper Med. Coll., San Francisco | (1887) | (1887) | 65 |
| Medical College of Ohio | (1904) 79.4; | (1905) | 80.6 |
| Toronto University | (1888) | (1888) | 64 |
| Toledo Med. Coll. | (1904) | (1904) | 71 |
| Helsinki University, Finland | (1900) | (1900) | 73 |

* In 1898 this institution joined with the Cleveland Medical College to form Cleveland Homeopathic Medical College.

Rhode Island January Report.—Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held in Providence, Jan. 4-5, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of applicants examined was 14, of whom 8 passed and 6 failed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|------------------------------|--------------|------------|-----------|
| Baltimore Med. College | (1904) 79.4; | (1905) | 80.6 |
| Baltimore University | (1904) 75.1; | (1905) | 76.8 |
| College of P. & S., New York | (1903) | (1903) | 84.1 |
| Laval University | (1890) | (1890) | 80.4 |
| University of Naples | (1890) | (1890) | 75 |
| Yale University | (1904) | (1904) | 72.7 |

| College. | PASSED. | Year Grad. | Per Cent. |
|--|-------------|------------|-----------|
| Baltimore University | (1904) | (1904) | 72.7 |
| Kentucky School of Medicine | (1904) | (1904) | 70.6 |
| Laval University | (1905) 66.2 | (1905) | 70.8 |
| Medico-Chirurgical College, Pennsylvania | (1896) | (1896) | 54.6 |
| University of Ghent | (1896) | (1896) | 59.6 |

* Year of graduation not given.

South Dakota July Report.—Dr. H. E. McNutt, secretary of the South Dakota Board of Medical Examiners, reports the written examination held at Sioux Falls, July 12-14, and Huron, Aug. 10, 1905. The number of subjects examined in was 12; total number of questions asked, 96; percentage required to pass, 75. The total number of candidates examined was 29, of whom 22 passed and 7 failed. Three candidates were licensed by reciprocity with Illinois and 6 by reciprocity with Iowa. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|---|--------------|--------------|-----------|
| McGill University | (1903) | (1903) | 81.3 |
| University of Christiana | (1886) | (1886) | 75 |
| College of P. & S., Chicago | (1896) 85.7; | (1905) | 75, 81 |
| Creighton Med. Coll., Omaha | (1905) | (1905) | 85.8 |
| University of Edinburgh, Scotland | (1893) | (1893) | 75 |
| Harvard University | (1889) | (1889) | 77.7 |
| University of Buffalo | (1904) | (1904) | 85 |
| University of Minnesota (1897) 81; | (1904) 81.6; | (1905) 78.1, | 80.8 |
| Barnes Med. Coll. | (1905) | (1905) | 79.8 |
| University of Nebraska | (1903) | (1903) | 80.9 |
| Rush Med. Coll. | (1904) | (1904) | 88.7 |
| University of Toronto | (1889) 75; | (1905) | 85.6 |
| Chicago Med. Coll. | (1896) | (1896) | 82.2 |
| Maryland Med. Coll. | (1904) | (1904) | 78 |
| American College of Med. and Surg., Chicago | (1905) | (1905) | 81.8 |
| University of New York | (1890) | (1890) | ** 75 |

| College. | PASSED. | Year Grad. | Per Cent. |
|----------------------------------|---------|------------|-----------|
| Starling Med. Coll. | (1903) | (1903) | * 71.3 |
| Washington University, St. Louis | (1904) | (1904) | * 72.6 |
| Drake University | (1886) | (1886) | 72.9 |
| College of P. & S., Chicago | (1905) | (1905) | 70.5 |
| Bennett Med. Coll., Chicago | (1897) | (1897) | 53.9 |
| Barnes University, Missouri | (1901) | (1901) | 68.1 |
| University of Vermont | (1899) | (1899) | * 68.5 |

* Second examination.

** Third examination.

The following questions were asked:

SURGERY.

1. Give symptoms and differential diagnosis of Pott's disease. What is scoliosis, lordosis, kyphosis? 2. How would you treat ?

case of gunshot wound of the lower jaw with a great deal of loss of soft parts and with from one inch to one and one-half inches shattered and blown away? 3. Describe two of the most common dislocations of the hip joint. Give the differential diagnosis of dislocations and interscapular fracture. Give function of ilio-femoral ligament in dislocations of hip. 4. Describe accurately the proper method of locating the fissures of Iolando and Sylvius on the skull. 5. Give diagnosis and pathology of gallstones in bladder and ducts. 6. Describe the course and treatment of a case of infection of the hand and extending up the arm. What are liable to be the results? 7. Describe various fractures involving the elbow joint. Give the important points to be observed in treatment of fractures near joints to prevent excessive callus and ankylosis. 8. Give differential diagnosis between fracture of neck of the humerus and the head of the scapula. Give treatment of the latter. 10. Describe accurately an amputation of the leg at the junction of middle and lower thirds.

BACTERIOLOGY.

1. From what two bacteria must the bacillus tuberculosis be distinguished? 2. Name five bacteria that do not stain by the Gram method. 3. What is Koch's law? 4. Name one bacillus that can not exist in air. 5. How can malaria be diagnosed from typhoid fever microscopically?

ANATOMY.

1. Describe the scapula. 2. Describe the middle meningeal artery, giving origin, branches, and the structures supplied. What difference, if any, in structure of artery as compared with other arteries? 3. Describe muscles of adduction and abduction of thigh, giving origin and insertion of each. 4. Describe the elbow joint and mention bones and ligaments forming it. 5. Describe the bones of the ear. 6. Describe the submaxillary, parotid and suprarenal glands. 7. Ligate the subclavian artery at outer third. Give collateral circulation after. 8. Mention in order the muscles over McBurney's point, and give directions of fibers in each. 9. Describe the spleen. 10. Describe Littre's gland.

DISEASES OF WOMEN.

1. Give differential diagnosis of oophoritis of right side, and appendicitis. 2. Give cause, diagnosis and treatment of pelvic peritonitis; prosalpinx. 3. Do a vaginal hysterectomy. 4. Give reasons advanced for Alexander's operation. Describe the operation in detail. 5. Mention symptoms and diagnosis of fibroid tumors of the uterus.

EYE AND EAR.

1. Give differential diagnosis between keratitis and iritis. Give treatment of each. 2. Define astigmatism; synecchia; hypopyon; myopia. 3. What muscle or muscles rotate the eye outward and downward? 4. Give three characteristic symptoms of glaucoma, and one important remedy. 5. Give symptoms and treatment of hemorrhage in internal ear.

SKIN AND VENEREAL DISEASES.

1. Give differential diagnosis of eczema and psoriasis, and give treatment of the latter. 2. Differentiate between syphilis, psoriasis and lupus vulgaris. 3. How would you treat herpes zoster? 4. What is meant by gonorrheal orchitis, and how would you treat it? 5. Diagnose and treat secondary syphilis.

CHEMISTRY.

1. Define an element; a molecule; an atom. 2. What are atomic weight, specific gravity, valance? 3. Name the normal constituents of urine. 4. How would you detect sugar in urine? How estimate the daily quantity? 5. What is formed when phosphorus burns? 6. What happens down air undergo during respiration? 7. How would you detect the presence of starch? 8. Give formula for permanganate of potassium. What poisons is it said to antidote? 9. What is fermentation? 10. What is Paris green? Give treatment for poisoning by it.

HOMEOPATHIC PRACTICE AND THERAPEUTICS.

1. Differentiate hepatization of lower lobe of lung and pleuritic effusion. Name one prominent remedy, with indications, for each condition. 2. Describe a clinical case, giving symptoms, in which you would prescribe mere, corr. 3. Name and give indications for two prominent remedies in the grippe. 4. Outline your treatment of cholera infantum. Give indication for the remedies you would use. Name three remedies useful in constipation, giving characteristic indications for each. 6. How would you treat uremic convulsions? Give remedies and dose. 7. On what indications would you prescribe belladonna in throat affections? 8. Describe a clinical case, giving symptoms, in which you would prescribe apocynum. 9. Give stomach symptoms calling for a. Ipecacuanha, and b. Ipecac. 10. Name two heart remedies, giving indications for their use.

MEDICAL JURISPRUDENCE.

1. What is somatic death? Molecular death? 2. What changes in the skin would indicate death? 3. How would you determine whether death was due to drowning, or to some other cause and the body subsequently submerged? 4. Define illusion, hallucination, delusion. 5. What is the history of hydrocyanic acid poisoning? What is the antidote?

OBSTETRICS.

1. Describe the lochia. How long does it last? 2. Name the normal presentations of the vertex, and give diagnosis of the one most frequent. 3. Give cause and treatment of after-pains. 4. Give choice, and reason therefor, and the manner of administering an anesthetic in an ordinary case of labor. Where would you not use it? 5. Describe minutely the operation for Cesarean section. 6. Describe "birth-marks," and give their cause. 7. What do you do to prevent rupture of the perineum? 8. Describe fully the first care and dressing of the child. 9. Give cause, diagnosis, dangers and treatment in a severe case of antepartum hemorrhage.

GENERAL PATHOLOGY.

1. Describe catarrhal inflammation. 2. Define atrophy. Give varieties of atrophy. 3. What pathologic changes may eelastices undergo? 4. Name the most common pyogenic bacteria. 5. Where and what are the pathologic changes in bulbar paralysis? 6. Give the possible causes of occlusion of the bile duct. 7. Describe yellow

or crude tubercle. 8. What is thrombosis? Describe the manner of its formation. Give some of the lesions in chronic interstitial nephritis. 10. Explain the development of pus corpuscles.

REGULAR PRACTICE AND THERAPEUTICS.

1. Give diagnosis of pneumonia. 2. Differentiate neuritis and rheumatism. 3. Differentiate diphtheria and follicular tonsillitis. 4. What is the significance of prolonged expiration? 5. Give the physical signs of a cavity of the lungs in pulmonary tuberculosis. 6. Denote therapeutic incompatibility; chemical incompatibility. 7. Outline the treatment of uremia. 8. Compare opium and belladonna as to action on the heart. 9. What serious results may ensue from indiscriminate use of acetanilid? 10. Give treatment for ulcer of the stomach. 11. Give name and dose of each of five official preparations of opium.

ECLECTIC MATERIA MEDICA, THERAPEUTICS AND PRACTICE.

1. Give names and doses of three general anodynes. 2. Give the official name and the composition of Fowler's solution. 3. Write a prescription containing drugs that are chemically incompatible. 4. What precautions should be used in giving medicines by the hypodermic method? 5. Describe the manner of giving sulphuric ether. 6. In what diseases would you give salicylic acid? Dose of same. 7. Write a prescription for general debility. 8. What remedies would you use in obstinate vomiting, due to pregnancy? Doses of same. 9. Give treatment for night sweats. 10. Describe and treat a case of rubella.

PHYSIOLOGY.

1. Describe the white blood corpuscles, and give their source and functions. 2. What changes are produced in the air by respiration? 3. Describe the normal heart sounds. 4. Describe the lymphatic system. 5. Give the time, and cause of eruption, of the eruptory set of teeth. 6. Differentiate between tonic and clonic muscular contractions, and give an example of each. 7. What conditions produce variation in the normal temperature of the body? 8. Describe the human blood. 9. What gives color to the skin? 10. What are the causes of death from asphyxia?

Vermont January Report.—Dr. W. Scott Nay, secretary of the Vermont State Board of Registration, reports the written examination held in Montpelier, Jan. 9-11, 1906. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of applicants examined was 2, both of whom passed. The following colleges were represented:

| | PASSED. | Year Grad. | Per Cent. |
|---------------------------|---------|------------|-----------|
| College. | | | |
| University of Louisville | | (1905) | 85.9 |
| Jefferson Medical College | | (1905) | 84.7 |

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending February 3, 1906:

Bushnell, George E., surgeon, granted thirty days' leave of absence.
Gandy, Charles M., surgeon, granted ten days' leave of absence.
Clarke, Joseph T., surgeon, granted three months' leave of absence.
Roberts, Wm., asst.-surgeon, ordered to proceed from Fort Hamilton, N. Y., to Fort Jay, N. Y., for temporary duty.
Grissinger, Jay W., asst.-surgeon, leave of absence extended ten days.

Newlove, George, contract surgeon, reported at New York for duty as surgeon of the transport *Metclelan* on its next voyage to the Philippines.

White, J. Samuel, contract surgeon, left Fort Snelling, Minn., for New York City, to accompany the First Infantry thence to Philippine service.

McCallum, Francis M., contract surgeon, accompanied troops from Fort D. A. Russell, Wyo., to Seattle, Wash., and returned.

Brown, Wilmont E., contract surgeon, ordered from Fort Walla Walla, Wash., to Fort Barracks, Idaho, for temporary duty.

Dickenson, Clarence F., contract surgeon, ordered to accompany the Second Infantry from Fort Logan, Colo., to San Francisco, Cal., and thence to Philippine service.

Dillon, G. F., contract surgeon, ordered from Fort McDowell, Cal., to Army and Navy General Hospital, Hot Springs, Ark., for treatment.

Kuhn, Charles F., contract surgeon, arrived at Fort William H. Seward, Alaska, for temporary duty.

Waddell, Ralph W., dental surgeon, returned to Fort Leavenworth, Kans., from temporary duty at Fort Washakie, Wyo.

Whinnery, Jean C., dental surgeon, arrived at Fort Wright, Wash., for temporary duty.

McAlister, John A., dental surgeon, returned to Presidio of Monterey, Cal., from leave of absence for two months.

Macy, Fred S., contract surgeon, left Allegheny Arsenal, Pa., for duty at Fort Adams, R. I.

Van Kirk, Herbert H., contract surgeon, returned to Fort Sill, Okla., from march with Field Artillery to Fort Sam Houston, Texas.

Navy Changes.

Changes in the Medical Corps, United States Navy, for the week ending Feb. 3, 1906:

Rothganger, G., surgeon, detached from the naval hospital, Norfolk, Va., and ordered to the naval hospital, New York, N. Y.

Farenholt, Surgeon A., detached from the *Raleigh* and ordered to the *Oregon*.

Freeman, G. F., passed assistant surgeon, detached from the naval station, Cavite, P. I., and ordered to the *Italgia*.

Wheeler, L. H., assistant surgeon, ordered to the naval station, Cavite, P. I.

Rixey, P. M., surgeon general, commissioned surgeon general and chief of the Bureau of Medicine and Surgery, Navy Department, with the rank of rear admiral from Feb. 5, 1906.

Gatewood, James D., surgeon United States Navy, designated by the acting secretary of the navy, is detailed as a member of the joint board of medical officers of the army and navy, appointed by order of Jan. 11, 1906, War Department, to consider improvements in the first-aid dressings and uniformity of equipment for the medical departments of the two services, vice Surgeon Charles P. Stokes, United States Navy, relieved. War Department, January 31.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended January 31, 1906:

Kalchoe, P. C., surgeon, reassigned to duty at Portland, Me., Quarantine Station.

Cofor, L. B., P. A. surgeon, letter granting leave of absence for twenty days, from January 19, amended to read twenty days from January 20.

Grubbs, S. D., P. A. surgeon, granted twenty-one days' leave of absence from February 2.

Anderson, J. E., P. A. surgeon, resigned to duty in the Hygienic Laboratory, effective January 23.

Hobby, W. C., P. A. surgeon, relieved from duty at Honolulu, Hawaii, and directed to proceed to San Francisco Quarantine Station and assume command of the service, relieving P. A. Surgeon N. S. Manning.

Corput, G. M., P. A. surgeon, directed to proceed to Kenner and other places in Louisiana for special temporary duty, on completion of which to rejoin station in New Orleans, La.

Corput, G. K., P. A. surgeon, granted five days' leave of absence from January 16, under provisions of Paragraph 191 of the Regulations.

McLaughlin, A. J., P. A. surgeon, relieved from temporary duty at Berlin, Germany, and directed to rejoin station at Naples, Italy. Colwell, Geo. L., assistant surgeon, granted leave of absence for two days from January 22, under provisions of Paragraph 191 of the Regulations.

Stearns, W. L., pharmacist, granted five days' extension of leave of absence from January 27.

Walterus, Mathias, pharmacist, granted thirty days' leave of absence from February 15.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended February 2:

SMALLPOX—UNITED STATES.

Arkansas: Fort Smith, Jan. 13-20, 1 case.
California: San Francisco, Jan. 13-20, 14 cases.
Delaware: Wilmington, Jan. 20-27, 1 case.
Florida: Alachua County, Jan. 20-27, 3 cases; Gadsden County, 1 case; Jacksonville, 8 cases; Folk County, 1 case.
Kentucky: Covington, Jan. 20-27, 8 cases.
Louisiana: New Orleans, Jan. 20-27, 4 cases.
Maryland: Baltimore, Jan. 20-27, 1 case.
Nebraska: South Omaha, Jan. 13-27, 8 cases.
Ohio: Cincinnati, Jan. 19-26, 7 cases; Dayton, Jan. 20-27, 1 case.
South Carolina: Camden, Jan. 13-20, 1 case.
Wisconsin: Appleton, Jan. 20-27, 8 cases.

SMALLPOX—ISLAND.

Porto Rico: San Juan, Dec. 1-31, present.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, Oct. 1-31, 47 deaths.
Canada: New Brunswick: Queen's County, Jan. 9-18, present; Sunbury County, Jan. 9-22, 106 cases.
China: Shanghai, Dec. 21, present.
France: Paris, Jan. 6-14, 11 cases, 1 death.
Ecuador: Guayaquil, Dec. 17-24, 2 deaths.
India: Bombay, Dec. 26-Jan. 2, 7 deaths; Calcutta, Dec. 9-16, 20 deaths; Karachi, Dec. 25-31, 3 cases, 1 death; Madras, Dec. 16-29, 15 deaths.
Italy: General, Jan. 4-11, 22 cases.
Mexico: Tuxpam, Jan. 16-23, 1 death.
Russia: Odessa, Dec. 30-Jan. 6, 16 cases, 2 deaths; St. Petersburg, Dec. 25-30, 10 cases, 3 deaths.
Spain: Barcelona, Jan. 1-19, 4 deaths; Cadiz, Dec. 1-31, 1 death.
Turkey: Constantinople, Dec. 17-31, 8 deaths.

YELLOW FEVER—UNITED STATES.

Louisiana: Jefferson Parish (Kenner), Jan. 28, 1 case.

YELLOW FEVER—FOREIGN.

Ecuador: Guayaquil, Dec. 17-24, 8 deaths.
Mexico: Merida, Jan. 14-29, 2 cases, 1 death; Vera Cruz, 2 cases, 1 death.

CHOLERA—FOREIGN.

India: Calcutta, Dec. 9-16, 61 deaths; Madras, Dec. 16-29, 10 deaths; Rangoon, Dec. 16-23, 13 deaths.
Russia: Government, Lomza, Dec. 23-30, 4 cases, 1 death; Ostrow, 1 case, 1 death; Plock, Dec. 4-17, 50 cases, 20 deaths; Sledin, Nov. 23-Dec. 25, 22 cases, 10 deaths; Warsaw, to Dec. 18, 9 cases, 5 deaths.

PLAQUE—FOREIGN.

Africa: Portuguese East Africa, Chinde, Nov. 12-18, 1 case, 1 death.
India: Bombay, Dec. 26-Jan. 2, 9 deaths; Calcutta, Dec. 9-16, 21 deaths; Karachi, Dec. 24-31, 20 cases, 15 deaths.
Japan: Shimonoseki, to Dec. 23, 5 cases.
Mauritius: Dec. 8-20, 15 cases, 12 deaths.
Peru: Callao, Dec. 11-20, 1 case, 1 death; Lima, 1 case, 1 death; Molleando, 1 case; San Pedro, 4 deaths.

Medical Organization

Illinois.

MOULTRIE COUNTY MEDICAL SOCIETY.—Physicians of Moultrie County met at Sullivan recently and effected organization with the following officers: President, Dr. W. E. Stedman, Sullivan; vice-president, Dr. Howard Hamilton, Bethany; secretary and treasurer, Dr. Zerfass, Sullivan, and censors, Drs. W. P. Davidson, Sullivan; John D. Hardinger, Gays, and William H. Davis, Bethany.

Good Results from Organization.

CLATSOP COUNTY (ORE.) MEDICAL SOCIETY.—The secretary of this society, in a recent communication, says: "Our society is small, but includes every licensed practitioner in the county; we meet every two weeks, have excellent papers followed by discussion, and in addition to taking up subjects that are of interest to the profession, have interested ourselves in matters that pertain to the public welfare. Previous to the formation of our society the local physicians were scarcely on speaking terms with each other; now every man is an active member, we meet socially as well as professionally, and our only regret is that we did not get together many years ago."

The Physician's Relations to His Professional Associates.

As a merchant takes account of stock each year in order to ascertain the condition of his business and whether he is progressing or retrogressing, so each of us should from time to time interrogate himself, and see whether we are doing the best and the most with our abilities and opportunities. Let each one of us occasionally ask himself a few pertinent questions and endeavor to answer them frankly and truthfully. He who can not be true to himself is hopeless, for he can not be true or honest to anyone, or under any circumstances be considered absolutely reliable.

As a member of a learned and liberal profession, what is my relation to that profession and to the community in which I live? Am I living so as to bring credit and repute to myself and to my profession? When I consider my brother physicians in my vicinity, is my heart free from envy, hatred and malice, am I dwelling at peace with them, and if not—why? Is the fault entirely theirs? Have I not allowed some false rumor or the idle talk of some irritable patient to prejudice me against a brother practitioner, and have I taken the trouble to verify the statements made to me? In fact, do I know him sufficiently well to judge him in any particular? Have I met him socially and professionally, and have I tried to find out his good points and his professional ability, and to be at peace with him, or have I ignored him, failed to attend my county medical society because he was likely to be there, and because I was foolish enough to believe the stories carried to my ears and so did not wish to associate with him? Have I treated him fairly and as I would have him treat me, under similar circumstances?

Toward the physicians younger than myself, or to those who have more recently come here, have I extended the hand of fellowship, and have I welcomed them in a brotherly way; or have I criticized and belittled them and endeavored to make their path as rough, as unpleasant and as impossible as I could? Have I acted the part of a broad minded, well educated and skillful member of the greatest of the liberal professions, and thus brought credit and repute to that profession as well as to myself, or have I acted the part of a jealous, petulant man, and through my derogatory comments and criticisms—which were in the main untrue—brought discredit to a brother practitioner and to myself and my profession?

The science and art of medicine is progressing rapidly in these days, and to keep pace with it, that physician who will be properly equipped so that he may give his patients the very best that medical learning can provide, must be ever a student, must read and study carefully the writings of many men. Have I done this, or have I simply stagnated, remained stationary and allowed the stream of medical knowledge to go by me? Am I as well equipped as I should be to attend to the wants of my patients? Have I been giving to my patients remedies the composition of which I am ignorant, and thus possibly endangering some one's life, or have I used that knowledge and judgment in prescribing which my patients assume that I possess? In general, am I as good a doctor as I should be?

These and many other questions are such as we should ask ourselves from time to time. How many who read them and truthfully enthrice themselves can answer them satisfactorily? Particular stress is laid on the personal relation of the phy-

sician to his professional brethren, for it is the most important relation in professional life. Without association with others of his kind, progress and education are very difficult, nay, well nigh impossible.

The solitary and isolated life of the physician leads him toward two deadly dangers: egotism and narrow-minded ignorance. In the course of his work he meets with sick people—his patients—and but seldom with his brother physicians. His patients rank him high and compliment him, not knowing whether he is doing his work as well as he should or not; and unconsciously he elevates himself in his own estimation, and too often looks down on and belittles his fellows. Thus there is lacking the incentive to study, to progress; he overestimates his own knowledge and attainments. Frequent association with other physicians who are doing as much or more work, and as good or better work than he is doing himself, is the very quickest and surest way of removing these elemental delusions of grandeur and of re-establishing in such a physician a more healthy mental tone.

Society Proceedings

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Centennial Meeting, held at Albany, Jan. 30, Feb. 1, 1906.

The President, DR. JOSEPH D. BRYANT, New York, in the Chair.

Cleveland Urges More Medical Knowledge for Public.

This meeting marked the reunion of the two medical bodies of New York state after a separation of twenty-five years. Ex-President Grover Cleveland was one of the speakers and took as his theme the further education of the public in matters medical. He referred to the old-time doctor who surrounded his methods of diagnosis and treatment with much mystery. This habit has been largely done away and is now the property of the quack. Mr. Cleveland urged that the medical profession go further and tell the patient more about what is the matter with him, the causes of it, how it may be relieved and what particular method is used in the particular case. He felt that the time is ripe for this step.

Bryant's Happy Address.

The president DR. BRYANT, in his address said that the medical profession of the country regards this occasion as one of the most important in the history of its existence. "For a painfully long period of time the open contention existing in the medical profession of this state has robbed the profession of the significant influence in medical and public matters freely accorded to much less beneficent and potent bodies of men. Bodies illy inclined to salutary measures and encouraged chiefly because of their forceful organization, even in the attainment of self-seeking aims, have badly defeated the wholesome endeavors of the disorganized opposition of magnanimous and earnest medical desire. Too often, indeed, in the past divided medical counsel or half-hearted medical support has failed to beget the respectful consideration, on the part of those in authority, due to the justice of a cause championed by the medical profession. How often, in fact, has it happened within the easy recollection of us all that we have fittingly been told by those in authority: 'When you can agree among yourselves, then come to us for aid!' This reason or excuse, whichever it may have been, can no longer be regarded as available for the diplomatic purposes which it has served in the past. The enrolled regular physicians of the state—not less than 6,500 in number—are to-day a united body of attentive medical men, laboring in common for commendable interests and beneficent causes. The medical profession of the state can now take hold with a firm, confident grasp in support of wholesome public-spirited propositions and of medical advance with the full consciousness of the fact that their united desire, or their confirmed opinion, will constitute a bulwark of moral force not to be misjudged nor indifferently considered. Please note the fact, my friends, that I refer to general medical and public propositions, meaning general professional and public duty, not private nor personal propositions relating more often than otherwise to private or personal desire, too frequently strongly tinged with self-seeking motives.

"So long as the medical profession shall contribute its part to the interests of the public good, the public servants will heed its admonitions and respect the logic of its appeals. But when unwise personal desires or clanish purposes shall proselyte patriotic or disinterested efforts, then will the hold on public esteem be loosened and medical appeals to public confidence become of much less avail or respectful consideration entirely forfeited. In every community, as well as in the state at large, there are broad and fertile fields for the encouragement and practice of general and special good. Therefore, 'Be ye not weary in well doing,' as the reward for all such labor as this is munificent and ever exercising its influence in behalf of those who actively foster healthy sentiments."

He said that the membership of the society was 6,500, and urged that every regular physician in the state should be a member in good standing. Every one thus enrolled should recognize that he himself is an active unit—if he shall choose so to be—and of as much importance as is any other individual unit of the organized body. "And when he shall have recognized these facts, there yet remains another of far greater significance to be known, the fact that this relationship carries with it profound responsibility—the exacting creator of onerous duty, fortified, let us hope, with abundant love for just causes; duty to ourselves and to our professional brother, to our profession, and to the people at large, and to all things that shall glorify our calling and add to the enlightenment of the world."

Dr. Bryant praised the "extraordinary zeal and infinite patience of the Joint Committee of Conference, to which some time ago the fortunes of the independent medical bodies were mutually and wisely entrusted. Although the members of the committee have builded slowly, they have builded intelligently and for all time, and in strict accordance with the letter of the law regulating such matters. Much yet remains to be accomplished under the order of the court before the control of the affairs of the great body can be relegated by the ad interim House of Delegates to the completed organization. I hope that all who are engaged in the completion of this great work will co-operate promptly and cheerfully with those now vested by the court with the construction of the legal framework required for the purpose."

The election of officers was announced in THE JOURNAL last week.

Prize Money Provided.

DR. LUCIEN HOWE, Buffalo, sent \$1,500 to the society as a nucleus for a fund to provide prizes for essays.

An excellent scientific program was carried out.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Regular Meeting, held Dec. 7, 1905.

The President, DR. RICHARD C. NORRIS, in the Chair.

The Uterus and Ovary of Chronic Neurasthenia.

DR. ROBERT L. DICKINSON, New York, presented the results of a study based on one hundred cases.

The associated lesions and their frequency were as follows: Chronic ovaritis, chiefly microscopic, was found in nearly all the cases. Endometritis, usually cervical, was present in the majority of cases (61) and was seldom accompanied with thickening of the endometrium. A high degree of sclerosis of the vessels of the uterine walls and of those of the endometrium was sometimes discovered in cases of long standing, and the venous enlargements were many. Certain hypertrophies about the vulva were noted in the majority of cases (65). In the bladder, congestion of the trigone was frequent (about 40 cases). In the rectum, catarrh, congestion and atony were present in a large number of cases. Pelvic symptoms were prominent, and lumbar pain was constant. In almost all of these cases the pelvic disorder was coincident, not causative. Dickinson found that correction of moderate abnormalities of structure and function by prolonged local treatment or by operation lessens pelvic pain very little and betters the general condition not at all. Treatment should be directed almost entirely to the general condition. Operation on pronounced pelvic lesions is warrantable in a few selected

cases, such as persistent and exhausting hemorrhages and the larger tumors, and, if thorough-going, brings about a cure, revolutionizing the general condition in a very small percentage of cases. Anatomic cure frequently fails to bring about symptomatic cure.

Dickinson excluded from his list the congenitally delicate, hysteria, melancholia, milder cases, and all not subject to long observation. Many were old office habitués. All complained of sacral pain; 46 complained of cramps at the periods; 43 of irritable bladder; 24 of leucorrhœa, and 10 were entirely free from any pelvic disturbance, except headache. The averages of antelexion and retroversion usual in gynecologic office practice were found. Among 21 retroversions there were 10 operations, all anatomic cures, but obtaining only partial symptomatic relief. All were glad they had it done a short time after operation, but only two were entirely happy about it two years after. Chronic ovariitis, present in gynecologic practice in some 15 per cent. of cases, was seen with surprising frequency. Of 20 confirmed neurasthenics (some outside this series whose ovaries were studied at celiotomies), 20 had distinct microcystic ovariitis. Long-continued tension resulting in alterations in the walls of the vessels of the endometrium and uterine walls was emphasized in this class of cases. In 4 cases intractable menorrhagia called for hysterectomy. The holding up of varicosities of the broad ligament and bladder wall on a pessary explained some improvements. Endometrium, uterine wall, ovary, bladder base, rectal mucosa—all suffered from disturbed vasomotor balance, persistent venous engorgement and sometimes arterial spasm and thickening. Masturbation, evidenced by pronounced corrugated hypertrophies of the labia minora and prepuce and fourchette and enlarged and tabbed meatus (found in 1/3 of all cases in ordinary office gynecologic practice), was detected in 2/3 of the pronounced neurasthenics.

What was new in this small series of cases was the analysis, from the standpoint of the gynecologist, of the relations of pelvic disease to long-standing neurasthenia; the claim of the frequency of chronic ovarian changes, of chronic congestions of the trigone and lower bowel, and of vulvar hypertrophies; the statement that latero-cession and thickening of the left utero-sacral ligament and broad ligament with left-sided ovariitis, in the absence of adhesion, is always due to chronic proctitis; and figures bearing on the small percentage of cures after operation. In conclusion, the author laid great stress on regulation of activities, on training in outdoor life initiated in wisely-conducted sanitariums.

DISCUSSION.

DR. F. X. DERCUM agreed with Dr. Dickinson that in the great majority of cases pelvic disease and neurasthenia, when co-existent, are coincident, and that there is no causal relation between them. One factor, however, to be considered is that neurasthenia, pure and simple, is synonymous with chronic nervous fatigue. The symptoms are characteristic and definite, and the affection constitutes a well-defined fatigue neurosis. Associated with this exhaustion is irritability. In consequence there is in neurasthenia an undue reaction of the nervous system to either peripheral or somatic impressions. For this reason local pathologic conditions might bring about undue reaction in neurasthenia, while in a state of nervous health such conditions may attract no attention. He entirely agreed with Dr. Dickinson that in the chronic and aggravated type of neurasthenia, in women, pelvic symptoms are prominent. He formulated his conclusions on the subject of neurasthenia in women as follows: 1. That neurasthenia may exist independently of any pelvic disease. 2. That neurasthenia and pelvic disease may exist independently in the same patient. 3. That when pelvic disease and neurasthenia co-exist, the pelvic symptoms may be more readily recognized by the patient and, therefore, become more prominent, because in neurasthenia the reaction of the nervous system to abnormal and pathologic impressions is exaggerated.

Pelvic disease never causes true neurasthenia. It might produce general ill health, but the nervous symptoms present are never the symptoms of neurasthenia. That various signs of nervous weakness are present in serious local or general disease, weakening the entire organism and, with it, the nerv-

ous system, is not surprising. To this state he applied the term of spurious neurasthenia or neurasthenia symptomatoma. This is seen in chlorosis, phthisis, syphilis, in the various diseases of the blood, in malignant disease, in the toxemias and in other grave disturbances of nutrition. The nervous symptoms directly due to pelvic disorders, he said, are exceedingly limited. While it was true that there is present pelvic pain, pain referred to the back, to the hips, to the thighs, with indications of general ill health, these symptoms can not be grouped as a separate nervous disorder, but are part of the pelvic disease itself.

He believes that a dispassionate consideration of the subject leads to the conclusion that the surgeon should operate for surgical indications only. The minor pelvic troubles disappear on the institution of rest, full feeding, massage and the like and when the general health of the patient has been brought to a physiologic level.

DR. BARTON COOKE HIRST said that this experience has taught him that the gynecologist does better if he forgets that the patient under examination is a neurasthenic, or if he does not know it. In his opinion, the function of the specialist in pelvic disorders is to examine and report on the pelvic organs and, if disease is found, to give the appropriate advice without necessarily taking into account the patient's general condition, except as a contraindication to operation. If pelvic disease coincident with neurasthenia is discovered, it should be remedied, if possible, in order to put the patient in a better condition for being cured of her neurasthenia, but without expecting that the gynecologic treatment will directly benefit the neurasthenia. Long-continued local treatment for minor pelvic conditions, which might fasten the treatment habit on the woman, should be avoided.

DR. CHARLES K. MILLS said that the neurasthenic condition should be lost sight of and attention and treatment concentrated on the pelvic disorders. His experience with neuro-gynecologic cases has taught him that in many of the cases the conditions presented to the neurologist and gynecologist are dependent on neurotic or neuropathic tendencies in the individual. In the study of aggravated nervous symptoms apparently dependent on disorders of the pelvic organs, the exact cause should be determined, whether it lay in the pelvic condition or in the nervous constitution. In a large majority of cases the explanation is to be found in a study of hereditary predispositions. Attention should be directed to the presence of any real disorders of the pelvic organs, in connection with other treatment. Neurasthenia, like hysteria, he said, is not a disease of the uterus or its appendages, but is primarily a disease of the nervous system. Attention should be directed to the relief of an inherited or of an inherited plus an acquired condition of the nervous system.

DR. J. M. BALDY stated that few competent gynecologists of to-day operate on aggravated cases of neurasthenia. He thinks that, if, when these cases come to the gynecologist, he could forget that they had pelvic symptoms, both the patients and the gynecologists would be fortunate. He thinks that an examination of as many non-neurasthenic women will disclose much the same condition as Dr. Dickinson found in his patients. With Drs. Mills and Dercum, he does not believe that neurasthenia is caused by pelvic lesions, although it might be aggravated in some few cases. Operation, except in a very few well-selected cases, can only do harm. Beyond falling into the hands of an operating gynecologist, he knows of but one equal misfortune for these much-afflicted individuals, and that is to fall into the hands of a rest-cure neurologist. Dr. Baldy stated his fear that his emphatic views concerning the treatment of neurasthenia are not in accord with those of the majority of neurologists and gynecologists. Rest is needed, but only as applied to the nerves, and the rest needed is rest from the irritating elements which are wrecking those organs. The fatigue is purely a nerve fatigue and not a muscular fatigue. Let no man, however, who wished to cure his patient make the mistake of assuming that rest meant rest of the muscles and general physique. This can not be brought about abruptly nor in the same manner in all classes of patients, but the principle can be applied to all. Force the patient, in spite of all pretexts, protests or sympathies, to an

active out-of-door life, with proper hours of rest and regulated diet, milk and eggs constituting a large element in the latter. The "rest-cure," he declared, in any of its phases, is pernicious, and sanitariums are the last places in the world for these cases.

DR. WILLIAM G. SPILLER said that he does not believe that neurasthenia in most cases can be cured by treatment of the generative organs. He is in accord with the view that in the presence of mild disorders of the reproductive organs it is better not to give any treatment to these organs, because attention directed to them aggravates the neurasthenic symptoms. If, however, the symptoms of disease of the degenerative organs are severe, he advises treatment of the lesions, because, until they are treated, there is little hope of improving the neurasthenia. Dr. Spiller believes oophorectomy to be one of the most serious operations that can be performed on a neurasthenic woman, not from a surgical point of view, but he stated that the neurasthenic women who have had ovaries removed are often hysterical and are among the most difficult patients to treat. He believes that the ovaries have some effect on the general health of the individual, especially in younger women. He scents the possibility of a relationship existing between disorders of the reproductive organs and brain tumor, although the effect of a brain tumor in arresting menstruation had been repeatedly observed. Regarding functional disorders, he said, it must be acknowledged that severe disease of the ovaries leading to removal might awaken a latent neurosis which otherwise might never become manifest.

DR. JOHN G. CLARK said that, in the minds of many physicians, neurasthenia and hysteria are almost interchangeable, notwithstanding the wide difference between the two conditions. Charcot described a type of hysteria associated with ovarian pain and located a point at the intersection of a line drawn from the anterior superior spines of the ilium and the outer border of the left rectus muscle, which has been designated as "Charcot's point." This class of patients complain constantly of pain in this area. The point does not correspond to the situation of the ovary, and, as a result of this fallacy, innumerable ovaries have been removed in the past with the thought that the pain would be relieved. He is convinced that this pain had nothing to do with the ovaries. The word neurasthenia, he thinks, is used to cover a multitude of evils, serving about the same purpose for various bizarre nervous symptoms that the word malaria does for an unexplained fever. Asthenia, with nervous manifestations, is classed under the term neurasthenia. From a clinical standpoint, the gynecologist might safely consider these cases under one of three headings: (1) Pure neurasthenia of congenital origin, with morbid pelvic introspection, but without even a microscopic organic lesion; (2) a neurasthenia which is coincident with a given organic lesion, but not dependent on it, although it may greatly exaggerate it; (3) a neurasthenia entirely dependent on an organic lesion.

The patient with neurasthenia of hereditary origin should never have gynecologic treatment, but should be turned over to the neurologist or to any other person capable of diverting the unhealthy stream of her imagination. Such a patient naturally complains of all the ills to which flesh is heir, and if the generative organs become the point of her introspection the gynecologist can not cure her by operative interference. Such a person, becoming the subject of an operation, is likely to establish the operative habit, which has been very appropriately called "mania operativa minor."

In the second class of cases, neurasthenia coincident with some pelvic lesion, the nervous symptoms are usually exaggerated by the pelvic disease; consequently, in such a case this trouble is likely to be improved, although a cure of the neurasthenic phase of the case is naturally not to be expected. In the third class of cases, neurasthenia incident to pelvic lesions, he said, there can be but one viewpoint, and that is the sooner the pelvic lesion is relieved the greater will be the chance for perfect cure of the neurasthenia. If such a case drifts on for weeks or months, the neurasthenic habit might be so completely fixed by the time operation is done that months or years might elapse before such a woman could recover her nervous equilibrium. Such cases are represented by the vari-

ous hemorrhages of the menopause. In such cases suffering from recurring hemorrhages of the menopause or from some new growth, and, with increasing anemia developing, intense neurasthenia should have immediate treatment to stop the hemorrhage, even if hysterectomy is necessary. Such cases make ideal recoveries.

In the treatment of all three of these classes of cases Dr. Clark believes that the skill of the surgeon is tested thoroughly. Every phase of the patient's past life should be traced concerning the various possible manifestations of neurasthenia. The chief point from the operative standpoint is the past history. Gynecologists of experience look on oophorectomy as one of the gravest operations. Unfortunately, young women of 20 or 23 years of age, who have been operated on for double pyosalpinx, frequently drift into the hands of the neurologists and there is formed an unjust prejudice against the operation or the operator on account of the postoperative sequelae. Under the stress of pathologic conditions, however, the gynecologist has been forced to intervene. A large proportion of these patients, however, after having passed through a stormy premature menopause, regain, to a considerable extent, their nervous equilibrium and might complete a very satisfactory life work. The day for the removal of ovaries on symptomatic grounds has passed, and the man who exhibits at society meetings, as has been done in the past, specimens of ovaries, which are vaguely classed as cystic or sclerotic, lays himself open to the severest condemnation. Dr. Clark believes that the gynecologists are greatly indebted to the neurologists for pointing out the radical difference between hysteria and neurasthenia. Gynecologists, as well as other surgeons, have been able to render a reciprocal service by demonstrating the value of operative treatment in the proper classes of neurasthenics.

DR. CHARLES P. NOBLE thinks that the majority of gynecologists believe that neurasthenia and hysteria exist not only independently of trouble in the pelvis, but concomitantly with it. He believes firmly in the existence of reflex disorders and has seen many cases of return to health after correction of some pelvic condition. With this one exception, he is in hearty accord with all the neurologists said on general principles. In his opinion, the gynecologist should deal with a patient with neurasthenia or hysteria associated with pelvic disease as he would deal with an insane patient presenting these disorders. If the pelvic condition threatens the patient's life, it should be corrected. It is then easier to solve the question of any remaining difficulty. In his experience there is no way in the city whereby a neurasthenic in poor circumstances can be treated by the rest cure. In the few places where they are admitted they receive no benefit in the general wards. Regarding the treatment of patients with nervous symptoms, Noble disproves of local treatment for functional symptoms without local lesions in young unmarried women. He believes that there are instances of lives being ruined by these young women becoming tied to physicians' offices and developing psychoses with regard to their sexual organs.

DR. WILLIAM E. ASHTON referred to true neurasthenia and to nervousness dependent on local lesions, and thinks that until the neurologist can positively differentiate between neurasthenia and neurasthenoid conditions it is unnecessary for him to consult with the surgeon. He thinks no neurologist is justified in placing such patients on rest-cures without knowing the condition of the pelvic organs. While he does not believe that a diseased pelvic organ produces essential neurasthenia, he holds that a large number of women not benefited by rest-cures are afterward permanently cured by operation for some gross pelvic lesion. He emphasized the fact that unless the actual condition of the pelvis is known the patient should not be treated by rest-cure. In neurasthenic or pseudo-neurasthenic cases he believes that in the presence of gross pelvic lesions operation should be done for a cure, whether or not the neurologist is certain of the diagnosis. In operation for a cure, the operation should be carefully considered. He believes the removal of enlarged cystic ovaries in a neurasthenic woman is unwise. The resection of the diseased portion alone allows the possibility of pregnancy and the retention of menstruation.

DR. J. MADISON TAYLOR thinks that in the consultations of the gynecologist and the neurologist little would be left for the general practitioner to do. He thinks that in the cases showing arrested development good results will be secured as opportunity is given for better development.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Scabies.

The successful treatment of scabies, according to E. O. Huntington in *New York Med. Jour.*, depends on the destruction of the parasite that causes it; and as this parasite inhabits those parts covered by thin, tender skin, it is difficult to reach them. The flexor surfaces of the wrists, the axillæ, genitals and the spaces between the fingers are the sites of predilection for the acarus. Huntington's treatment consists in directing the patient to take a warm bath, during which time the infected areas are to be gently scrubbed with tincture of green soap and chalk or powdered pumice, followed by the application of sulphur ointment. This may be used alone or combined with balsam of Pern in proportion to the severity of the dermatitis. If pustular lesions are present they may be touched with carbolic acid, which may be neutralized with alcohol previous to applying the ointment. After applying this ointment twice a day for three or four days a cure will be effected. The patient should then be directed to take another warm bath and to make a complete change of clothing. All bed clothing should also be thoroughly disinfected. If dermatitis still persists, any bland ointment will suffice to heal it.

Groat, in the same periodical, in addition to the precautions outlined above, recommends thymol as a safe and sure parasiticide and antipruritic. It may be used in combination with sulphur ointment, as it is liable to irritate the skin when used alone. He also recommends pure ether and alcohol in equal parts as an efficient parasiticide in scabies, but it is irritating where breaks in the integument exist. To allay the dermatitis the ointment of benzoated zinc oxid is recommended in combination with the parasiticide.

In females and children, and where delicate regions are involved, the following combination is of value:

| | | | |
|--------------------------|-----|-----|------|
| R. Thymol | 3i | iss | 4-10 |
| Ung. sulphuris | 3i | ss | 10 |
| Ung. zinci oxidi | 3i | | 30 |
| Lanolini, q. s. ad. | 3ii | | 90 |

M. Ft. unguentum. Sig.: Apply locally three times a day.

In the foregoing either the thymol or the sulphur will kill the parasite. When much eczema exists, or excessive itching, the sulphur should be omitted and the zinc ointment increased, and about one-half dram of menthol added. If the patient objects to the use of ointments the following lotions are of value:

| | | | |
|-----------------|-----|----|----|
| R. Thymol | 3i | ss | 10 |
| Alcoholis | 3ii | | 90 |

M. Ft. lotio. Sig.: Apply locally three times a day. Or:

| | | | |
|---------------------|----|----|----|
| R. Thymol | 3i | ss | 10 |
| Spts. etheris | 3v | | 20 |
| Alcoholis | 3i | ss | 75 |

M. Ft. lotio. Sig.: To be applied locally three times a day. Or:

| | | | |
|--------------------------|----------|----|----|
| R. Menthol | gr. lxxv | | 5 |
| Alcoholis | 3i | ss | 10 |
| Alcoholis q. s. ad. | 3ii | | 90 |

M. Ft. lotio. Sig.: Apply locally.

After applying one of the foregoing lotions locally for a few days the following ointment should be applied:

| | | | |
|---------------------------|----------|--|----|
| R. Ung. zinci oxidi | 3ii | | 60 |
| Iethylol | gr. lxxv | | 5 |
| Lanolini q. s. ad. | 3ii | | 90 |

M. Ft. unguentum. Sig.: Apply locally.

The author emphasizes the value of thymol as a parasiticide and as an anesthetic to the peripheral nerve endings, thus allaying the itching.

The best remedy to employ after the parts are properly prepared, according to Alger, is betanaphthol with sulphur as a good substitute. He employs it in the following combinations:

| | | | |
|-----------------------|-----|----|----|
| R. Betanaphthol | 3i | ss | 6 |
| Saponis mollis | 3ss | | 15 |
| Liq. petrolati | 3i | ss | 45 |

M. Ft. unguentum. Sig.: Apply locally twice a day for four days.

After these applications a bath should be ordered and a change of clothing.

Other combinations are recommended by some authorities as follows:

| | | | |
|---------------------------|-----|--|----|
| R. Sulphuris sublim. | 3i | | 4 |
| Balsami Peruviani | 3ss | | 2 |
| Lanolini | 3i | | 30 |

M. Ft. unguentum. Sig.: Apply locally. Or:

| | | | |
|-----------------------------------|-------|--|-----|
| R. Hydrarg. chloridi corros. | gr. i | | 106 |
| Ammonii chloridi | 3ss | | 2 |
| Alcoholis | 3vi | | 24 |
| Aque rose q. s. ad. | 3vi | | 180 |

M. Ft. lotio. Sig.: Apply locally.

As an ointment the following, containing the oil of cade, may be used:

| | | | |
|---------------------------|-----|----|----|
| R. Sulphuris sublim. | 3ii | | 8 |
| Olei cadini, aa. | 3i | ss | 10 |
| Creta prep. | 3i | | 30 |
| Saponis viridis | 3i | | 30 |

M. Ft. unguentum. Sig.: Apply locally twice a day.

In the "Handbook of Local Therapeutics" the following combinations are recommended:

| | | | |
|---------------------------|-----|--|----|
| R. Sulphuris flores. | 3ii | | 8 |
| Betanaphthol | 3i | | 4 |
| Balsami Peruviani | 3i | | 30 |
| Lanolini q. s. ad. | 3ii | | 60 |

M. Ft. unguentum. Sig.: Apply locally.

Potassa sulphurata may be employed in the form of a lotion in the following strength:

| | | | |
|-----------------------------|-------|--|-----|
| R. Potass. sulphurate | 3iv | | 16 |
| Aque | 3viii | | 240 |

M. Ft. lotio. Sig.: Apply locally two or three times a day.

And as an ointment in the following strength:

| | | | |
|-----------------------------|-----|--|----|
| R. Potass. sulphurate | 3ss | | 2 |
| Lanolini | 3i | | 30 |

M. Ft. unguentum. Sig.: Apply locally twice a day.

Constipation in Infancy.

According to Robert Hutchison, the consequences of constipation in children are sometimes of a serious nature because of the toxic effects as well as the mechanical effects in the intestine. The patients become dull and languid, and suffer from headache, anorexia and insomnia. They become restless, nervous and irritable. In some instances he speaks of an intermittent pyrexia as being the result, simply, of constipation.

In the treatment of constipation the diet must be carefully regulated and proper exercises instituted, giving especial attention to the exercise of the abdominal muscles as well as massage and cold douching or spraying to the stomach.

In some cases, simply increasing the amount of water drunk by the child will be sufficient to correct the trouble. In the greater number of cases, however, aperients are necessary. He emphasizes the importance of persistent, systematic, continuous treatment and the spasmodic intermittent treatment.

Cascara is recommended, as a combination containing aloes, as follows:

| | | | |
|-----------------------|-------|--|---|
| R. Tinct. aloes. | m. xv | | 1 |
| Sodii sulphatis | 3i | | 4 |
| Syrupi semine | 3i | | 4 |

M. Sig.: At one dose at bedtime. Increase the dose gradually until two movements daily are obtained.

This combination may be continued for some weeks and gradually diminished.

In some cases a preparation which is supposed to stimulate the action of the liver is advised, and for this purpose he rec-

ommends mercury in the form of the hydrargyrum cum creta given in addition to the foregoing preparations:

If mucus or worms are present this author advises rhubarb combined as follows:

| | | |
|-------------------------|---------|-------|
| R. Pulv. rhei..... | gr. v-x | 30-65 |
| Hydrarg. cum creta..... | gr. i | 06 |

M. Ft. cachet No. i. Sig.: One at bedtime.

The rhubarb exercises a tonic or astringent effect on the mucous membrane and thus checks the secretion of mucus. The important point in the treatment is to select a tonic laxative and to administer it persistently for several weeks or months. This selection should depend on the reaction of the patient, as some patients react much better to one preparation than will another. The object to be obtained is to educate the bowels, which, according to the author, can be accomplished in the child but not in the adult.

CATARH OF THE INTESTINE.

In cases of catarrh of the intestine, whether constipation or diarrhea is present, he recommends alkalies to dissolve the mucus. The following combination is of value:

| | | |
|----------------------------|-------|----|
| R. Potassii bicarb..... | | |
| Potassii citratil, aa..... | gr. v | 30 |
| Tinet. nucis vomice..... | m. i | 06 |
| Infus. gentiane co..... | ℥ii | 8 |

M. Sig.: At one dose in a little water, before meals.

As an aperient the following may be used:

| | | |
|-------------------------|----------|-------|
| R. Pulv. rhei..... | gr. viii | 50 |
| Sodii bicarb..... | gr. x | 65 |
| Hydrarg. cum creta..... | gr. i-ii | 06-12 |

M. Ft. cachet No. i. Sig.: At bedtime every night, or in mild cases every second night.

After following this treatment for two weeks the administration of tonics is required, which must include iron.

Medicolegal

Destruction of Life During Parturition.

The Court of Criminal Appeals of Texas reverses, on the appeal of Evans vs. State, a judgment of conviction for destroying the life of a child during parturition. It says that, in its opinion, the evidence was wholly insufficient to support the conviction. It failed to show with any degree of satisfaction or conclusiveness that the child was born alive, or was alive at the inception of its birth. Without such proof the evidence was not sufficient to sustain the conviction.

Alcohol in Medicines and External Remedies.

The United States commissioner of internal revenue says, in a recent ruling, that the internal revenue laws of the United States do not contain any provision as to the quantity of alcohol that may be used in the manufacture of medicines. The ruling in Circular 673 (reported on page 1025 of THE JOURNAL of Sept. 30, 1905), has no application to external remedies, such as liniments, in the preparation of which alcohol is used. No special tax is required to be paid under these laws for the manufacture and sale of liniments.

Second Physical Examinations in Injury Cases.

Section 873 of the New York Code of Civil Procedure provides that: "In any action brought to recover damages for personal injuries, where the defendant shall present to the court or judge satisfactory evidence that he is ignorant of the nature and extent of the injuries complained of, the court or judge shall order that such physical examination be made," etc. In the personal injury case of Orlando vs. Syracuse Rapid Transit Railway Co. an order for the physical examination of the plaintiff was obtained on affidavits which showed that the defendant was ignorant of the nature and extent of his injuries. There was no suggestion in the affidavits that a physical examination had already been made at the request of the defendant, with the plaintiff's consent, without any order therefor. But the plaintiff's counsel thereafter presented to the justice who made the order an affidavit showing such former examination, and after hearing counsel on both sides the justice vacated the order made by him for a physical examina-

tion on the ground that it had been imprudently granted. No affidavit, apparently, was made, in answer to the one presented to the justice, disputing the fact of the former examination or excusing the omission to show that fact in the affidavits on which the order for an examination was made. The Fourth Appellate Division of the Supreme Court of New York states that, under these circumstances, it can not say that the order setting aside the former order for an examination was erroneously granted. If it was claimed a second examination was necessary for any special reasons, the facts relating thereto should have been made to appear by the defendant, in the affidavits on which the first order was granted or in answer to the application to set the same aside.

Contract of "Medical Institute" Utterly Void.

The Supreme Court of Washington says that the case of Deaton vs. Lawson was brought to recover money paid under a contract for treatment purporting to be with the officers of a certain medical institute and the physician in charge, apparently signed "S. M. Inst.," which treatment was taken for only a day or two. The findings and entire testimony in the case, however, clearly showed that this was the personal contract of the defendant, who it was found, was not entitled to practice medicine under the laws of the state, not having a license to so practice. The reference in the body of the contract to the medical institute, its officers, and the physician in charge, and the claim of the defendant that he signed the contract as secretary for the regularly licensed physician employed by the medical institute, were but so many pretenses to evade the laws of the state. It was admitted in the pleadings that the medical institute was owned, operated, managed, and controlled by the defendant; in other words, he was doing business under that name. It was further shown that the physician was not a party to the contract, and was in no manner obligated to perform it. It was found, and he himself testified, that he had no connection directly or indirectly with the medical institute, had nothing to do with the making of contracts or the fixing of fees, but was simply employed on a salary. If the claim of the defendant that he signed the contract as secretary for the physician should be sustained, there would be no contract at all, as the record clearly showed that he had no authority in that behalf. Stripped of all subtuges and pretenses, this was neither more nor less than a contract on the part of the defendant to render professional services for the plaintiff, a contract he could not perform without violating the laws of the state. The contract was, therefore, against public policy, and was utterly void. A contract to render professional services is personal and non-assignable. No person can perform or tender performance except the person therein named, without the consent of the other party to the contract. Inasmuch as the defendant could not perform his part of the agreement without violating the laws of the state, there was no consideration for the alleged contract or the payment of the money thereunder, and the plaintiff was entitled to recover the money so paid, so long as the contract remained executory (still to be performed).

Compensation of Health Officers.

Section 2060 of the Kentucky statutes provides that "physicians appointed as health officers for cities, towns and counties shall receive reasonable compensation for their services, to be allowed by the councils, trustees or the county courts," etc. The Court of Appeals of Kentucky says, in Graves vs. City of Paducah, that the health officer is an officer of the city, and must be paid by it. The statute does not fix the amount of his compensation, further than that it shall be reasonable, and be allowed and paid as other city officers' salaries are paid. Perhaps no other officer of the city renders services of such fluctuating and uncertain value as does its health officer. Absence of epidemics and a general disposition on the part of the population to cleanliness of their premises would relieve this officer of the necessity for rendering any services, other than perfunctory. In that event his compensation would doubtless be but little. On the other hand, where there occur epidemics of contagious diseases, requiring the health officer's services to a considerable extent, his compensation would be increased in proportion. It will be difficult, if not impossible.

to show in advance just what such services might be worth. If the municipality charged with their payment fixes in advance a schedule of fees, as it should, or even fixes a sum per annum which would seem to cover the ordinary services rendered or required to be rendered by the health officer, unless it could then be shown that the allowance or salary so fixed is unreasonably small, it ought not to be interfered with, especially after the officer has accepted it throughout the term as payment. In the case of Taylor vs. Adair County the fiscal court had provided a salary of \$40 per annum to the health officer of the county. The Court of Appeals held that such a sum was inadequate and unreasonably small for the services rendered in that case. While it was there said that the fiscal court could not in advance fix the salary of the health officer, the expression was meant to convey the idea that generally it would be impracticable to attempt to do so, rather than that there was want of legal authority so to do. On the contrary, it was conceded that the power to fix the salary in advance not only existed, but that it was expedient that it be exercised in some just form. The city council, not the witnesses, are directed to fix the reasonable compensation for the services rendered. Before an allowance for such services, or the fixing of a salary for that office, not unreasonably small on its face will be set aside, it must clearly appear that the allowance or salary is unreasonable and inadequate. Not by a mere preponderance of testimony from those in the profession as to what is customarily charged for such services by physicians, but from all the circumstances and evidence, it should appear that there has been a palpable abuse of discretion, amounting to injunctive, by the board or tribunal vested with the duty and power of fixing the compensation.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

January 27.

- 1 Problems in the Diagnosis and Treatment of Puerperal Infection. B. C. Hirst, Philadelphia.
- 2* Intestinal Hemorrhage as a Fatal Complication in Amebic Dysentery and Its Association with Liver Abscess. R. P. Strong, Manila, P. I.
- 3* Tropical Liver Abscess. J. M. Coffin, U. S. A.
- 4* Cyst of Kidney Simulating Ovarian Cyst. W. Krusen, Philadelphia.
- 5 Treatment of Pulmonary Tuberculosis in Elmira, N. Y. H. H. Wey, Elmira, N. Y.
- 6 Diphtheria Antitoxin Effective in Scarlatina. J. H. Lopez, Philadelphia.
- 7 Chronic Enlargement of the Tonsils as a Factor in Etiology. C. P. Nelson, Westbrook, Minn.

2. Intestinal Hemorrhage Complicating Amebic Dysentery.—Strong reports four cases in which the fatal termination was due to this complication. The fact that in all the cases large liver abscess coexisted shows, Strong thinks, that a close connection exists between intestinal hemorrhage and the hepatic condition. The idea that the destruction of such large amounts of liver tissue may sometimes bring about serious functional disturbances of this organ and lead to a condition which predisposes to hemorrhage must certainly be considered. While it is probable that more extensive observations will show that fatal intestinal hemorrhage in amebic dysentery may occur quite independently of liver abscess, the cases to which Strong refers seem to show that when hemorrhage occurs in cases complicated with such hepatic disease it is likely to be very severe and that the bleeding is likely to recur. It is possible, also, that the occurrence of multiple intestinal hemorrhages in amebic dysentery occasionally may be of some importance in the diagnosis of liver abscess.

3. Tropical Liver Abscess. Coffin reviews the statistics of the dysentery cases which occurred in Manila from Jan. 1, 1902, to Aug. 31, 1905. There were 1,523 cases, classified as follows: Amebic, 859; catarrhal, 236; dysentery, acute or chronic, 428. Only thirty-four cases were complicated by liver abscess. The history of three cases is given in detail; these patients were operated on, with a mortality of 33.3 per

cent. Coffin concludes as follows: 1. This condition should be known as hepatic amebiasis, the words "tropical" and "single" both being faulty in describing it; furthermore, it is not a true abscess as we understand the same. 2. The ameba coli, Lösch, is the exciting cause. 3. The routes of infection are the portal vein, over the peritoneum from the gut to the liver by ameboid motion, and through the common bile duct. 4. The leucocyte count is comparatively high and always a valuable guide in the diagnosis.

4. Cyst of Kidney Simulating Ovarian Cyst.—Krusen reports a case of simple serous cyst of the right kidney, which from the diagnostic standpoint resembled a cyst of the right ovary with a long pedicle. The cyst was retroperitoneal, and on incision a quantity of clear, colorless fluid was evacuated. The walls of the cyst were very thin and tense and of a transparent bluish color. On examination it was found to be connected with the right kidney, which was considerably atrophied. No odor of urine was detected.

6. Diphtheria Antitoxin Effective in Scarlatina.—Lopez states that in his experience early curative doses of diphtheria antitoxin administered in scarlatina abort the disease, curtail suffering and lessen the risk to the patient, one dose of 2,000 units being sufficient in the average case of sore throat due to bacterial infection to effect a speedy cure. He also finds the serum equally effective in all anginas, be they scarlatina, tonsillitis, quinsy, etc., through neutralizing the toxins and reducing the fever and local congestion which contribute to the patient's suffering and the element of danger. There are no contraindications. Lopez says that it should be remembered that the largest quantities of serum the most severe cases may require, from 20,000 to 100,000 units, are not depressing to the heart, are not attended with any bad results or sequels and are without a single element of danger.

Medical Record, New York.

January 27.

- 8 Etiology, Prognosis and Treatment of General Paresis. J. Collins, New York.
- 9* Therapeutic Value of Warm Moist Air and Hot Dry Air in the Treatment of Diseases of Children. T. W. Kilmer, New York.
- 10* Pseudo-uremia of Childhood. W. H. Birchmore, New York.
- 11* Mice and Pneumonia. E. Paller, New York.
- 12* Obstetric Methods Practised in the Philippines. W. D. Bell, U. S. A.
- 13 Care of the Sick Outside of Institution. B. A. Rosenfeld, New York.

9. Warm, Moist Air in Diseases of Children.—Kilmer advocates the use of warm, moist air in the treatment of children suffering from croup, acute bronchitis, asthma, pneumonia, diphtheria, laryngitis, whooping-cough, tonsillitis, nephritis, sprains and acute articular rheumatism. The apparatus employed by Kilmer consists of a tin funnel chimney; a firepot, containing a Bunsen burner for gas and an alcohol lamp; a water boiler with a cover; a jointed tin tube in two sections with a gauze chamber, and an asbestos tube. It is impossible, says Kilmer, to upset this apparatus. It can be kept going for weeks, if necessary, with no attention save the occasional addition of water. The firepot may be turned upside down and the burner will not drop out. The apparatus may be carried from place to place while lighted, with no danger of setting fire to the house, scalding the patient or burning the hands. The method of using this apparatus for supplying warm vapor or hot, dry air is described in detail.

10. Pseudo-Uremia of Childhood.—According to Birchmore, this disease is rare and its symptoms misleading. In those cases which came under his immediate notice the diagnosis of uremia had been made by skillful physicians. All the cases began with headache and chill in the older patients, with spasms and crying fits in the younger ones, followed by a sleep or lethargy sufficiently alarming to require the attendance of a physician. The skin was dusky or bluish in tinge. The pulse averaged 59, with a temperature of 102.4 and 103.2. In all the cases the pupils were much contracted. A hypodermic injection of sulphate of atropin to stimulate the respiratory center was at once given, and one of strophanthin, in preference to digitalis, to steady the heart. The breathing improved as soon as the atropin began to take effect. When

possible, an effervescing saline cathartic was given, the dose being repeated in half an hour, if necessary; this was followed in every case first by an evacuation of the bowels, and, secondly, by a disappearance of all the symptoms within ten hours. Birchmore is convinced that there are many other cases of indigestion or of faulty digestion in which the poison which overpowers the respiratory center is produced in sufficient quantity to do serious mischief.

11. Mice and Pneumonia.—From experimental evidence, Palier is convinced that the microbe causing pneumonia is very polymorphous, that a similar microbe is found in the mouths of healthy persons and that the microbes found in healthy individuals or in those suffering from pneumonia are not virulent enough to cause pneumonia when injected into animals like the rat, which is not very susceptible to them. On the other hand, these microbes acquire a great virulence when they are passed through a susceptible animal like the house mouse. Palier has named the bacteria in question diplo-lanceo-bacilli-cocci, or, for the sake of brevity, *d. l. b. c.*, instead of pneumococci. He is furthermore convinced that the *d. l. b. c.* which are found in the human being perform a useful physiologic function by preventing the invasion of other microbes and by acting as scavengers of the respiratory tract. For the *d. l. b. c.* to become virulent they must pass through a susceptible animal. Palier found that the house mouse is most susceptible to them, and hence has reached the conclusion that the house mouse is the main cause of pneumonia. Pneumonia is most prevalent in the months of December, January, February and March. At this time of the year there are usually many mice in houses, especially those in which the plumbing is defective and which are in a general insanitary condition. Young mice seem to be especially abundant in the month of March. They are also very susceptible to the *d. l. b. c.* These mice, either through their feces or after their death through their decomposing bodies, spread virulent *d. l. b. c.* which may cause disease in man either by inhalation or by inoculation through an abraded surface.

12. Obstetrics in the Philippines.—Bell says that the belief that the women of semi-civilized races escape many of the pangs of childbirth is certainly erroneous regarding the Philippine natives. The life of the Filipino woman is comparatively short, due to her many pregnancies, much manual labor, insufficient food, and most of all to the crude, brutal and ignorant practices employed as obstetric aids. The two chief procedures used to facilitate expulsion of the fetus consist, first, in a stout band of cloth passed about the woman's abdomen and pulled tight by four persons, who are seated, two on each side of the patient, with their feet against her body; and, second, in a plank six or eight feet long by a foot wide, which is placed across the woman's abdomen, while another person, mounted on the plank, rises on his toes and lets the heels descend forcibly. The birth of the child is followed by the expulsion of the placenta by the above means, and, should the process be delayed, forcible traction on the umbilical cord is made to such an extent as to tear away portions of the placenta, and often large sections of this body are left to find their way from the uterine cavity of their own accord. Weeks and even months later the results of such practice are noticed in the septic conditions which would naturally follow retention of the membranes.

Boston Medical and Surgical Journal.

January 25.

- 14 *Development of Scientific Hydrotherapy. J. H. Pratt, Boston.
- 15 Description of Killian's Frontal Sinus Operation. E. E. Foster, New Bedford, Mass.
- 16 *Study of the Larynx in Tabes. D. C. Greene, Boston.
- 17 Etiology of Lateral Curvature of the Spine. M. Böhm, Boston.

14. Scientific Hydrotherapy.—Pratt declares that scientific hydrotherapy will not be used widely in private practice until it is taught accurately in the schools. In 1902 thirteen of the nineteen German universities gave special courses in physical therapeutics, many of which were devoted to hydrotherapy. In America, on the other hand, not one university gave a similar course. Pratt discusses the physiologic basis of hydrotherapy, the indications for its employ-

ment, and the results that may be expected from such employment. Six cases were cited which illustrate the beneficial results that sometimes may be obtained by hydrotherapeutics alone and combined with other remedial agencies.

16. Larynx in Tabes.—Greene reports the results of examinations made in 60 cases of tabes. These cases were observed with reference, (1) to the proportionate number affected with paralytic and other disturbances of the larynx; (2) to the nature of such disturbances; (3) to the period of their occurrence in the course of the disease. Out of the 60 cases examined, 9 or 15 per cent., presented laryngeal complications; 6, or 10 per cent., showed undoubted paralysis of one or both vocal cords; 7, or 12 per cent., were affected with laryngeal crises, three of these without evident paralysis of either cord, and one presented a jerky movement of the cord in moving from the median line. In regard to the nature of these disturbances, the only form of paralysis which Greene saw was abductor paralysis. Of the six cases, five were unilateral and one was bilateral. These were further divided into three with partial and three with complete abductor paralysis; that is to say, in the former there was marked limitation in the outward excursion of the cord and in the latter there was absolute fixation of the cord in the median position. With reference to the stage of the disease in which laryngeal manifestations appear, Greene found that laryngeal crises, when present, occurred among the earliest symptoms in all of his cases. In two the crises led to examination of the larynx and subsequent detection of the disease of the nervous system.

New York Medical Journal.

January 27.

- 18 *Etiology, Diagnosis and Treatment of Perinephritic Abscess; With Comments on Cases. R. Guiteras, New York.
- 19 Intermittent Exophthalmus. E. M. Alger, New York.
- 20 *Stool Examinations in Starved Children Under One Year of Age. C. G. Kerley and W. C. Campbell, New York.
- 21 Roentgen Treatment of Lupus Vulgaris. J. W. Hunter, Jr., Norfolk, Va.
- 22 Case of Acute Retrobulbar Neuritis Probably Due to Sinusitis. W. Zentmayer, Philadelphia.
- 23 An Epidemic of Measles in Mexico. B. L. Wyatt, San Jose, Tamaulipas, Mexico.
- 24 Massage in Chronic Metritis and Malpositions of the Uterus. G. Norstrom, New York.
- 25 Facts from Coroner's Cases. P. F. O'Hanlon, New York.

18. Perinephritic Abscess.—Of fifteen patients whose histories are reported by Guiteras, the source of the pus was traced to the kidney in fourteen. In one patient he thinks empyema was the cause. One patient at the time was in such a dangerous condition that a rapid incision was made without an anesthetic, and the man was too weak to permit of a careful examination of the abscess cavity, and after the operation he refused further interference. Therefore it is difficult to say whether the abscess in this case was of renal origin or not, but it presumably was, as the patient had a calculous cystitis and pyelonephritis at the time. In the other fourteen cases the kidney was involved. Guiteras thinks that many more cases of perinephritic abscess are due to suppurative renal disease than is generally supposed, a fact which will be proved with the rapid strides that are now being made in renal surgery. Traumatism, exposure and similar influences to which primary perinephritic abscess is attributed are often vaguely given as causes when they are simply coincidences of the active causes of rupture of already existing abscesses in the kidney or neighboring structures. Before the operation is done, pus should be looked for in the common urine and in the separate urine by the ureteral catheter. During the operation the surgeon should try to determine whether the kidney is the source of the pus, and, if not, what tissue or organ is. It is equally as important to discover the road taken by the pus, as it indicates where a counter-opening should be made and the further treatment of the case for complications. Guiteras sums up the elements of success in operations for perinephritic abscess as follows: (a) Early incision and evacuation before the pus has had time to burrow extensively. (b) Thorough exploration, without timidity, opening the kidney and exploring the ureter if need be. (c) Thorough drainage down to the deepest part of the sac by means of large soft rubber drains or gauze, the drain being kept in place until a

well-formed sinus exists down to the deepest part of the cavity. (d) Nephrotomy, nephrostomy or nephrectomy should be performed if indicated at the time of the operation or later.

20. Stool Examination in Starch-fed Children.—This study comprises the observations made by Kerley and Campbell on 57 children, 519 stool examinations having been made. Because of defective technic and errors in the early examinations, the findings in 27 children, comprising 353 examinations, are excluded. The report covers observations on 30 children, 166 examinations having been made. The stools were collected as follows: One-ounce tin ointment boxes, with the child's name pasted on the cover, were given the nurse in charge. A close watch was kept on the children, who were so grouped as to make this possible. As soon as an evacuation occurred a portion of the stool was placed in the tin box and sent to the laboratory. In order to make the test a severe one, raw barley flour was used, which was cooked one and one-half hours. In some cases barley water formed the milk diluent, in others it was given plain as the only nutriment. The method which they found the most reliable and which was used exclusively in the 30 cases was that known as the von Jaksch test. A considerable portion of the stool, a piece the size of a pea or larger, was placed in two drams of water, boiled and shaken, so as thoroughly to disintegrate the fecal particles. A few drops of Lugol's solution were then added and the solution was filtered and cooled. If starch was present, the characteristic blue color appeared. Filtration of the solution appeared to make but little difference as to the delicacy or reliability of the test. In the cases in which starch was not found, several portions of the stool were examined in order to make the examination a thorough one. In 16 children the examinations were persistently negative to starch. In five of these negative cases there was moderate diarrhea and in one severe diarrhea. The remaining eleven children showed sometimes positive, sometimes negative, sometimes red at the different examinations. Among the 30 children, 23 showed a good starch capacity. Of these, 11 had diarrhea, 7 showed poor starch capacity.

Lancet-Clinic, Cincinnati, Ohio.

January 27.

26 *Varicosity of the Saphenous Veins, with Resulting Varicose Ulcer. R. Carothers, Cincinnati.

27 *The Management of Hospitals. A. J. Ochsner, Chicago.

28 *Sepsis. C. E. Ruth, Keokuk, Iowa.

26. See abstract in THE JOURNAL, Jan. 6, 1906, page 66.

27. Management of Hospitals.—Ochsner discusses the functions and scope of the modern hospital and its successful management. So-called diagrams of authority are given for a large hospital, a hospital of moderate size, a small hospital and a medical staff, showing each person connected with the hospital, what his exact position is and who his superiors and subordinates are. With reference to the duration of service of the medical staff, Ochsner says that the plan of dividing the service into four active periods of six years each and then placing the physician on the consulting staff is probably the best. This includes six years of work as interne or two as interne and four as third assistant, six years as junior attending physician or second assistant, six years as first assistant or attending physician or surgeon and six years as chief of the department. After this the service would be in an advisory capacity, without any responsibility, for an indefinite period.

28. *Id.*—Oct. 21, 1905, page 1270.

St. Louis Medical Review.

January 13.

29 Year's Progress in Public Health and Legislation. G. Homan, St. Louis.

January 20.

30 Differential Study of Leucocytes. I. S. Wile, New York.

The Laryngoscope, St. Louis, Mo.

December.

31 *Tympenic Massage: a New Method by Means of Metallic Mercury. J. C. Beck, Chicago.

32 Malignant Disease in the Nose. C. L. Minor, Springfield, Ohio.

33 Two Cases of Rhinoscleroma. E. Danziger, New York.

34 Cyst of the Pharyngeal Tonsil. W. W. Carter, New York.

35 *Foreign Body in the Maxillary Antrum. B. H. Potts, Philadelphia.

36 Bilateral Extradural Abscess Complicating Middle Ear Suppuration Following Typhoid Fever. H. Bailey, Waterloo, Iowa.

37 *Foreign Body Removed from the Right Bronchus; Presentation of Patient and History of Case. C. A. Elsberg, New York.

38 *Elevator, Speculum and Forceps for Use in the Submucous Resection of the Nasal Septum. L. M. Hurd, New York.

39 *New Tonsil Tenaculum. A. G. Bryant, Boston.

31. Tympenic Massage.—The technic of Beck's treatment is as follows: The mercury is heated over an alcohol flame for a time, so as to reach a temperature of 180 F. It is then allowed to cool off sufficiently, after which the tube containing the mercury is introduced into the external auditory canal. The heat is retained sufficiently long to give a treatment in one ear. The patient's head is inclined toward the side to be treated and the tube is fitted tightly into the ear, so that it closes like an otoscope. The tube is reheated to the temperature mentioned and is introduced into the opposite ear. A thorough examination of the tympanic membrane must be made before treatment is instituted, so far as perforations, cerumenal plugs and long hairs are concerned. After the treatment patients are somewhat sensitive as to the retention of some of the mercury, but by shaking the head slightly a little of the mercury will drop out. If some of it should remain in the ear no harm will be done. Beck has treated 261 patients by this method. Of this number not one experienced any bad or unpleasant effects. Universally the patients have declared that the noises in their ears have either disappeared or that they are very much improved. Of the patients that resisted this treatment, Beck was able to find some general condition more than the local ear trouble which was responsible for the tinnitus aurium, such as gastrointestinal or cardiovascular disturbances. In cases in which the condition was principally conduced to the ear, the results were fairly successful.

35. Foreign Body in Maxillary Antrum.—On starting to clean out the antrum, Potts discovered some hard substance, the character of which could not be determined on account of the granulation tissue surrounding it. When grasped with a pair of forceps it was found to be loose, and a piece of hard-rubber pipette, measuring 4.5 cm. in length, was withdrawn. Ten years previously the patient had been smoking a pipe while riding horseback and was thrown. The tip of the pipette he spat out of his mouth and the bowl was found; but, not being able to find the stem, he concluded that it had been knocked to some distance and lost. At the time of the accident there had been considerable bleeding into the mouth and some soreness, which symptoms disappeared entirely within a few days.

37. Foreign Body Removed from Bronchus.—Thirty hours before Elsberg saw his patient, a girl aged 4 years, she had swallowed a pin one and one-half inches long, with its head first. Immediately after she began to retch, vomited some bloody mucus and complained of pain and discomfort in the chest. After a few hours these symptoms disappeared and the child felt perfectly well again. She was kept on a fluid diet and the stools were watched for the pin, but none was found. The child had had no pain in swallowing or other symptoms. With the x-ray the pin could be plainly seen with its head downward in the fifth intercostal space, a little to the right of the median line. On the following day the patient developed signs of fluid in the right chest with signs of consolidation, high temperature and a rapid pulse. The presence of the pin in the esophagus having been excluded by the esophagoscopy, it was more than probable that the pin lay in the trachea or right bronchus. Under chloroform anesthesia the bronchoscope was passed, but the foreign body could not be found. Elsberg then proceeded to do a rapid low tracheotomy, and passed a moderately-sized endoscopic tube through the tracheal opening and into the right bronchus. The shaft of the pin was grasped with slender forceps as far away from the head as possible, and the endoscopic tube then pushed down, the pin being firmly held by the forceps. By means of this procedure the point of the pin was freed from the wall and the shaft of the pin gradually bent into a full view, until the point was swept into the left bronchus. By repeating the procedure the pin was bent on itself, and, with the point and the head both pointing

downward, could be grasped at the angle and easily extracted. A tracheotomy tube was then inserted. The signs in the chest disappeared within two days, the temperature and pulse fell to normal, the tracheotomy tube was removed at the expiration of one week and the wound healed up rapidly.

38. **Elevator, Speculum and Forceps for Use in Submucous Resection.**—Hurd's elevator is a double-ended instrument, the sharp end resembling a Volkman curette, except that the cavity of the spoon is filled with metal, the other end made of copper, blunt and rounded. The flexibility of the copper allows this blunt end to be bent in any way desired. The speculum is to be used after the cartilage has been removed with a Ballenger swivel-knife. The long blade is passed between the membranes and the instrument is held with the left hand, with the long blade uppermost at all times. The down-cutting forceps is intended for use on the anterior nasal spine of the superior maxilla and on the vomer after the cartilage and bone have been removed from above. Hurd says that the advantages of this forceps are that no assistant is required; it will never injure the mucous membrane, as the chisel is liable to do; it keeps the parts well in view and secures a much smoother edge than that obtained by the chisel.

39. **A New Tonsil Tenaculum.**—The points of advantage claimed for this instrument by its originator, Bryant, are (a) simplicity of construction, (b) shortest possible time consumed in adjusting and releasing, (c) non-obscuring of field of vision, (d) leaving operator free to use both hands, (e) adaptation for right or left tonsil, (f) avoidance of injury to patient. The tenaculum is worked by a strong wheel-bearing spring, constant and uniform in action. The tonsil is held by three prongs, two of which seize it at the base, and the third comes in between the two at the apex, giving a secure hold, especially helpful in friable tonsils. The distal arms are locked beyond the range of the uvula and are separated on approximation by a steel block, thus preventing injury to that structure. Neither the wire nor canula of the tonsil-snare can interfere with the hinge of the tenaculum by slipping in between the arms at an inopportune moment. The horizontal convex curve of the shorter arms and the shape and size of the handles leave the line of vision and field of operation unobstructed, which is desirable in those operations requiring the use of the snare. The upper handle is shorter than the lower straight handle and terminates in an open curved projection, on which the thumb rests, assisting in guiding the instrument. The slightest pressure on the handles adjusts or releases the tenaculum. Its length is 21.5 cm.; weight, 113.40 grams.

*Annals of Ophthalmology, St. Louis, Mo.
October.*

- 40 Eyestrain Origin of Epilepsy. G. M. Gould, Philadelphia.
- 41 Treatment of Convergent Squint in Young Children. L. Emerson, Orange, N. J.
- 42 Surgical Treatment of Ptoxis. J. J. Thomson, New York.
- 43 Operation for Sympathetic Soft Cataract, with Remarks on Sympathetic Ophthalmia. J. Hirschberg, Berlin.
- 44 Glioma Retinae. F. Krauss and H. G. Goldberg, Philadelphia.
- 45 Pathogenesis of Spasmus Nutans. A. Schapring.
- 46 Excision of the Superior Cervical Ganglion in Inflammatory Glaucoma. M. L. Foster, New York.
- 47 Operation for the Relief of Cicatricial Orbit. J. M. Ball, St. Louis.
- 48 Pigment Spots in the Cornea. L. Steiner, Soerabaya, Java.
- 49 Hydrophthalmos, Glaucoma and Iridectomy. Schoen, Leipzig.

42. **Surgical Treatment of Ptoxis.**—The technic by which Thomson has obtained the best results is as follows: After making an incision through the skin following the upper border of the tarsal cartilage, and extending completely from one end of it to the other, the skin should be completely separated from the underlying orbicularis as low as the ciliary margin and as high as the orbital arch. This extensive dissection is necessary in order to give room and freedom for the subsequent steps of the operation. Two vertical incisions are then made through the orbicularis muscle, one on either side of the tendon of the levator, right down to the tarsal cartilage below and as deep as the conjunctiva above it. The portion of the orbicularis between these incisions, together with the tendon of the levator, is separated from the conjunctiva as far back as possible. When the dissection is carried upward about three-quarters of an inch, the cellular space between the orbicularis, where it passes to the orbital margin, and the levator, where

it dips into the orbit, is readily found, and, working downward from here, the two planes of muscle are easily separated and the redundancy in the orbicularis is cut out. The tendon of the levator is then seized with a forceps to prevent it from slipping back into the orbit, and its attachment to the cartilage is cut. As much of the muscle as is deemed necessary is excised; this amount, of course, varies according to the degree of ptosis present. Ordinarily between 1½ and 3 mm. should be removed. Three mattress sutures are then inserted into the tendon, one in the center and one near each margin, and the other end of the stitches passed into the cartilage near its ciliary margin. Care is required to get the center stitch placed properly and the lateral sutures equally distant from it. The reason for using mattress sutures is to overcome any tendency the stitches may have to cut out. Silk is the best suture material. It is not necessary to bring the edges of the wound in the orbicularis together, because, owing to the shortening of the levator, they naturally fall in apposition. Thomson thinks it is well to remove a narrow strip of skin before bringing the cutaneous margins together, as otherwise there will be a fullness over the lid for some days. A dry dressing and a bandage are applied; the wound should be dressed daily. No disfigurement results from this operation.

45. **Pathogenesis of Spasmus Nutans.**—Schapring explains the appearance of unilateral nystagmus in spasmus nutans as follows: In early life it easily happens that one of two physically equal retinal images is not perceived and is disregarded by the mind, as is clearly shown in the typical strabismus convergens which appears in childhood. In those children in whom favorable internal and external conditions for the genesis of spasmus nutans are present, it often happens that the central perception apparatus, the mind, directs its attention on the retinal image of only one eye—for example, the left—and disregards that of the right. In consequence of this the impulses of labile eccentric fixation which go out from the center pass only to the left eye. In the age of life under consideration the law of equivalent motor innervation of the eyes does not possess its full force, and a unilateral nystagmus can appear, either in the form that only the left eye oscillates or that this eye oscillates more than the other. Therefore, when unilateral nystagmus accompanies spasmus nutans, the eye which oscillates alone or most perceptibly is to be considered as the "fixing eye," as that one whose retinal image is perceived and mentalized. In spasmus nutans, in addition to the nystagmus there occasionally appears a transitory strabismus, due to a spasm of a rectus or oblique muscle. This muscular spasm is to be regarded as a "confident movement" in no way contrary to the rule.

*Bulletin of Johns Hopkins University, Baltimore.
January.*

- 50 Dr. Garth: the Kit-Kat Poet. H. Cushing, Baltimore.
- 51 Relationship of the State to the Tuberculosis Question. J. P. C. Foster, New Haven, Conn.
- 52 X-Ray Diagnosis of Thoracic Aneurism. F. H. Baetjer, Baltimore.
- 53 Method of Estimating the Osmotic Content of Blood and Other Fluids. C. E. Simon and R. V. Lamar, Baltimore.
- 54 Tropical Splenomegaly. W. E. Musgrave, W. B. Wherry and P. G. Woolley, Manila, P. I.

52. See abstract in THE JOURNAL, Oct. 28, 1905, page 1355.

54. **Tropical Splenomegaly.**—According to the authors, a clinical summary of this symptom complex, as it occurs in the Philippine Islands, shows that it is very closely related to, if not identical with, those forms occurring in other tropical countries, where it is variously known as kala-azar, dum-dum fever, etc. Young people from 15 to 25 years of age seem to be susceptible. The disease is almost invariably ushered in by an attack of remittent or intermittent fever, which clinically resembles malaria or dengue, and is accompanied by enlargement of the spleen. Recurrent exacerbations of fever at irregular intervals occur throughout the course of the disease. This fever is not influenced by quinin, and in the Philippines is recognized by the natives as a "cayana" or "quisig," and is held by them to be a disease distinct from malaria. The laity consider the disease a very fatal one and often of very short duration, but more often chronic, the patient living for several or many years. The spleen usually enlarges quite rapidly, reach-

ing its maximum size in the second or third attack of fever, and then very often no further change occurs, unless the idea of the natives that the organ grows harder is correct. The liver may or may not be enlarged, but when it is that change is secondary to the splenic enlargement. Jaundice, usually slight, but also well developed, is often present, sometimes even in those cases without enlargement of the liver. This fact accounts partly for the muddy, pigmented appearance of the skin and mucous membranes which is so commonly seen. There seems to be a special tendency to involvement of the mucous membranes in this disease. This is shown by the frequent gastrointestinal disturbances, conjunctivitis, etc. The natives say that this disease causes discharges from the vagina and sometimes also abortion. There is also a tendency to hemorrhages in both the mucous membranes and the skin. This tendency may be explained in some cases by the jaundice. Edemas, at first transient and later more marked and persistent, are common occurrences and are more common on the legs and face. Ascites and pulmonary congestion may also be marked. Anemia, emaciation and cachexia gradually develop in nearly all cases. Pain is a frequent but by no means a constant symptom. It is manifested by headache, arthralgia and myalgia, and apparently is more common in the early stages of the disease.

Oklahoma Medical News-Journal, Oklahoma City.

January.

- 55 *Practical Points in Appendicitis. J. C. Morfit, St. Louis, Mo.
- 56 The Doctor and the Dollar. T. A. Stevages, Cancey, Kansas.
- 57 Prayers Can Not Err. R. V. Pearce, Howard, Kan.

55. Appendicitis.—Morfit urges that every patient with an inflamed appendix should be operated on and the irritating or irritated appendix removed, even if not inflamed. There are times, he says, when operation might be deferred, but never abandoned, to advantage. The diagnosis should be made and operation decided on or not in the first six hours after seeing the patient. If twelve or twenty-four hours elapse after the onset of the attack the time of operation is open to discussion. Even in advanced stages, deferring operation to a more opportune time is so fraught with dangerous uncertainties as to make operative measures equally as promising as non-operative. Taking the cases as they come in all stages, the hundred operative cases will give a more flattering recovery and cure percentage than the hundred treated medically. Morfit claims that it is not faulty operative technic, but procrastinating diagnostic technic, that is responsible for most of the mortality.

Journal of Michigan State Medical Society, Detroit.

January.

- 58 Gangrene of the Scrotum. A. W. Hornbogen, Marquette, Mich.
- 59 Uses and Abuses of the Obstetric Forceps. J. J. Mulheron, Detroit.
- 60 *Treatment of Chronic Constipation. J. A. MacMillan, Detroit.
- 61 A Few Results of Roentgen-Ray Therapy. C. George, Jr., Ann Arbor.
- 62 Clinical Hydrotherapy. T. Sizel, Detroit.
- 63 Analysis of 105 Consecutive Cases of Typhoid Fever in Reference to Diagnosis and Treatment with Special Mention of Interesting Cases. R. S. Rowland, Detroit.
- 64 Why Surgical Fixation of a Movable Kidney Will Not Relieve Dyspeptic and Nervous Symptoms. C. D. Aaron, Detroit.
- 65 Indigestion in Infants the Most Frequent Cause of Summer Diarrheas. C. Douglas, Detroit.

60. Treatment of Chronic Constipation.—MacMillan experimented on dogs to observe the effects of different agents on peristalsis. To determine the effect of distention on the colon, the dog was anesthetized with chloroform and the abdominal viscera well exposed by long longitudinal and transverse incisions. The colon was immersed in normal saline solution at about 100 F. A collapsed thin-rubber bag was then inserted through the anus and made to rest in the rectum or colon. This bag had a tube attached for the purpose of inflation. By these means any degree of distention of the rectum or colon can be obtained readily. The presence of the uninflated bag in the bowel produced no contraction. Moderate distention was followed, after a length of time, varying in different dogs and in different parts of the bowel, by waves of contraction. Usually the contraction was seen to begin immediately above the bag, but occasionally it was first seen at some distance. As distention was increased the peristaltic contractions followed more rapidly, and wave after wave propelled the bag along. These contractions continued, even after the distention

had ruptured the bowel. In most cases strong contractions of the abdominal muscles accompanied the peristalsis when it had reached a certain strength. MacMillan concludes that these experiments demonstrate that distention of the bowel induces normal effective peristalsis.

New Orleans Medical and Surgical Journal.

January.

- 66 *Simple Bandage for Fractured Clavicle, Particularly in Children. B. A. Colomb, Union, La.
- 67 Case of Esophageal Stenosis. J. T. Halsey, New Orleans.
- 68 Case of Acute Tetanus. P. E. Beshet, New Orleans.
- 69 Amputation of the Cervix Uteri for Hemorrhage Complicating Chronic Metritis. C. J. Miller, New Orleans.
- 70 Preventive Medicine. O. Kohnke, New Orleans.
- 71 Necessity for National Quarantine. E. P. Lowe, New Orleans.
- 72 A Lymphoid Tumor of the Larynx Removed by Partial Laryngectomy. G. Kling, New Orleans.
- 73 Voluminous Papilloma of the Nasal Cavity. G. Kling, New Orleans.
- 74 Abuses Arising from Thoughtlessly Issuing Certificates of Accident to Injured Parties, etc. E. D. Martin, New Orleans.
- 75 Prevalence and Diagnosis of Yellow Fever in the Colored Race. C. M. Brady, New Orleans.
- 76 Diagnosis of Mild Yellow Fever and Some of Its Difficulties. Id.
- 77 State Quarantine. A. Nolte, New Orleans.
- 78 Case of Uncinariasis. C. C. Bass, New Orleans.
- 79 Three Cases of Intussusception. J. M. Batchelor, New Orleans.
- 80 Primary Nasal Diphtheria. H. Dupuy, New Orleans.

66. Simple Bandage for Fractured Clavicle.—The bandage employed by Colomb is made from one piece of stout cloth, three yards long, for a child and from two and one-half to three inches wide. Enough of the bandage is folded over at one end to extend the full length of the forearm. This is sewed along the bottom, the lapel end and greater portion of the top, leaving an opening into which the band and arm can be passed easily. Once the arm is inside the sleeve, a safety-pin closes the opening more snugly around the arm, so as to prevent its removal. A few safety-pins where the folds cross make the bandage secure.

Southern California Practitioner, Los Angeles.

December.

- 81 Further Data on the Chest-Index in Tuberculosis. W. Hutchinson, Redlands, Cal.
- 82 Syphilis, Extra-Genital Chancres. R. Williams, Los Angeles.
- 83 Visit to the Barlow Sanatorium, Los Angeles, Institution for the Treatment of Pulmonary Tuberculosis. G. H. Kress, Los Angeles.
- 84 Plouro-Pneumonia or the Toxopah Plague. G. L. Hogan, Los Angeles.
- 85 Quacks and Quackery, and Patients and Proprietaries from a Hygienic View Point. J. P. Booth, Los Angeles.
- 86 Pinsen Light Treatment. A. Soland, Los Angeles.
- 87 Etiology and Pathology of Nephritis. D. Fulton, Los Angeles.

Medical Fortnightly, St. Louis.

December 25.

- 88 Malaria. J. P. Stewart, Attalla, Ala.
- 89 Technique of Surgical Nursing. J. A. Day, Jacksonville, Ill.
- 90 Epilepsy. J. W. Selman, Greenfield, Ind.

Canadian Journal of Medicine and Surgery, Toronto.

December.

- 91 Growth and Organization of the Medical Profession in Nova Scotia. D. A. Campbell, Halifax.
- 92 Tongue-like Accessory Lobes of the Liver and Achylia Gastrica. J. Newell, Watford, Ontario.

International Journal of Surgery, New York.

December.

- 93 Conservative Treatment of the Enlarged Prostate. H. M. Christian, Philadelphia.
- 94 Immediate Detection of Injuries to the Birth Canal Resulting from Childbirth. J. E. Davis, Detroit, Mich.
- 95 Imperative Treatment of Urinary Retention. J. B. Bissell, New York.
- 96 Observations on Appendicitis. L. Sexton, New Orleans, La.
- 97 Treatment of Transverse Presentations. J. R. Hicks, Washington, D. C.

Ophthalmic Record, Chicago.

December.

- 98 Ocular Injuries. M. Black, Denver.
- 99 New Model Chalazion Forceps. L. M. Francis, Buffalo.
- 100 Case of Almost Fatal Poisoning by Homatropin Instilled into the Eyes. T. C. Holtz, Chicago.
- 101 Influence of the Size of the Pupil in Skiascopy and a Pupil Stop. E. Jackson, Denver.
- 102 New Advancement Forceps. M. D. Stevenson, Akron, Ohio.

Archives of Pediatrics, New York.

December.

- 103 Pathology of Congenital Laryngeal Stridor. H. Koplik, New York.
- 104 Case of Acute Leukemia. A. D. Blackader and B. D. Gillies, Montreal.

- 105 Case of Acute Aleukemic Leukemia in a Boy Two and One-half Years Old. A. Hand, Jr., Philadelphia.
 106 Fat Indigestion from a Mother's Milk. W. P. Northrup, New York.
 107 Temperature, Pulse and Respiration Relationships in Infancy and Childhood. M. S. Cohen, Philadelphia.

New York State Journal of Medicine.

December.

- 108 History of the Dispensary Law. E. E. Harris, New York.
 109 Practical Application of the Law to the Dispensaries. W. B. Buck, New York.
 110 Experience of the Special Inspector of Dispensaries. J. B. Prest, New York.
 111 Practical Value of the Investigation of Dispensary Cases. E. T. Divine, New York.
 112 Question of Medical Clinics in Relation to the Dispensary Law. J. A. Wyeth, New York.
 113 Typhoid Fever in Children. L. C. Ager, Brooklyn.
 114 Case of Rarefying Osteitis. E. S. McSweeney, New York.

Western Medical Review, Lincoln, Neb.

December.

- 115 Adrenalin Chlorid as an Adjunct to Cocain in Local Anesthesia. C. Davis, Lincoln.
 116 Diagnosis of Diabetes, with Special Reference to the Preglucosuric Stage. G. H. Brash, Beatrice.
 117 Physiopathological Considerations in Regard to Diabetes Mellitus. L. N. Pickett, Odell, Neb.
 118 Nervous Phenomena of Diabetes. C. P. Fall, Beatrice.
 119 Ocular Complications of Diabetes. J. McGirr, Beatrice.
 120 Dietetic Treatment of Diabetes Mellitus. C. A. Love, Beatrice.
 121 Precautions a Surgeon Should Take Before Operating on Diabetic Subjects. H. M. Heppeler, Beatrice.
 122 Cysts of Anterior Mediastinum. A. P. Condon, Omaha.

Medical Examiner and Practitioner, New York.

December.

- 123 Evidence Yielded by the Statistics of the Middlesex Hospital on the Question of an Increase of Cancer. W. S. L. Barlow and G. Taylor, London.
 124 Cancer as a Cause of Death in Assured Lives. R. H. Fox, London.
 125 Vagus Reflex as a Diagnostic Sign. T. J. Mays, Philadelphia.
 126 Women as Risks. T. H. Bradford, Philadelphia.
 127 Insurability of Females. W. M. Hilton, Waverly, N. Y.
 128 Heredity, Its Consideration in Relation to Risks in Life Insurance. W. M. Hilton, Waverly, N. Y.
 129 To What Extent Should Insurance Organizations Educate Their Insured as to Healthful Living. E. S. Sherrill, Detroit, Mich.

Indiana Medical Journal, Indianapolis.

December.

- 130 Accessory Sinuses of the Skull, with a Brief Reference to Diseases of the Same. J. J. Kyle, Indianapolis.
 131 Lessons for America in the Japanese Army Medical Service. L. L. Seaman.
 132 Sanitation of Japan's Navy. S. Suzuki.
 133 Microscope in Diagnosis. M. Knowlton, Terre Haute.
 134 Intencephalus. M. S. Abbott and F. A. L. Lockhart, McGill.
 135 Retrospection and Introspection. D. D. Grant, Waterbury, Vt.
 136 Need of Sanatoria Treatment for the Consumptive Poor. E. G. Roberts, Fair Haven, Vt.

Journal of Minnesota State Medical Association and Northwestern Lancet, Minneapolis.

December 15.

- 137 Use of Instruments of Precision in the Diagnosis of Unilateral Disease of the Kidney and Ureter. A. W. Abbott, Minneapolis.
 138 Utricularia. M. A. Desmond, Eagle Bend, Minn.
 139 Present Status of Sympathectomy. H. La Motte, Salt Lake City, Utah.

Journal North Carolina Medical Association, Charleston.

December.

- 140 Facts Favoring Early Removal of Fibromyomata of the Uterus. L. Peters, Columbia.
 141 The Wearing of Glasses. S. H. Griffith, Gaffney, S. C.
 142 Thorough Organization a Necessity for the Medical Profession. C. W. Kollock, Charleston.
 143 Gallstones. Le G. Guerry, Columbia.

Buffalo Medical Journal.

December.

- 144 Traction as Applied to Tuberculous Joint Conditions. P. Le Breton, Buffalo, N. Y.
 145 Diagnostic Value of Examination of the Blood. W. A. Cowell, Olean, N. Y.
 146 Masturbation in the Young Girl the Cause of Acquired Sexual Perversion. W. L. Howard, Baltimore.

Louisville Monthly Journal of Medicine and Surgery.

December.

- 147 Hemiplegic Following Labor: Impaction of Bowel Stimulating Appendixes? Tapeworm. T. H. Stucky, Louisville.
 148 Causation of Disease. J. Glahn, Owensboro, Ky.
 149 Extruterine Pregnancy; Typhoid Following Operation. Ap. M. Vance, Louisville.
 150 Thoracic Aneurism. J. A. Ouchterlony, Louisville.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

January 13.

- 1 Unusual Manifestations of Syphilis in the Upper Air Passages. F. Simon.
- 2 *Reality of Enterospasm and its Mimicry of Appendicitis. H. P. Hawkins.
- 3 Pelvic Appendicitis and the Importance of Rectal Examination. G. E. Armstrong.
- 4 Diffuse Peritonitis from Perforation of the Appendix. C. A. Morton.
- 5 Functions of the Omentum. R. Morison.
- 6 Précis of the Conditions Under which Lunatics are Received in Continental Asylums. M. Wylor.

2. Enterospasm and Appendicitis.—Hawkins believes that there are patients whose symptoms are the same after as before an appendicectomy. The appendix being blamed unnecessarily for the existence of the condition for which the operation was performed. He is convinced that this condition is the result of enterospasm and cites a number of cases in support of his theory. The patient suffered from pain of a dull character, and often only from discomfort which becomes exceedingly intolerable after a spell of some weeks or months. The discomfort is relieved by satisfactory action of the bowels, but such an action is difficult to get, and strong, irritating purgatives aggravate it. The stools are commonly narrowed into pencils or ribbons. Pressure or massage will sometimes give relief in the slighter cases, and the hot bath may have a great effect. During the attack there is no desire to go to stool. There is a feeling of discomfort and tightness in the left iliac fossa, and the rectum is empty and thrown into folds, often with spasm of the sphincter. In the worst cases nausea is felt occasionally, but there is seldom any vomiting. In nearly all these cases some part of the colon, more commonly the descending portion, can be felt as a hard cord about the size of a man's forefinger. The bowel above the spastic part does not become dilated. No peristalsis is seen or felt, and the abdomen is seldom distended. Hawkins concludes that owing to the absence of all evidence of organic disease and the long duration of some of his cases, it is exceedingly unlikely that there is any structural change in the intestine or elsewhere, and that these patients are either neurotic or neurasthenic, the abdominal trouble varying directly with the mental state.

The Lancet, London.

January 13.

- 7 Aphasia. B. Bramwell.
- 8 *A. E. Wright's Method of Treating Tuberculosis. W. W. Cheyne.
- 9 A Medley of Surgery. E. E. Goldmann.
- 10 Pathology and Bacteriology of Acute and Purulent Pleural Effusions in Children. J. G. Emanuel.
- 11 Case of Poisoning by Nitro-Benzol. A. H. H. Vizard.
- 12 Strangulation of an Infantile Umbilical Hernia. P. Turner.
- 13 *Two Cases Illustrating Sciatica of Abdominal Origin; Laparotomy. F. W. Forbes-Ross.

8. Tuberculin in Tuberculosis.—Speaking of the accuracy of the opsonic index, Cheyne says that he believes that the result of the examination of the blood depends a good deal on the personal equation, and that it has not the strict mathematical accuracy that one could desire. Another difficulty is the cumbersome nature of the method which makes it impracticable for the busy physician. Cheyne has employed Wright's method in several cases of bone and joint tuberculosis and of genito-urinary tuberculosis, but failed to obtain the expected satisfactory results. His view as regards the position of tuberculin in the treatment of tuberculosis is that it is a most valuable adjunct to the treatment now in vogue, but he is not prepared to abandon surgical measures when these are necessary. In circumstances in which no operation formerly or now would have been considered necessary, tuberculin should be used in conjunction with the other methods employed.

13. Sciatica of Abdominal Origin.—Forbes-Ross cites two cases in which the cause of the sciatica was only recognized when other subsequent, independent and direct symptoms drew attention to, and caused the sufferers to seek advice for, a condition of affairs existing within the abdominal cavity which had not hitherto been suspected as giving rise to the nervous affections. The first case was illustrative of what Forbes-Ross calls the true sensory physiologic reflex, nervous response

of one spinal segment to peripheral irritation existing in the area supplied by another adjacent spinal segment. The second case was a type of the usual pressure symptom case of pressure on both sciatic nerves caused by extensive adhesions of the pelvic organs. In the first case there was found a small, exceedingly tense, central cystic tumor of the left ovary about the size of a small orange. This tumor was removed and there has been no recurrence of the sciatica.

Journal of Tropical Medicine, London.

January 1.

14 *Is Yaws Syphilis? A. Castellani.

15 A Simple and Cheap Rocker for Leishman or Other Stains. P. N. Gerrard.

14. Is Yaws Syphilis?—Castellani reviews the clinical history of yaws and concludes that the symptoms, distribution and pathology of this affection show many points of difference from syphilis, and that the presence of a spirochete of the pallida type is not sufficient evidence to prove that yaws and syphilis are identical. He believes that though they may be closely allied, they are two different diseases.

The Practitioner, London.

January.

16 Convulsions in Typhoid Fever. W. Osler.

17 Treatment of Uric Acid. J. F. Goodhart.

18 Solubility, as Applied to Urine; Theory of Gout—A. Protest.

W. G. Smith.

19 *Physiologic Action of Tea as a Beverage. L. Brunton.

20 Present Position of Dietetics. R. Hutchison.

21 Use and Misuse of Tuberculin. A. B. Harris.

22 Tropical Diseases. R. T. Hewlett.

23 Edema of the Face. A. R. Short.

19. Action of Tea.—According to Brunton, tea may interfere with nutrition in three ways: First, by lessening the feeling of hunger; second, by rendering food less digestible, and third, by interfering with the digestive power of the stomach. At the same time that it thus lessens the nutrition of the body it enables the person to use up much more energy than he or she would be able to do without its aid, and the consequences of this are most evident in the effect on the nervous system. Although tea prevents the sensation of fatigue from being felt for a while, yet exhaustion is going on, both in mind and body, and this usually at length causes disinclination to either mental or bodily exertion, and tends to destroy the power of doing any useful work, either mental or physical, even when the attempt is made. Power of self-restraint is diminished and the person becomes nervous, unduly sensitive, timid and emotional. Not unfrequently ringing in the ears is felt, giddiness, headache, sometimes very severe neuralgia and tremulousness. The tremors seem to be more readily induced by green tea than by black tea, and Brunton has known of one case in which two or three cups of green tea were sufficient to induce marked tremor. Neuralgia is very apt to occur in nervous people who are able ordinarily to take a great deal out of themselves, either by sheer force of will or under excitement, and are thus more liable to reduce themselves below normal than those of more lymphatic temperament. Neuralgia has been described as the prayer of a nerve for better blood and more of it, and tea, by enabling these people to take even more out of themselves than they otherwise could, will render their neuralgia more severe and more continuous. It is evident that a similar result is to be expected in regard to other nervous functions, and that the stability of the brain may be so seriously impaired that the combination of starvation and stimulation, produced by excessive tea drinking, will certainly produce a tendency to mental derangement, even if it does not actually determine its onset. In addition to its action on the nervous system, however, tea is a powerful stimulant to the circulation, and, if abused, will lead to feebleness of the pulse and to palpitation. All teas are not equally injurious. Ceylon and Indian tea are preferred by many people to China tea on account of their aroma and stimulating qualities, and, so long as they are taken in moderation and prepared in the right way by simple infusing for two or three minutes, and then pouring the water off from the leaves, they will suit healthy people very well. Whether on account of the higher proportion of tannin they contain, or some other reason which we do not yet know, they are not so good for weak digestions as China tea, which, especially if it is prepared in the way just recommended, by infusion for two or three minutes only, is less

likely to cause dyspepsia than other kinds of tea. The physiologic action of tea is usually attributed almost entirely to the alkaloid, theine or caffeine, which it contains, but Brunton does not think that this can be the case because green tea, which contains no more of the alkaloid than black tea, has a much more powerful effect on the nervous system, an effect which can not be explained by the somewhat larger proportion of tannin, and must, he thinks, be due to some other constituents in the leaf. Green tea and black tea are not obtained, as many people suppose, from different varieties of the plant, but only differ in their method of preparation; the leaves which form the green tea being roasted in a pan shortly after they are plucked, while those that form the black tea are allowed to undergo a form of fermentation before roasting. Brunton sums up his paper as follows: Tea when properly prepared, and taken in moderation, is both useful and agreeable. When taken in too great quantity, or along with meat, when too strong when infused too long, or still more when boiled or stewed, it is apt to produce digestive troubles. When taken in excess it may produce nervous symptoms of the most serious character, and facilitate, if it does not actually produce, mental degeneration.

Bulletin de l'Acad. de Médecine, Paris.

24 (Year LXX, No. 1.) *Etude du tetanos dit médical ou spontané. Influence de la chaleur (of heat). Vincent.

24. Atmospheric Influences in Tetanus.—Vincent announced in 1891 that the microbe of tetanus does not flourish in the living organism unless it encounters special conditions which favor its proliferation, such as the action of chemical or microbial toxins, mechanical changes in the tissues, hemorrhage, etc. He now announces that exposure to heat is one of the most potent influences that can favor the proliferation of the germs of tetanus. A young man succumbed to acute tetanus, but nothing could be discovered to explain the origin of the infection. There were no bruises or history of any accident. It was learned, however, that about a week before the first symptoms the young man had suffered a heat stroke after prolonged exposure to the sun. Vincent assumed that this heating of the body had been the condition which enabled the tetanus germs to proliferate, and experiments with animals confirmed this view. Guinea-pigs injected with a small amount of tetanus cultures did not exhibit any symptoms unless the animals were placed in the incubator at a temperature of 104 F. They were removed from the incubator when their temperature reached 107. In a few hours the temperature had returned to normal, but two or three days later, while the controls were and remained healthy, the animals which had been subjected to heat developed symptoms of tetanus and died with symptoms suggesting tetanus affecting principally the viscera. The exposure to heat was followed by the development of tetanus, even when an interval of from thirty to sixty days had elapsed after the infection and before the exposure. The virulence of the germs could not have been enhanced by the comparatively low temperature of 104. The results observed must have been due to the lowering of the resisting powers by the action of the heat. To confirm this theory he exposed to the heat a number of normal guinea-pigs and studied the effect of the exposures on the leucocytes. As soon as the temperature rose to 107 pronounced leucocytosis was always observed, affecting principally the cells most actively engaged in phagocytosis. The changes observed in the phagocytes readily explain the lowered resisting power of the organism and the way in which the tetanus germs proliferate unmolested. The germs multiply rapidly and spread throughout the organism, inducing fulminating symptoms of splanchnic tetanus. The germs may remain absolutely latent and quiescent in the system until allowed to proliferate by the lowering of the resisting powers. The period of incubation in such a case dates only from the moment when the germs began to develop unchecked, not from the time when the germs gained entrance to the body. In discussing Vincent's paper Kelsch remarked that the idea that exposure to heat is able to favor the proliferation of germs in the body may possibly explain why typhoid, dysentery, etc., are more severe in the tropics, and also why France suffers more from typhoid fever than the countries of Europe farther north.

Semaine Médicale, Paris.

25. (XXVI, No. 1.) *Spirochetes, spirochetes et autres micro-organismes à corps spiralé. R. Blanchard.

25. Micro-organisms with Spirally Twisted Bodies.—Blanchard's article is a historical sketch and description of the various forms of spirobacteria and of the trypanosomids. The spirobacteria include the genus spiroplasma, the genus vibrio and also the spirobaccillus and the spirillum. He describes about two dozen varieties of the latter. The trypanosomids include the genus spirocheta, of which he describes twenty-one species; the Schaudinn genus trypomema (hitherto called the *Spirocheta pallida* of syphilis), the genus trypanosoma and the genus trypanoplasma. Comparative study of these various micro-organisms shows the vast differences between the spirobacteria and the protozoan trypanosomids, and also shows how members of both groups are able to adapt themselves to the special conditions of life as a parasite. It shows also the degrees of virulence and the varied rôles they play in human and comparative pathology, and points the way to new fields of research in the field of parasitology.

29. Comparison of the Clinical and Pathologic Anatomic Findings in Cancer.—Pankow found cancerous glands in 38.2 per cent. of the cancer material at his disposal, which included three corpus and sixty-seven cervix carcinomas, all just removed. The ureter was involved in only one case, and then to a very slight extent. It seems able to resist cancerous encroachment. The bladder is also quite resistant. His findings compel him to advocate the necessity for extensive resection of the parametrium in ablation of uterine cancer. The abdominal route is the only one to be considered in such cases. The surgeon should not hesitate, Parker says, to implant both ureters in the bladder, if necessary. In three such cases, with impending uremia, great benefit was derived from resection and implantation of both ureters in the bladder.

Archiv f. Gynäkologie, Berlin.

Last indexed XLIV, page 1365.

26. (LXXVI, No. 2.) Ueber Neubildungen am Genitale bei Zwittern, nebst Beiträgen zur Lehre von den Adenomen des Hodens und Eierstockes (new growths on genitals of hermaphrodites). L. Pick.
27. *Physiologische Versuche an der Gebärmutter in vivo, ihre Vergleichung mit den Versuchen an dem isolierten Uterus und einige allgemeine Ergebnisse (study of living and isolated uterus). E. M. Kurdinowsky.
28. Experimente zur Frage neber den Einfluss der Asphyxie und der Anämie auf die Uterus-Contractionen. Id.
29. Vergleich der klinischen und pathologischen-anatomischen Untersuchungsbefunde beim Carcinoma uteri und ihre Bedeutung für die Therapie. Pankow.
30. Ueber die Einbettung des menschlichen Eies, studiert an einem kleinen Ei der zweiten Woche. (Study of implantation of ovum, Second Week). T. R. Doria.

Beiträge zur Klin. Chirurgie, Tübingen.

Last indexed XLV, page 765.

31. (XLI, No. 2.) *Operative Behandlung von Zwerchfellwunden (wounds of diaphragm). F. A. Suter.
32. Plastische Deckung grosser Hautdefekte am Penis und Skrotum (scrotal skin). sowie am Fuss. M. Pöhl.
33. *Postoperative Ileus in connection with Acute Dilatation of Stomach.—Ueber postoperative arterio-mesenteriale Darmverschluss an der Duodeno-jejunal-Grenze und seinen Zusammenhang mit akuter Magen-Dilatation. H. Zade.
34. *Surgery of Thoracic Part of Esophagus.—Chirurgie des Brusttheils der Speiseröhre. P. Sauerbruch.
35. Unterbindung der Vena jugularis interna (ligation). M. Dünkel.
36. Unterbindung der Längsfraktur der Fibula (cause of longit. anal fracture of the fibula). A. Wittke.
37. *Prinzipien der Peritonitis-Behandlung. W. Nitzel.
38. Behandlung der Patella-Frakturen an Wölfler's Klinik. G. Hoheneuer.

31. Injuries of the Diaphragm.—Suter reports the operative cure of two patients with severe injury of the diaphragm, one requiring also nephrectomy. He has found records of sixty-one cases of stab wounds of the diaphragm in which an operation was attempted and four of bullet wounds. More than 73 per cent. of the patients were treated by a transpleural operation, with permanent or temporary resection of ribs, the mortality being only 5.6 per cent. The mortality in the twelve cases requiring laparotomy was more than 33 per cent., while it was 25 per cent. in the cases complicated by injury of other organs.

33. Gastromesenteric Ileus.—Zade applies this term to the ileus due to obstruction from acute dilatation of the stomach superimposed on chronic dilatation. More or less complete

mesenteric ileus is liable to follow this combination, possibly favored further by relaxation of the abdominal walls or by unusual length of the mesentery.

34. Surgery of the Thoracic Part of the Esophagus.—At the Breslau clinic a special study has been made of the thorax and of the possibilities of surgical intervention since the invention of Sauerbruch's air-chamber for operating under minus pressure. Fourteen patients have been operated on by this technic and the results fully confirm its feasibility. These operations show that the thorax can be opened wide in the air-chamber without disturbing the respiration or heart action, and further that the esophagus can be amply exposed by a transpleural intercostal incision. This incision allows sufficient oversight of the organ for adequate surgical intervention.

37. Principles for Treatment of Peritonitis.—Nitzel concludes from experiences at Frankfurt that the benefits of operative treatment of peritonitis are due to the removal of pus and of the cause of the suppuration and the drainage of abscesses and recesses, while it stimulates the peritoneum to increased resistance. The peritoneum owes its resisting power to its destruction and digestion of bacteria and absorption of the products of inflammation. Opium robs the peritoneum of its resisting powers by holding it immovable and thus preventing the distribution of the infectious material over a large surface. Delay should not be considered when peritonitis is once diagnosed, only excepting the irritation of the peritoneum which accompanies gonorrheal affections of the tubes and certain puerperal affections of the uterus and adnexa. Spontaneous recovery from severe peritonitis is extremely rare. Nitzel believes in copious rinsing of the peritoneum, with ample drainage and counterdrainage. In his hospital a jar holding 150 liters of saline solution, on the floor above, is used to flush the field of operation. The tube and drain are sterilized by steam under pressure through them before they are used. The promotion and maintenance of peristalsis are the chief aims of the after-treatment, and twelve drops of physostigmin salicylate (.02 to .20), by mouth, is preferred by him to subcutaneous use of drugs. From 1,500 to 2,000 c.c. of artificial serum are injected at once after the operation. In the after-treatment anæsthetics are advocated. Absolute repose should be strictly enforced.

Centralblatt f. Gynäkologie, Leipzig.

Last indexed XLV, page 1310.

39. (XXIX, No. 44, November 4.) *Zur Infrasympophysären Blasen-Drainage (of bladder). W. Hanne.
40. Fall von spontaner Uterusruptur bei stehender Fruchtblase (with intact membranes). A. Czerwicz.
41. Karzinom-Entwicklung an einem nach supra-vaginaler Amputation zurückgebliebenen Cervix-Stumpfe (sixth case on record). R. Lumpe.
42. (No. 45.) *Puerperale Selbst-Infektion. F. Ahlfeld.
43. Ueber Biltharia-Krankheit der weiblichen Genitalien. C. Gorchel.
44. (No. 46.) 2 eigene Beobachtungen von Zwillingsschwangerschaft mit heterotopem Sitz der beiden Eier, je eines intra-uterin und extra-uterin gelagert (twin inside and twin outside of uterus). F. v. Neugebauer.
45. Ueber die Entfernung des in der Gebärmutter zurückgebliebenen abgerissenen Kopfes (removal of detached head). Rühl.
46. (No. 47.) Kritische Bemerkungen zu dem Studium des Gebärmutterkreises (of birth). L. Gieb.
47. Cystische Entartung eines bei einer Radical-Operation zurückgelassenen Ovariums (Corpus luteum-Cyst). A. Calmann.
48. (No. 48.) Zur Technik der Pubiotomie. W. Pfeilschicker.
49. Die Bier'sche Stauung in der Gynäkologie (concessive hyperemia). J. Grossmann.
50. *Is Syphilis a More Serious Disease than Gonorrhoea? Ist die Syphilis eine schwerere Krankheit als der Tripper? A. Dykster.
51. Puerperale Selbst-Infektion. H. Nativg.
52. Geburtshelfer-Spekulum (for accoucheurs). Blum.
53. (No. 49.) Zwillinge-Placenta mit einfacher Amnion Höhle (twins; placenta with single amnion sac). W. Pfeilschicker.
54. Ein seltener Fall von Uterus-Sarkom. T. von Wenzel.
55. (No. 50.) Zur Aetiology der Uterus-Analyse. R. Kossmann.
56. Zur Aetiology des Flatus vaginalis (Garrulitas vulvae) (four cases). F. Kosminski.
57. (No. 51.) Ausserfruchtgeb. lebende Drillinge bei Placenta prævia (triplets (living triplets)). A. Czerwicz.
58. Ein neues Verfahren zur operativen Beseitigung von Total-Tropfsteinen. M. v. Holst.
59. Zur Sterilisation von Verbandstoffen (dressings). K. Holzappel.
60. (No. 52.) *Toxice and Fatal Action of Camphor. Ueber giftige und tödliche Wirkungen des Kampfers. K. Hapfel.
61. Eine Wochenbettstunde (abdominal band). H. B. Semmelink (flague).

39. **Infra-symphysis Drainage.**—Hannes relates the particulars of three cases in which the bladder was drained through a tube introduced between the urethra and clitoris after a plastic operation on the urethra. This allowed the urethra to heal undisturbed by irritation from urine or from a catheter introduced into the bladder through the urethra. The bladder was partly filled first with about 100 c.c. of sterile water to determine the permeability of the new-formed urethra. Then an ordinary trocar, about 5 mm. in diameter, was inserted through a small incision in the mucosa about 2 cm. from the opening of the urethra and easily pushed through into the bladder. The trocar needle was drawn out, but the cannula of the trocar was left to serve as a permanent drain. The small hole made by it closed up at once when the cannula was finally withdrawn.

42. **Puerperal Self-Infection.**—Abfeld cites a recent article by Natvig to sustain his assertions that streptococci are found almost regularly in the vaginas of healthy women and that the conditions of child-birth favor the acquisition of pathogenic properties by otherwise harmless saprophytes in these parts. There is always a liability that some of these germs may find their way into the internal genitals and induce self-infection.

49. **Congestive Hyperemia in Gynecology.**—Eversmann reports experiences with local suction applied to the uterus. His apparatus is a glass speculum shaped like a test-tube with a small branching tube near the rounding bottom. A rubber tube connected with this small branching tube has a stop-cock and terminates in the suction pump. The open end of the speculum is applied to the os uteri and a vacuum is produced with the suction pump. The os is sucked far into the speculum and can be seen to be very much congested. He applies this congestive hyperemia for a twofold purpose: to remove the secretions and to stimulate the circulation in the uterus. His experience has been eminently favorable, especially in cases of endometritis with considerable discharge. He applies the suction for half an hour at a time, with intervals of several days, gradually shortening the intervals until the applications are made daily. After five minutes of suction the stop-cock is opened for a full minute. Suction is then applied again, this alternation of suction and normal atmospheric pressure being one of the factors in the treatment. Tough and painful cords in the Douglas pouch also gradually softened and were absorbed in the course of this treatment, possibly owing to the better conditions of the circulation in the parts or to massage from the alternating drawing outward and retraction of the os uteri. He has had no experience yet in the application of this treatment to amenorrhea or as a preliminary to dilatation of the os uteri before artificial delivery. In slight lymphangitis of the breast the results of this congestive hyperemia were remarkably successful, as also in cases of insufficient milk secretion. When the suction apparatus was applied in this alternating technique for thirty minutes twice a day, the previously small amount of milk soon became ample for nourishing the child.

50. **Is Syphilis a More Serious Disease Than Gonorrhea?**—Doktor points out that gonorrhea may cause fatal affections, although the primary gonorrheal cause may have been long forgotten. He cites a number of instances of fatal retention from stricture, prostatitis, nephritis, etc., the result of gonorrhea. He also relates a number of cases of constant illness on the part of the wife, recurring inflammation, weakness, sterility, etc., destructive of all happiness in the home. Syphilis is less insidious and its ravages are confined more to the unmarried and to males, while the ravages of gonorrhea are felt more in the family and by the wives. Both should rank as extremely and equally serious diseases.

58. **Treatment of Total Prolapse of the Uterus.**—Holst's method consists in supravaginal amputation of the uterus, with subperitoneal care of the stump, concluding with fixation of the stump to the abdominal wall. It is applicable only to women near the menopause, but promises well in such cases. As the cervix, not the fundus, is fastened to the abdominal

wall, the walls of the vagina are held up and there is no secondary prolapse of the vagina.

60. **Toxic Action of Camphor.** Hapich reports a death after injection of camphor in an eclamptic patient, and discusses the limits of the therapeutic dosage. Part of the camphor enters into a harmless combination with glycuronic acid in the body and part is exhaled through the lungs. The fraction remaining is what exerts the therapeutic action on the vascular system. He concludes from his research that the fatal dose is about 1 gm. to the pound of body weight of a healthy human being or animal. The toxic dose is a third less. These proportions are less in persons who at the moment of the injection are not able to form or have not already on hand the amount of glycuronic acid necessary to combine with the camphor to form the harmless campho-glycuronic compound. As glycuronic acid is a product of the oxidation of grape sugar, when there is a lack of either grape sugar or of oxygen there will be correspondingly less glycuronic acid, and in such case a smaller proportion of camphor will have a toxic action. This assumption was confirmed by his experiences with twenty out of thirty-five rabbits on which he experimented. Healthy rabbits bore intravenous injection of .08 gm. of camphor without apparent injury, but this amount proved rapidly fatal if they had been fasting, and thus deprived of grape sugar, from six to nine days previously. Similar experiments in which the animals were deprived of oxygen, instead of the grape sugar, proved equally fatal when the camphor was injected, the animals succumbing after injection of .02 or .04 gm. of camphor, from one-fourth to one-half the previously tolerated dose. These findings were corroborated by the effect of glycuronic acid injected at the same time with the camphor. Animals thus injected showed little, if any, disturbances and were soon as lively as ever, while the controls all died. These experiences warn physicians to be cautious in administering camphor to patients whose carbohydrate metabolism is defective, such as cachectic persons or those in inanition, or in severe cases of diabetes or chloral poisoning. On the other hand, great caution is necessary in administering camphor to persons with a deficient supply of oxygen, as in carbon dioxide intoxication, in severe cardiac defects, in advanced bilateral pneumonia, in severe sepsis and to eclamptics. In case of eclampsia and states of psychic excitement, camphor is further contraindicated on account of the fact that its base of action is in the central nervous system.

Deutsche medizinische Wochenschrift, Berlin und Leipzig.

- 62 (XXXI, No. 50.) Behandlung der Scoliose. O. Vulpinus (Heidelberg).
- 63 *Pathogenese des Tetanus. L. Zupnik (Prague).
- 64 Zur Welfschen Krankheit. Knauth.
- 65 Zur chirurgischen Behandlung der puerperalen Pyämie. E. Opitz (Marburg).
- 66 Ein technischer Beitrag zur Finsen-Therapie nebst Bemerkungen über Lupus-Behandlung. P. Viehmann (Hamburg).
- 67 *Eine neue physikalische Behandlungsmethode der Seckkrankheit (seasickness). W. E. Peters.
- 68 Ueber "physiologische" Wund-Behandlung. Esch.

63. **Pathogenesis of Tetanus.**—Zupnik's researches have demonstrated, he thinks, that the tetanus virus acts in two ways: it increases reflex excitability on one hand, and on the other it causes rigidity in the muscles. The virus acts on the muscular system and on the spinal cord. It affects the latter like strychnin, but in the muscles it induces solely rigidity. Both the muscles and the spinal cord receive the virus by way of the blood alone. The practical consequences of these assumptions, which he sustains by the results of experimental research and of clinical experience, are that it is useless to inject antitoxin into the nerves, spinal cord, subarachnoid space or brain, as the virus circulating in the blood can be reached just as well by a subcutaneous injection. Narcotics and the prophylactic avoidance of reflex excitations are the basis of treatment of the increased reflex excitability, but we have still to seek for a remedy that will conquer the permanent rigidity of the muscles.

65. **Surgical Treatment of Puerperal Pyemia.**—Opitz relates a case in which he followed Baum's technique and ligated the different veins as the last resort in puerperal pyemia. The

patient died, but an uncompensated heart affection was chiefly responsible for the fatality. This brings to nineteen the number of cases of puerperal pyemia in which operative treatment was attempted, with six recoveries. In his experience with this affection Opitz has witnessed thirteen recoveries in eighteen cases treated by medical measures alone. Recovery is, therefore, possible without an operation. Nevertheless he regards surgical treatment as a great advantage, only he urges that it should be applied with discrimination.

67. **Vibrating Chair as Preventive of Seasickness.**—Peters describes an electric chair which is being tested on ocean steamers as a preventive of seasickness. The seat of the chair is in constant motion, resembling the jolting of an automobile. This prevents the perception of the motion of the boat, it is claimed. His experience has been rather encouraging with it, although he suggests certain modifications.

Jahrbuch für Kinderheilkunde, Berlin.

Last indexed XLV, page 330.

- 69 (LXII, No. 4.) Morphologische und biologische Untersuchungen über die Darm-Bakterien des Säuglings (bacteriology of infants' intestines). E. Moro.
- 70 Biologische Untersuchungen über die Milchverdauung beim Säugling (digestion of milk by infants). F. Hamburger.
- 71 Gastric Digestion in New-born Nourlings.—Magenverdauung bei neugeborenen Brünstkindern. Id. and B. Speck.
- 72 Post-mortem Study of Tuberculosis in Children.—Tuberkulose im Kindesalter. Id. and E. Sluka.
- 73 Scurvy-Krankheit. C. v. Pirquet.
- 74 Bakteriologie und Epidemiologie der Ruhr im Kindesalter (dysentery in children). L. Jechle (Escherich's clinic, Vienna).
- 75 (No. 5.) Absorption of Fat. Untersuchungen über Fettresorption. An Grund der chemischen Zusammensetzung der Fette. A. F. Hecht, (Ibid.).
- 76 Die postskarlätinöse Lymphadenitis. B. Schick (Ibid.).
- 77 Serum-Therapie und Blutreinigung (study of the blood). H. Koopff.
- 78 Resultate der Anwendung des polyvalenten Antistreptokokkenserums von Moser. I. Winocourff (Odessa).
- 79 Zur Biochemie der Milch (of milk). F. v. Szentaghy.
- 80 (No. 6.) Knochenveränderungen beim Skorbut (bone changes). E. Looser.
- 81 Zur Kenntnis der Ekzem-Todes-Fälle (deaths). J. Bernheim-Karrer.
- 82 Chronische Magen-Darm-Dyspepsie im Kindesalter (in children). R. Schütz.
- 83 Zur Etiologie und Klinik des Stridor inspiratorius congenitus. L. Ballin.
- 84 Ein neues Symptom bei Tetanie des Kindesalters.—das Tetanie-Gesicht (tetany face). A. Uffenheimer.
- 85 Apparat zum Kochen oder Pasteurisieren von Kinder-Milch (milk). E. Müller (Berlin).

72. **Postmortem Study of Tuberculosis in Children.**—This communication from Escherich's clinic at Vienna reports the findings of the prosector, Ghon, in 401 autopsies of children. Of this total, 160, or 40 per cent., were found affected with tuberculosis. Death was due to the tuberculosis in 100 per cent. of the young infants, in 68 per cent. of the children up to 2 years old, in 65 per cent. of the children up to 5 and in 47 per cent. of the children between 10 and 14. The tuberculosis was found active in 40 out of the total 160, inactive in 10 and healed in 27. No signs of healed lesions were found in any children under 3, but the proportion increased progressively with this age upward to 47 per cent. of the 17 children between 10 and 14. The findings confirm those of Naegeli and others in regard to the increasing frequency of tuberculosis as the individual increases in years, with a corresponding decrease in the mortality of the tuberculosis. Fully 60 per cent. of the children who died from tuberculosis succumbed to tuberculous meningitis, but in 64 out of 67 such cases the meningitis was secondary to tuberculosis of some other organ, subacute or acute general tuberculosis. In only 27 per cent. of the entire 110 cases in which death had been due directly to the tuberculosis were the lesions those generally observed in adults; all the others were those of tuberculous meningitis (60 per cent.) and milary tuberculosis. The mesenteric glands were found affected in only four instances. There were no indications of primary intestinal tuberculosis in any case. The article compares the findings recorded with those of Naegeli and other investigators, the concordance in the results being striking.

76. **Post-scarlatinal Lymphadenitis.**—Schick describes the glandular affection which frequently appears in the third or fourth week after the first symptoms of scarlet fever. The glands involved are in the submaxillary region, and their in-

flammation and tumefaction are the most frequent cause for the recrudescence of fever during convalescence. This lymphadenitis enables a retrospective diagnosis of scarlet fever. The treatment found most effectual was cold applications at first, with hot applications later if the affection progresses, and incision in case of fluctuation. The general health does not seem much affected, frequently in marked contrast to the high fever. In a few cases the child seemed sick, the symptoms suggesting, to a certain extent, those of scarlatinal nephritis. He has observed seventy-one cases of the lymphadenitis in 990 patients with scarlet fever during the years 1902-1905. Usually but one of the submaxillary glands is affected.

81. **Sudden Death in Course of Eczema.**—Bernheim-Karrer discusses the mystery of the sudden deaths of children with eczema of the scalp and face. In one such case the autopsy revealed an unsuspected streptococcus focus in one lung, the action at a distance of these germs having induced slight endocarditis and pleural effusion. In another case an infant with eczema exhibited attacks of heart weakness, possibly from a similar action of the germs on the heart muscle. Another child of eleven months was in his care for recurring eczema of the scalp and face. The child was brought to him, after two months' absence, on account of a new patch on the cheek, and he was impressed with the dull look in the eyes, but nothing abnormal could be detected in lungs or heart. The cervical glands were swollen. He ordered a salve of ichthyol and zinc oxid. The child seemed unusually quiet and was found dead the second morning. Staphylococci were discovered in the cutaneous lesions and in the internal organs. Their numbers were not large, but it is possible that the eczema may have generated toxins, similarly to extensive burns, which may have induced an actual toxic form of staphylococcus mycosis. This assumption was confirmed by a number of experiments on animals. Infection with the staphylococcus alone did not cause by any means such severe symptoms as when the staphylococcus infection was supplemented by a cutaneous lesion, such as a croton-oil blister. The heart seemed to suffer particularly in these cases. The researches reported emphasize the importance of careful oversight of the heart action in cases of extensive eczema. Possibly the blood pressure might afford useful information.

84. **The "Tetany Face."**—Uffenheimer gives several illustrations of children to show the peculiar expression characteristic of tetany. It may be observed even before any other signs are manifest. The muscles of the face feel the influence of the impending tetany and the face assumes an expression which is the first faint suggestion of the *risus sardonius* of true tetany. He has observed more than fifty cases, his attention being attracted to the children by this tetany face, the application of electric tests or later events confirming his diagnosis. Differentiation at this early stage allowed prompt treatment and cured many of the children without the outbreak of actual tetany, the Chvostek and Trousseau signs subsiding as the children's expression returned to normal. The muscles affected are those innervated by the facial nerve; the face is drawn up and wrinkled like that of a harassed adult, worried and morose.

Münchener med. Wochenschrift, Munich.

- 86 (LII, No. 47.) "Torsion of Tumor in Omentum.—Ueber gedrehte Netzgeschwülste mit und ohne vorgängigen Bruch. Riedel.
- 87 Ants as Carriers of Typhoid Infection.—Ueber die Verschleppung typhöser Krankheiten durch Ameisen und die Pathogenität des *Löffler'schen* Mäuse typhusbakteriums für den Menschen. G. Mayer.
- 88 Beziehung der Wirkung der photodynamischen Stoffe zu ihrer Konzentration (relations between action and concentration of photodynamic substances). A. Jodlbauer and H. v. Tappeler.
- 89 Elimination of Uric Acid in Gout.—Harnsäureausscheidung bei Gicht. Eschenburg (Hoppe-Seyler's service, Kiel).
- 90 Vorgänge der Selbstreinigung im Wasser (self purification of water). Hofer.
- 91 Ueber den Holzmündner Fall von fraglicher Veronal-Vergiftung (poisoning). E. Harnack.
- 92 Increasing Appreciation of Importance of Uterine Myoma.—Die Verschiebungen in der klinischen Beurteilung und operativen Behandlung der Uterusmyome. A. Sippel.
- 93 Retroflexio und Vibrations-Massage. K. Wittbauer.
- 94 Habituelle Obstipation infolge von Dilatation und Senkung des Cecums. P. Schilling.
- 95 Complicationen nach verschlepten eitrigen Appendicitiden. Amberger.

96 *Congestive Hyperemia in Treatment of Inflammatory Affections of Head and Face.—*Behandlung entzündlicher Erkrankungen von Kopf und Gesicht mit Stauungshyperämie.* W. Keppler. (Commenced in No. 45.)

86. Torsion of Tumor in Omentum.—Riedel has encountered six cases of tumor in the omentum complicated by torsion, and thinks that this condition is not so rare as generally supposed. Four of the patients were operated on for assumed appendicitis. In two patients the twisted portion of omentum was in a hernia. In describing the details of these cases and discussing the removal of the tumors after ligation of the pedicle he emphasizes the importance of using catgut—never a foreign material like silk. This is especially important in case of the omentum, as its tissue is exceptionally liable to react with a serous inflammation to the slightest injury. It generally subsides spontaneously, but in case of the presence of a foreign material like silk there is liable to be prolonged and serious trouble. He has had some experiences of this kind, as he relates in detail.

87. Ants as Carriers of Typhoid.—Mayer describes an experience with some laboratory mice which indicates that ants may carry typhoid infection. Ants had access to the cages of some mice infected with mouse typhoid bacilli, and also to some other cages of sound animals. Soon after the presence of the ants was noticed, all the sound animals sickened with an epidemic of mouse typhoid. Plates of culture media over which the ants were allowed to run developed colonies of the mouse typhoid bacilli in a single straight line along the course of the ants, showing that the bacilli must have been retained as bees hold honey material, or else must have been passed in their dejecta. The colonies of other micro-organisms that developed on the plates were in parallel rows, corresponding to the ants' legs. Soon after these experiences Mayer himself developed an acute, brief but quite severe illness from infection with the mouse typhoid bacilli. The latter were found in his stools and urine, and the agglutination test was positive for the mouse typhoid bacilli at 1/250 during the second week. Severe pains in the epigastrium were a prominent feature of the illness, with diarrhea, chills, slight temperature and great depression. He was able to be up and about in five days, but the pains did not entirely subside until the sixth week.

89. Elimination of Uric Acid in Gout.—Eschenburg had occasion to make a prolonged and careful study of the metabolism in two gouty patients—an opportunity which seldom happens, as patients in the gouty category are generally unwilling to submit to prolonged research of this kind. The particulars learned are arranged for comparison with the findings in a healthy control subject. They show that the elimination of uric acid is quite irregular. Alcohol seems to increase its elimination in young persons, but does not have this effect in older subjects.

90. Self-Purification of Water.—Hofer has been making an extensive study of local conditions and announces in consequence that the self-purification of water is a biologic process, depending on the weeds and micro-organisms in the water. A rapidly-flowing stream does not purify itself so readily as a more sluggish stream with a more abundant flora. Where the river at Munich has been walled in and its channel narrowed it does not purify itself, but where it spreads out on a natural-soil bed and weeds accumulate the water soon becomes purified. He advocates draining organic matters into simple natural ponds. Instead of cementing the bottoms of these tanks the natural-soil bottom should be left and as large a surface provided as possible. The ponds should be stocked with appropriate plants and fish, and the waters will spontaneously purify themselves without putrefaction of the organic matters. He cites instances where this has been successfully accomplished for isolated establishments or villages. In one the waters from a factory contained 198 mg. of sugar to the liter, and 100 cm. of such water flowed daily into a pond covering 800 square meters, this residual water being diluted with twice the amount of pure spring water. The sugar was completely destroyed and the nitrogen dropped from 9 to 5 mg. The supply of spring water was cut off after a time and the normal biologic process was thus suspended. The pool is now scarcely more than a cesspool. The fish that can be

raised in a pond where the biologic process of self-purification is going on properly might prove a source of revenue.

91. Medicolegal Aspect of Case of Veronal Poisoning.—Harnack discusses a recent sensational case, in which a physician prescribed for tapeworm 5.5 gm. extract of male fern in capsules with 10 gm. (155 grains) of kamala as the "box powder." The patient took the entire contents of the box and died soon after. Chemical tests indicated veronal poisoning, and it was assumed that the druggist had used veronal instead of the kamala ordered. Harnack's testimony is to the effect that the intoxication was the result of the combination of the action of the male fern and of the drug veronal.

96. Congestive Hyperemia in Treatment of Inflammatory Affections of Head and Face.—This article issues from Bier's clinic at Bonn and gives the details of the successful application to the head and face of his method of inducing therapeutic congestion by constriction. The anatomic conditions, it states, are peculiarly favorable for this treatment in the head and face, as the blood vessels are so numerous and the blood supply so ample that even very slight constriction of the neck will produce the congestive hyperemia desired. This revolutionary treatment of inflammatory conditions has proved especially effective in inflammatory affections of the eyes, ears, nose and accessory cavities. The subjective disturbances were always relieved more or less, the subsidence of the pain being so marked that the patients soon clamored for the "neck garter." As the clinic is surgical, the material was not very well adapted for such therapeutic research, the patients being all in such advanced stages of the disease that they had been referred to the surgeon. The results observed, Keppler remarks, should encourage extensive trials of the technic by ophthalmologists, otologists and practitioners generally, and he is sure that it will soon win friends. He relates the details of a number of cases of acute mastoiditis favorably influenced by this treatment. The results were fully as good, if not better, than from extensive surgical intervention. The affection heals without necrosis of the bone, the same as in osteomyelitis of the long bones treated with the congestive hyperemia in the same way. One patient with suppurative meningitis was also treated; the pain was arrested at once, followed by the rapid retrogression of the objective symptoms. Similarly favorable results were obtained in the single case of extremely severe chorea treated. In some cases of secondary parotitis recovery proceeded rapidly under this treatment and all complications were averted. There has been no opportunity in the clinic to observe the effect of this procedure in primary parotitis. In one case of acute dacryocystitis this treatment alone proved promptly effective; in a second case an incision was made into the process. The cure was strikingly prompt in both cases. Large abscesses in the jaws also healed rapidly under the congestive hyperemia. The constricting band used is of cotton elastic, a little over an inch wide (3 cm. for adults and 2 cm. for children). It is finished with a hook in one end and a series of eyelets close together in the other, so that the band can be hooked tighter or looser. A single layer of muslin inside prevents chafing. The band is hooked at the back, and at this point has a small square of felt to protect the skin from hook and eyelets. The skin can be toughened by being washed with alcohol every day. Children have worn the constricting band for weeks in some cases, but no unpleasant by-effects were ever noted, not even in arteriosclerotic patients. The elastic must be replaced every few days, as it soon deteriorates from the moisture of the skin. The constriction should cause the face to look slightly bluish-red and somewhat bloated; the inflamed part usually shows a localized red fiery edema. The constriction is applied for from twenty to twenty-two hours a day. A remarkable evidence of its efficacy is that the pains are liable to recur as soon as the band is removed. The principle followed was to open an outlet for the secretions, if possible, with a very small incision, and then to apply the constricting band. An incision much smaller than under other circumstances answers the purpose, the congestive hyperemia completing the task. The process heals without the destruction of the bone and soft parts, which has hitherto been supposed inevitable. The incision is made at once, without waiting for fluctuation, and the

abscess or other inflammatory affection is aborted or rapidly heals. The ideal for therapeutic congestive hyperemia, however, is to apply it at the very first indications of trouble.

Zeitschrift für Geb. und Gynäkologie, Stuttgart.

Last indexed *LVI*, pages 1124 and 1136.

- 97 (LVI, No. 2.) Eine durch Vincent'sche Bakterien verursachte Puerperal-Erkrankung. K. Schmidheiser.
- 98 Ueber Vulva-Affektionen und ihre gynäkologische Bedeutung (Schwellsdrüsen-Karzinome). II. Ruge.
- 99 (Schwelling und Bedeutung des Streptococcus pyogenes in der Bakteriologie der Uterus-Lochien normaler Wochenrinnen. F. Schenk und A. Schell.
- 100 Erfahrungen über dilatierende Operationen in der Geburtshilfe. Hammerschlag.
- 101 Spontanheilung des Chorion-Epithelioms. D. v. Velits.
- 102 Teratoma peritonei mit ausgetretenen Disseminationen. C. Fleischmann.
- 103 Spontaneous Injuries of Vagina During Delivery.—Zur Lehre von den spontanen Geburtsverletzungen der Scheide. A. Sitzenfrey.
- 104 *Malignant Tumors in Abdominal Walls After Removal of Benign Ovarian Tumors.—Entstehung maligner Bauchdeckentumoren nach Entfernung gutartiger Eierstocksgeschwülste. O. Polano.

99. Streptococci in the Lochia of Normal Parturients.—Schenk and Scheib report that about a third of normal parturients harbor pathogenic streptococci in the lochia, virulent for mice and rabbits. They examined 100 normal parturients and found positive results in a third from the seventh to the ninth day. Before this time the discharge is almost always sterile—that is, as late as the fifth day. They review the articles that have previously appeared on the subject and discuss the reasons why the streptococci do not cause trouble in these cases, without coming to any definite conclusion.

101. Spontaneous Cure of Chorioepithelioma.—In one of the two cases described, the microscope revealed the elements of a chorioepithelioma in the scrapings of the uterus. A mole had been diagnosed and masses removed from the uterus on several occasions. Recurring hemorrhages finally proved fatal. Velits believes that if the entire uterus had been removed early the patient might have been saved. She was a xvi-para, with a history of three abortions. The second patient was a younger woman, a v-para, with two abortions. The diagnosis of a mole was confirmed by removal of necrotic masses from the uterus. The symptoms were very severe, but the microscope failed to reveal any evidences of chorioepithelioma, and before long the patient had entirely recovered. The microscope is the test for malignancy in these cases.

103. Spontaneous Injury of Vagina During Delivery.—Sitzenfrey reports a case in which the spontaneous delivery of a rather small child caused, under his eyes, a rupture of the vagina, of the floor of the pelvis and of the perineum. Notwithstanding all his efforts at hemostasis, the hemorrhage was so severe that the patient succumbed.

104. Cancer in Abdominal Wall After Removal of Benign Ovarian Tumors.—Polano has had a case of this kind, of which he relates the details, with illustrations. He has found records of seven similar cases in the literature. He admits four explanations of the phenomenon. The general assumption at present is that the benign tumor cells transplanted into the abdominal wound undergo cancerous degeneration in the new culture medium. There is also always a possibility that the ovarian tumor may have been malignant; also that an ignored cancer in the stomach, intestine, uterus or elsewhere may induce a metastatic tumor in the abdominal cicatrix. The only other plausible explanation is that the cancer may originate primarily in the abdominal cicatrix.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

HANDBOOK FOR ATTENDANTS ON THE INSANE, with an appendix giving the regulations for the Training and Examination of Candidates for the Certificate of Proficiency in Nursing of the Medical-Psychological Association of Great Britain and Ireland. Fourth Edition. Reprinted, with Revised Regulations. Published by the authority of the Medical-Psychological Association. Cloth. Pp. 158. Price, 50c net. Chicago: W. T. Keener & Co.

THE ANIMAL PARASITES OF MAN. A Handbook for Students and Medical Men. By M. Braun. Third enlarged and improved edition, with 294 illustrations. Translated from the German by P. Falcke, brought up to date by L. W. Sambon, M.D., and F. V. Theobald, M.A. Cloth. Pp. 453. Price, \$5.00 net. New York: William Wood & Co.

DISEASES OF INFANCY AND CHILDHOOD. Designed for the Use of Students and Practitioners of Medicine. By H. Koplik, M.D. Second edition, thoroughly revised and enlarged. Illustrated with 106 engravings and 33 plates. Cloth. Pp. 855. Price, \$3.00. Philadelphia: Lea Brothers & Co., 1906.

TENNESSEE ANNUAL REPORT OF THE BOARD OF MANAGERS OF THE Springfield State Hospital of the State of Maryland, Sykesville, Md., to His Excellency the Governor of Maryland, October 1, 1905. Paper. Pp. 77. Baltimore: Sun Book and Job Printing Office, 1906.

PHYSIOLOGY AND THERAPEUTICS OF THE HARBORAGE WATERS, BATHS AND CLIMATE. Applied to the Treatment of Chronic Disease by W. W. Balm, M.D., and W. Edgcombe, M.D. Cloth. Pp. 300. Price, \$2.60 net. New York: Longmans, Green & Co., 1905.

FIFTH ANNUAL REPORT OF THE NEW YORK STATE HOSPITAL for the Care of Crippled and Deformed Children. For the year ending September 30, 1905. Hospital located at West Haverstraw, N. Y. Paper. Pp. 27. Albany, N. Y.: J. B. Lyon Co., 1905.

A TEXT-BOOK OF PSYCHIATRY, for Physicians and Students. By L. Bianchi, M.D. Authorized Translation from the Italian by J. H. Macdonald, M.B., Ch.B. 106 illustrations. Cloth. Pp. 904. Price, \$6.00 net. New York: William Wood & Co.

DIE HERZLEIDEN Ihre Ursachen und Bekämpfung. Gemeinverständliche Darstellung. By O. Burwinkel. 7-9, vermehrte und verbesserte Auflage. Paper. Pp. 50. Price, 1.20 mk. Munich: Verlag der Aerztlichen Rundschau, 1906.

LECTURES ON TROPICAL DISEASES, Being the Lane Lectures for 1905, Delivered at Cooper Medical College, San Francisco, U. S. A., August, 1905, by P. Manson. Cloth. Pp. 230. Price, \$2.50 net. Chicago: W. T. Keener & Co., 1905.

RELATIONS OF DISEASES OF THE SKIN TO INTERNAL DISORDERS, with Observations on Diet, Hygiene and General Therapeutics. By L. D. Bulkley, A.M., M.D. Cloth. Pp. 375. Price, \$1.50. New York: Reban Co., 1906.

DER ORDNEN DER TRAPPISTEN und die vegetarische Lebensweise. By H. Dr. Suchler. Zweite vermehrte und verbesserte Auflage. Paper. Pp. 25. Price, 60 mk. Munich: Verlag der Aerztlichen Rundschau, 1906.

CHANGES PRODUCED BY INFLAMMATION IN THE CONJUNCTIVA (Hunterian Lectures, R. C. S., 1905). By M. S. Mayon, F.R.C.S. Cloth. Pp. 179. Price, \$2.75 net. New York: William Wood & Co.

TABER'S POCKET ENCYCLOPEDIA MEDICAL DICTIONARY. Edited by C. W. Taber, and associate editor, N. Senn, M.D., Ph.D., LL.D., C.M. Flexible leather. Pp. 418. Chicago: C. W. Taber, Publisher.

HERZSCHWACHE UND NASENLEIDEN. By Dr. med. E. Cholewa. Mit einer Abbildung. II. Folge. Paper. Pp. 22. Price, 1 mk. Munich: Verlag der Aerztlichen Rundschau, 1906.

INFLUENCE OF THE MENSTRUAL FUNCTION ON CERTAIN DISEASES OF THE SKIN. By L. D. Bulkley, A.M., M.D. Cloth. Pp. 108. Price, \$1.00. New York: Reban Co., 1906.

THE PATHOLOGY OF THE EYE. By J. H. Parsons, B.S., D.Sc. Histology. Part II. Cloth. Pp. 770. Price, \$3.50. New York: G. P. Putnam's Sons, 1905.

DIE STELLUNGNAME DES ARZTES zur Naturheilkunde by Dr. Esch in Dendorf. Paper. Pp. 12. Price, 40 mk. Munich: Verlag der Aerztlichen Rundschau, 1906.

KETZERISCHE BETRACHTUNGEN eines Arztes by Dr. Fr. Erhard. Paper. Pp. 68. Price, 1.40 mk. Munich: Verlag der Aerztlichen Rundschau, 1906.

HYGIENE IN DEN BERGEN. By Dr. med. L. Kleinjtes. Paper. Pp. 21. Price, 50 mk. Munich: Verlag der Aerztlichen Rundschau, 1906.

NEW PATENTS.

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Address

THE ESSENTIALS OF SUCCESSFUL PUBLIC HEALTH ADMINISTRATION.*

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At the present time nothing can be more appropriate than a discussion of certain modern views concerning public health administration and the auxiliary factors that go to make such administration a success. While the problem of public preventive medicine would, *a priori*, seem to be easily soluble through the employment of well-established principles, it is found by actual experience to be beset with difficulties, many of which would not exist were there a more intimate acquaintance, on the part of all concerned, with the requirements of the work.

PLEA FOR PROFESSIONAL CO-OPERATION.

With an audience of this character it is perfectly warrantable to assume that success in public health work is not only desirable, but actually demanded, and to expect, therefore, from each individual such co-operation as lies within his power to give. Proceeding on that assumption, it is my purpose to indicate in the course of these remarks the manner in which I believe this demand may best be met.

It is an unfortunate fact that many physicians, as well as laymen, regard the problem of public preventive medicine as soluble through the inscription on the statute books of specific laws, and the appointment of boards whose duties it shall be to see that such statutory regulations are enforced. As a matter of fact, such a combination represents only the nucleus about which are assembled the various accessories that together constitute the machinery which, according to the perfection of its organization and the smoothness of its running, promises success or failure to the undertaking.

You have only to reflect for a moment on the objects and aims of public health organizations to realize the impossibility of progress when the hands of those responsible for administration are tied by inflexible laws on specific topics, and when the only assistance available for the correct conduct of the work is that officially supplied. You have only to consider the manifold ramifications of the problem to realize how impossible it would be for any community to secure and support a corps capable of collecting all the data essential to a full understanding of prevailing conditions. Yet the collection of such data is of fundamental importance to the accurate performance of the duties for which the authorities are held responsible. In what manner, then, is the deficiency met? It is met by pressing into service those

of the community who, by virtue of their calling, possess the knowledge needed by the authorities, i. e., by requesting the medical profession to co-operate to the extent of prompt notification of all matters bearing on the public health that come to their notice in the course of the day's work.

It may never have occurred to you that, as practitioners of medicine, you are in affiliation with a department of health. It is true your names do not appear on the list of municipal employes, and there are no monetary compensations reaching you at fixed periods as agreeable reminders, but you are, nevertheless, a part—a most important part—of that branch of the administration, and have been so since the date of your registration as practitioners in this commonwealth. In evidence thereof you have supplied to the authorities information of vital importance to the detection and isolation of dangerous diseases; you have given to them substantial support in efforts to enforce regulations aiming to eliminate such diseases, and by your example and precept you have helped in bringing the public to understand and appreciate that the concerted action of yourselves and your colleagues in authority is always for the best interests of the many, even though at times it may seem to bear hard on the individual.

I anticipate no dissenting voice when I say that the most important ally of the public health authorities is the medical profession, nor do I fear contradiction when I maintain that allegiance is of the highest value only when willingly given for intelligent reasons.

NEED OF DISCRETIONARY POWER.

Such being the case, the importance of a clear mutual understanding of the objects and desires of the several arms of this organization becomes at once apparent.

The arbitrary enforcement of cut-and-dried regulations, many of which are obsolete and unsuited to modern demands, by individuals not trained for the service, unacquainted with the advances in preventive medicine, devoid of sympathetic interest in the evolution of medical ideals, and consequently lacking in public and professional confidence, has led too often to an estrangement between the body in authority and those from whom it should receive support, with a result, needless to say, that is fatal to everything in the way of progressive administration.

When we contemplate the rapid advances in knowledge on the manifold phases of disease we are at once impressed with the fact that, excepting such statutory regulations as are of the most general and basic nature, none that can be enacted are likely to prove of permanent service. Some must be revised to meet the modern demands and new ones formulated adaptable to unexpected contingencies. The framing of such rules and regulations as shall be based on common sense, harmonious with scientific requirements and in accord with established sanitary precepts, falls, as a rule, on those

* Delivered before the Philadelphia County Medical Society.

responsible for their administration, but they are rash men who will undertake this task without the support of those who see intimately and constantly many phases of the subject that they, by reason of circumstances, can view only from a distance.

A limited practical experience with public health matters has convinced me that, where a close and intelligent co-operation between the medical profession and the body in authority exists, the interests of the community are best served by giving to those in authority absolute power and by holding them rigidly accountable for the judicious exercise of such power. This may seem a startling proposition, but I can assure you that it is not made without due reflection, nor without discouraging experiences with specific, inelastic statutes unsuitable to newer conditions, but unchangeable without special legislative action.

The regulations formulated by the body in authority should have the force of laws, and it should be possible promptly to amend, modify or repeal them as conditions dictate.

Powers of that magnitude are of advantage in several ways, viz., the enormous responsibilities thus thrust on the authorities insure the utmost care in the framing of regulations; the abuse of such power reacts directly on those misusing it, and its possession by competent individuals permits of the framing of new and the revision or repeal of old regulations as the occasion warrants without the doubt and delay incidental to legislative deliberation.

This idea is not altogether new. In many particulars the original laws creating boards of health and quarantine boards gave to them general powers that are almost plenary, and I am not sure but that in a court of final appeal that power would be found to extend much further than would appear from the casual reading of those laws. However, as there may be some doubt as to the scope of the power conferred by the original laws, as subsequent laws only harmonized with the knowledge existing at the time of their enactment, and as the modern problem of public health, like all other medical problems of the day, assumes more or less of a new aspect with each advance in our acquaintance with disease, it seems wise to make provisions whereby laws may be promptly repealed, amended or otherwise modified to meet the needs of the ever changing subject comprehended by them.

CONDITIONS IN PHILADELPHIA.

When those at present responsible for the administration of public health matters in this city took office they were fully sensible of the responsibilities that were assumed, but were correspondingly ignorant of their powers to carry into effect certain propositions that were regarded both by themselves and their medical advisers as of fundamental importance to the successful and comprehensive performance of their duties.

An examination of the statute books revealed the existence of many excellent laws, some of them as good as could have been formulated at the time, but practically all of such a nature as to limit the authorities to certain specific lines of action. They contain no authorization for the exercise of personal judgment in the treatment of unusual individual cases and no revision or modification is possible without legislative approval.

A brief experience with such circumscribed authority soon demonstrated the impossibility of carrying into effect many modern views concerning the scope of the work, and many trials at modifying the existing laws

made evident the unlikelihood of satisfactory results. It was, therefore, decided to petition the state legislature to confer on the health authorities of cities of the first class in this commonwealth power to make regulations especially referable to the management of contagious diseases, regardless of existing laws, such regulations, when formulated and made public, to become laws susceptible of modification, amendment or repeal, as experience might dictate.

This request was granted, and as a result there are shortly to be put in operation a set of regulations that it is hoped may meet with your hearty support, since in framing them the utmost care has been exercised to safeguard fully the public health without working more than the minimum of hardship and inconvenience on the individual. While these regulations are issued as laws, it is true they are laws that may be modified or repealed as circumstances demand, and this, too, without the doubt and delay incidental to legislative consent. Therein lies the fundamental beauty of the act of 1905, under which we are at present operating. The new regulations differ in a number of particulars from those formerly in force, but this is made necessary by the demands of an ever-changing problem, of a progressive medicine and of an enlightened public.

PREVENTIVE MEDICINE IN THE PAST.

A comparatively short time ago the problem of preventive medicine, in so far as it concerned the health of the public, comprehended the suppression of only a small group of diseases having conspicuously epidemic tendencies. Little or nothing was known of their causation, scarcely more of the manner in which they were disseminated, and the means for their prevention, barring smallpox, were in the main empirical. The mildly contagious diseases, ever present in all populous centers, were not taken seriously; their existence was viewed as a matter of course, and as they were not conspicuously fatal they were accorded no official recognition. Tuberculosis, the most frequent cause of suffering and death, was considered an heirloom, dangerous only to the afflicted individual, and for him hopeless, unless amenable to cod liver oil and climatic treatment. The so-called miasmatic diseases, especially malarial and yellow fevers, were not supposed to bear any direct relation to other cases of the same diseases, and the channel through which such relation is established was scarcely more than suspected.

The important advance of recent years in our knowledge of the natural history of disease, especially as regards causation, modes of dissemination and methods of prevention, constitute one factor in forcing a different attitude toward transmissible diseases in general, while the demand of an enlightened public for a progressive and comprehensive consideration of the subject may be regarded as the other.

MODERN PUBLIC HEALTH ORGANIZATION.

As the successful solution of this problem depends fundamentally on a clear conception of its scope, not only by those officially responsible for its solution, but by those to whom they look for aid, it is appropriate at this time to indicate, possibly in some detail, the objects, aims and accessories of a modern public health organization.

In a word, the primary object of such organizations is to safeguard the public health by direct attention to preventable diseases. According to the tenets of modern medicine and the dictates of common sense, any disease that is transmissible from person to person should be, to

more or less extent, preventable, particularly if its exciting factor and the manner in which it is disseminated be known. If this dictum be admitted, it then becomes the duty of all interested in the prevention of disease to take into consideration not only the comparatively small group of conspicuously epidemic diseases, as formerly, but to enlarge the list to include all types of sickness that are known to be transferable from person to person.

Such is, in fact, the modern tendency. But in the practical application of means to the end the work may be fairly regarded as yet in the experimental stage. At the present time it is customary to consider diseases according to the degree of their transmissibility, those of a dangerous and highly contagious nature being surrounded by safeguards that are not thought necessary to the milder forms, while others are surrounded by no apparent safeguards at all, unless the educational methods practiced in connection with them be given their due value.

NOTIFICATION NECESSARY.

That such preventive measures as are appropriate to the exigencies of the particular type of disease encountered may be taken, it is necessary that all existing cases of transmissible disease be regularly and promptly recorded at a central bureau. Such notification falls to the practitioners of medicine of the community.

Here is encountered the first obstacle to correct administration, though I am glad to say that in this community it has never reached serious proportions. Nevertheless, questions often arise that it is of importance to our mutual understanding to discuss here. The commonest of these questions relates to the desirability of recording *all* types of transmissible disease. The principal reasons for recording all communicable diseases may be briefly summarized as follows: 1, that those in authority shall know definitely and at all times the exact disease situation in the community, otherwise the functions for which they are responsible can not be satisfactorily performed; 2, that local predisposing or exciting causes, possibly accountable for the origin and perpetuation of disease to a greater extent in one part of the community than in another, may be detected and, if possible, eliminated; 3, that immediate measures may be applied to those diseases admittedly demanding the utmost promptitude in official action; 4, that a correct and complete record of location and environment may be kept of those diseases less urgently requiring official supervision; 5, that appropriate educational measures may be employed in connection with the less dangerously communicable diseases; and, 6, that all channels through which disease may be carried from the infected premises may, if possible, be cut off.

The manifold uses made of such data as are here requested would be impracticable for a private practitioner, even were it his duty to utilize them in a comprehensive way. Successful practice of public preventive medicine is impossible without a prompt and correct registration of all types of transmissible disease, and there is no feature of the work more urgently demanding the conscientious co-operation of the private practitioner.

An occasional practitioner has regarded it as a hardship to be asked to report such cases, especially since he receives no compensation for it. Surely such complaint is made without reflection. For sake of argument let us assume that the general practitioner encounters on an average one case of reportable disease a week (a high estimate, I take it). Is it a very great hardship for him to fill out the spaces on a post card, supplied to him

without cost, and mail it at a convenient post box? The whole operation should take but a few minutes at most.

As to the matter of compensation, is he not already paid, in this city at least? Is it forgotten that antitoxin for the treatment of diphtheria among the poor is gladly supplied him without cost whenever he demands it?

Is it forgotten that all of his cases of suspicious sore throat may be examined bacteriologically free of expense?

Is it forgotten that vaccine virus for use among those unable to pay for it is distributed gratuitously, and that vaccinations are performed, free of expense, by experts in the work whenever the request is made?

Is it forgotten that he is aided, again without expense, in the scientific study of supposed cases of typhoid fever?

Is it forgotten that the services of trained diagnosticians are to be had on demand in connection with all cases of supposedly contagious nature, and this, too, at no cost to either physician or patient?

Is it forgotten that the disinfectors of the health department are at his bid and call for all work properly coming within their province?

In short, is it realized that the entire machinery of the Department of Health stands ready to do for the public welfare anything within the scope of their duties that may be requested by a practitioner?

As I see it, there is compensation, and compensation in abundance, for the limited service that is required.

The importance of prompt, concerted action in the matter of reporting disease has been brought to our attention in a very forcible manner within the past three weeks. The incident is of such instructive nature that I venture to detail it. On October 20 the Bureau of Health was informed that there were several cases of typhoid fever in one of the students' boarding houses in the city. Simultaneously with that report came others from physicians practicing in the vicinity of the boarding house. The total number of cases occurring within a few days of one another, and in most instances in the surrounding neighborhood, is thirty-nine, all of which, when the necessary data were obtained, were found to receive milk from the same source. Two brothers supplying the milk were taken, practically from the delivery wagon, to hospitals, both suffering from typhoid fever. Further inquiry developed the fact that both brothers, up to the time of admission to hospitals, had been filling their milk bottles from the original cans by sucking the milk, with the mouth, through a rubber tube, and thus syphoning it from the cans into the bottles in which it was delivered to the customers. It seems to me that this is information of some value to the public. But when I tell you that twenty-four physicians and three hospitals were concerned in those thirty-nine cases of disease, and that none of the physicians reported over two cases, you may readily perceive how unlikely it would have been for us to have discovered the cause of the trouble had there been no notification, or only notification by a small number of the practitioners seeing the cases. There would have been little or nothing to attract attention, for the existence of two or three cases of typhoid fever in the practice of a single physician, in a city in which typhoid fever is disgracefully prevalent, is not apt to be unusual. It is not reports from one or a few men that are wanted; it is reports from all, and the aggregate of reports constitutes the datum that is of real importance to the work.

Inspection.—Complaints frequently reach the health authorities to the effect that their representatives are

officials; that they call at the houses from which cases are reported and ask many questions. The authorities readily assume the responsibility for questions asked, and they take great pains to instruct their representatives to pay due regard to the rights of the family physician when asking the questions. All questions authoritatively asked by an inspector who is detailed to secure data on a reported case have been duly considered and formulated by the responsible heads of the department. They bear on what may be called the sanitary history of the case, and the answers to them are of vital importance to the discovery of sources of infection common to groups of cases. They are not left to the inspector, but are on a printed blank, and embrace so many phases of the subject that were the physician in attendance asked to formulate them or to reply to them he might with justice complain that a hardship was put on him.

The Placard.—In the course of the customary official management of contagious diseases a bone of contention that has ever stood conspicuously to the fore is the use of the placard. It is not my intention to open the debate on this subject, but rather to state a reason, perhaps the most important reason, why the use of the placard is continued in the new as in the old regulations. This is best done by the recital of a personal experience. Some two years ago a medical friend in whom I have the fullest professional confidence, and for whom I have a warm personal regard, called at the bureau in something of a state of mental perturbation. He told me that two of his children were down with scarlet fever; that from the onset of the disease they had been perfectly isolated in the top story of the house; that a trained nurse had been secured to attend them; that there was absolutely no communication between these cases and the remainder of his family, and that he would be personally responsible for the continued quarantine of the cases until they were well if the placarding of his house could only be omitted. As he enjoys a large and lucrative office practice, as I had no doubt of his sincerity, and as I was new at the business, I consented to omit the placard. Within two days I received messages from two of his patients that gave me, I can assure you, a most uncomfortable few minutes. The complainants stated that they would under no circumstances have visited his office had they known of the existence of contagious disease in the house, and that as citizens they demanded of those in authority due notice of where dangerous diseases exist. It is evident that if the placard does nothing else it at least satisfies this reasonable request.

Vaccination.—For the past few years the health authorities of the United States have been greatly exercised over the occurrence of smallpox. The disease has prevailed in varying degree in almost every state of the country. Could there be a less flattering commentary on our vigilance and intelligence? With a method at hand for the absolute prevention of that malady, the responsibility for its existence falls directly on our own shoulders.

You may perhaps be astonished to learn that since the advent of smallpox in Philadelphia, in about 1898, there have been vaccinated at the public expense approximately 600,000 persons. Many of these had never been vaccinated at all, while many of the balance had submitted to the operation at so remote a date as to make doubtful the protective value of the vaccination. This figure includes none of the persons vaccinated by physicians in their private practice.

In addition there has been maintained, also at the

city's expense, a hospital for the reception of a disease that should never exist and would not exist were we to perform unrelentingly our duties to the public. The two items of emergency vaccination and special hospital maintenance constitute a financial obligation that no enlightened community should be forced to assume. If vaccination and re-vaccination be rigidly enforced as a routine measure, I see no reason for the maintenance of expensive hospitals and the support of experts to care for smallpox patients. The few cases that might be imported from beyond our boundaries would cause no alarm, and they could easily be managed in simple temporary, but efficient, quarters.

While on this subject it is important to invite your attention again to an instructive experience gained in the course of official work. The routine medical examination of public school children now practiced by the medical officers of the bureau of health has revealed a practice that, to put it mildly, can scarcely be deemed commendable. Hundreds of children, having no sign whatever of vaccination, but still holding certificates of successful vaccination, have been discovered in the schools. The great majority of the certificates had been signed and issued by the physician at the time the operation was done and without subsequent verification. The exclusion of the child from school as a protective measure is, under the circumstances, imperative, with the result that it loses valuable time, while the physician at fault loses the confidence of its parents. The remedy for this is too obvious to require comment.

Diphtheria Antitoxin.—Scarcely less important than the value of vaccination in preventing smallpox is the prophylactic use of diphtheria antitoxin in combating the dissemination of diphtheria. The protection afforded, though temporary, is nevertheless absolute. In consequence this agent has become a permanent adjunct to the armamentarium of those concerned in public preventive medicine. The statistics of this community do not warrant the opinion that antitoxin is as widely used by physicians for the prevention or even the treatment of diphtheria as its value demands.

Hundreds of cases of typical diphtheria in the fourth, fifth and sixth days of the disease arrive at the Municipal Hospital annually without ever having had a single dose of antitoxin. Many of these cases had been seen by physicians, and yet the Department of Health is making every effort to encourage the more extended use of this agent. It is supplied without cost for use among the poor, and the medical officers of the bureau may be called on to administer the remedy free of charge whenever a physician so desires it. Did we take the pains to inform the public at every appropriate opportunity that the spread of diphtheria throughout a household or from one child to another can certainly be prevented by the injection of a small dose of antitoxin, its use would be more general; fatalities would be decreased in number, and the incidence of the disease enormously lessened.

Further Preventive Measures.—The opinion is growing among those who reflect on the subject that certain highly-contagious diseases may be and often are carried from one house to another by physicians, nurses, clergymen, undertakers and others who may have been in contact with them during the performance of their respective duties.

Such an accident is as little desired by the profession as it is by the laity and by those responsible officially for the public health, and as its prevention necessitates the taking of simple, common-sense precautions, it becomes the duty of those in authority to encourage in

every way all efforts to safeguard the public against such accidents by appropriate recommendations. The regulations authorized by the legislature of 1905 bear on this point—not in the way of rigid requirements, but as suggestions that it is believed will meet with the approval of all who are sincere in their efforts to co-operate in this work.

Hospitals.—Of all the auxiliaries essential to the safe conduct of this work, probably none is of greater importance than properly equipped hospitals. Such hospitals should contemplate not only the reception of cases that are unable to pay for medical care, but of pay cases as well, and in order to insure the use of the hospital by the latter there should be regulations permitting the medical care of such patients by their own private physician if it be so desired.

Such hospitals, for all diseases except smallpox, should be conveniently located, should be modern in equipment, should be attractive to the eye and in no sense suggestive of a pesthouse, and should be manned by men known to be experts in the management of the diseases that they are designed to receive. Every effort should be made to transfer patients suffering from contagious diseases to such hospitals.

Under the best of circumstances, even in hospitals, the complete isolation of certain diseases of this class is attended with difficulty; how much greater then does this become when they are at their homes often under the supervision, during the absence of the physician, of sympathetic though perfectly incompetent friends or relatives. Under ordinary conditions I believe it safe to assume that the progressive incidence of contagious diseases in a community is in direct proportion to the number of foci, i. e. of infected private premises, in that community. The lessening in the number of such foci by transference of cases to hospital is largely in the hands of the family physician. His advice will go far toward the accomplishment of the desired end, and in most cases such advice, I am sure, would be given had we appropriate accommodations for the patients.

In the majority of instances I believe a busy man in general practice would gladly be relieved of the responsibilities and annoyances of patients sick of dangerous communicable diseases were there suitable hospitals for their accommodation. The health authorities want your co-operation in efforts to secure for Philadelphia hospitals for the care of contagious diseases, not makeshifts or pesthouses, but modern institutions commensurate with the dignity of our city and of the utmost importance to the proper control of contagious diseases.

Disinfection.—In still another direction can the private practitioner be of substantial aid in the campaign against disease. There is no longer any doubt of the value of disinfection, cleanliness, sunlight and fresh air in destroying and eliminating contagion. Opinion on this subject is securely established on experimental evidence, statistical proof and wide experience. The routine disinfection and cleansing of premises occupied by the highly contagious diseases is approved and demanded by all, but the case is somewhat different with the less dangerous, though time-consuming, maladies of transmissible nature.

Much could be done toward lessening the incidence of the latter were similar measures taken in connection with them. Many of the laity do not comprehend the desirability of such action. A word from the medical advisor will serve to impress them with the need for it. In connection with the transmissible diseases that run a protracted course (I have tuberculosis in mind) fre-

quent disinfection and cleansing by simple but efficient and appropriate methods will go far to lessen dissemination. As a general safeguard I believe that every house or apartment that has been vacated by a family, regardless of the question of disease in that family, should be disinfected before being let to others. This the Bureau of Health stands ready to do without cost to owner or agent and looks to you for co-operation in this suggestion.

The Creation of Public Sentiment.—Finally, it may safely be said that unless the public comprehends clearly the importance of the end toward which we are all striving, and appreciates the relation of all measures to that end, but little progress can be made. The campaign for the health of the people is essentially a campaign of education. Enlighten the people on all phases of the subject and at every opportunity, and the work will progress smoothly. Keep them in ignorance, surround the subject with mysteries that cannot be comprehended by a plain man, and no laws that are enacted or powers that are conferred will suffice to accomplish the desired result.

Original Articles

NATIONAL QUARANTINE A REASONABLE FUNCTION OF THE GOVERNMENT.

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NEW ORLEANS.

The preservation of the health of the people of the United States is a function, within the scope of the duty of the national government. It bears a close relationship to the efforts put forward by the national government toward preventing the spread of epidemic diseases and finds its counterpart in the methods adopted to prevent the destruction of forest trees in the New England states and the destruction of the fruit industry on the Pacific slope.

The care of the health of its citizens, the keeping out of bubonic plague, Asiatic cholera, and yellow fever are certainly as important as carrying out the measures above mentioned, in which the government has undertaken control.

The suggestions contained in this paper, which will be mostly in reference to yellow fever, will apply as well to bubonic plague in California, to Asiatic cholera in New York, or the isthmus of Panama.

Every other health consideration along our Mexican gulf coast line dwindles into insignificance in comparison with yellow fever and the quarantines incident to the introduction of yellow fever at some of our southern dependencies. Previous to 1900 we thought these yellow-fever outbreaks dependent on fomites (whatever that may mean), but in 1905, in Louisiana, Mississippi and Florida, we went into the fight not blindly, but knowing our enemy and knowing that the sole propagator of the disease was the *Stegomyia fasciata* mosquito. It is needless here to go into details regarding what the world already knows; that we destroyed this insect in New Orleans at an expense to its citizens of one-quarter of a million dollars, made up by private subscriptions, to say nothing of the hundreds of millions lost in trade and commerce by the one hundred different varieties of quarantine, which we were called on to meet. Surely it is not reasonable or fair to suppose that this burden of

keeping out pestilential diseases from the entire United States rests on the citizens of one municipality or state, who are already taxed to the limit in maintaining levees to keep from being drowned by the floods of the great watershed of the West.

Uniformity of detention from infected parts would be one of the results we might expect from national control. Heretofore, each state has been a law unto itself, some adopting five and others six days' detention from points of departure, as seemed most feasible to the various boards of health. With a national law all this could be regulated so that no city, in its greed for trade, could let down the bars so as to let in infection. Because of the close railroad connection between the gulf cities, passengers can land at one port, and within five hours be in the next gulf city, thus nullifying the action of the board which required six days' detention.

Persons leaving Havana on fast steamer can go to New York and return to New Orleans within less than the six days' detention necessary at the New Orleans quarantine station; hence, New York and all other northern ports should really adopt this six-day detention or infection from yellow fever would become liable through the laxness of their quarantine.

If the national government were responsible for the inspectors in all the foreign ports, and if these were properly selected from the Army, Navy, Marine-Hospital Service or any national quarantine service and ordered to report the first outbreak of fever in Mexican and South American countries on pain of dismissal if their reports were not correct, it would keep the health guardians in constant touch with all ports from which infection comes.

A part of the duty of these inspectors might be to educate these countries in the destruction of the infected *stegomyia* mosquito, as on its complete destruction depends the annihilation of the yellow-fever plague, as a case of yellow fever would be incapable of developing the infection in others, without the mosquito to serve as the intermediary host.

It is not beyond the range of possibilities to exterminate the disease by the destruction of all the *stegomyia* and their breeding places; or by the screening for the first three days of all yellow-fever patients in all countries in which the disease is endemic. This would require the concerted action of all governments in South American countries, including Mexico and Brazil.

Compacts between state boards have not been kept as agreed to. To acknowledge the existence of yellow fever in a community is practically to shut oneself out from the outside world, and this is a hard thing to expect of the average community. Quarantine has been so destructive to trade that commercialism and politics have dominated some boards and forced them to take chances with the suppression of the first cases of yellow fever in the vain hope that it would not spread on account of the lateness of the season or the special efforts made to destroy the first infected mosquitoes.

Any city that has experienced the rigors of shotgun quarantine will resist the announcement of yellow fever until there is indisputable evidence of its existence. The first few days of an attack of yellow fever and one of malaria run such parallel courses that all the acumen of the best yellow-fever experts is at times put to the test in differential diagnosis of the severe forms of congestive or estivo-autumnal malaria and yellow fever. Hence, boards of health, in trying to deal honestly with the outside world, are often excusable for delay in coming to a conclusion.

GOVERNMENT INSPECTORS AND PHYSICIANS SHOULD BE REINFORCED BY LOCAL MEN.

It would be nearly impossible to get the best co-operation of the medical men of any community (without which no law would be a success) unless some of the men should be selected from the various communities and accustomed to the diagnosis and treatment of the diseases with which they had to deal. The position of inspector or diagnostician of any health organization is not a happy one.

To declare that there exists in a community a contagious disease, which means loss in trade and all the inconvenience of quarantine, and to stand firm by the diagnosis, to keep track of recurring cases, and to keep a municipality locked up when all its inclinations are to be free, requires the strongest kind of physical and moral courage.

During the epidemic of bubonic plague in San Francisco the lot of the Marine-Hospital Service men was not a happy one. Between locating cases and dodging bricks they led rather strenuous lives.

The uniform of the government, under such circumstances, is required to enable the health guardian to command the proper respect and protection. Men in this service should be entirely divorced from practice; they should be sanitarians and not practitioners.

How few of the ordinary political physicians who get appointments are really trained sanitarians? In many cases these men are selected more from the number of votes they can poll at the next election, rather than from any sanitary acquirements they may possess. Sanitary experts should always be divorced from national and local political and commercial influences.

There is no doubt that the United States uniform commands attention and respect, which is not given to the state official.

People stand in awe when the United States Government is behind a movement. In the recent outbreak in New Orleans, citizens permitted representative inspectors of the government to visit each bedroom in their premises in search of fever, whereas, no such freedom of investigation would have been tolerated for a moment from the state officials without the government uniform. While under ordinary circumstances we do not advocate the invasion of a man's premises, this becomes absolutely necessary in getting correct data in a cosmopolitan population, where to deny the existence of disease is no uncommon rule.

While this is an apparent encroachment on personal liberty and the accepted theory that "one's house is his castle," such stringent investigation is absolutely necessary, in order to be thorough in the suppression of epidemic diseases in cosmopolitan cities. As stated before, the greatest obligation a government owes to its subject is the preservation of the health of its people.

Our ports fronting on the Gulf of Mexico and on the Atlantic and Pacific Oceans should not be expected to bear the entire burden of the protection of the interior states from Asiatic cholera, bubonic plague and yellow fever. New Orleans should not be called on to contribute one quarter million from private citizens, as was the case in 1905, but all the interior states should help to keep out pestilential disease just as if the entire country were invaded by a foreign foe.

This is really the only way to make the burden of quarantine regulation bear equally on all. If all the states keep up separate quarantine stations, medical offi-

cers and paraphernalia, which costs an average of from \$75 to \$100 per vessel quarantine charges for every ship that enters our port at New Orleans, it makes the expense a hundred times greater than if the government or one central head should have charge of the entire regulation of quarantine matters.

To illustrate, Port Limon has had a medical inspector from the Marine-Hospital Service, one from Mobile and one from New Orleans, all watching for suspicious cases of yellow fever. If all this effort had been concentrated under a national quarantine service, removed from all political affiliations, there would have been a great saving in salaries and men.

The destruction of all the stegomyia and anopheles mosquitoes in the United States would mean the abolition of yellow fever and malaria. This contract is certainly large enough to be a government job and should be under its health department, and while we may never live to see this accomplished, a great deal can be done toward this end by draining the marshes and lowlands, thus rendering them suitable for cultivation. At present they are only the breeding places of these disease-carrying insects.

The building of the Panama Canal does not outweigh in importance the destruction of these two varieties of mosquitoes, for, while periodical outbreaks of yellow fever invade the country only in our southern states the anopheles mosquito is getting in his malarial work over nearly the entire area of the United States, and nearly all the time, and malarial fever kills its thousands where yellow fever kills one.

The destruction of anopheles or malarial mosquito is certainly, therefore, a national subject. The *Stegomyia fasciata* variety could be exterminated by oiling and screening cisterns and receptacles holding water and by putting open gutters in cities underground. The swamp mosquito (or anopheles) could be eradicated by draining or filling in our marshes.

It takes a malarial or yellow fever patient and a stegomyia or anopheles mosquito to propagate or to spread either of these diseases.

NON-POLITICAL CONTROL.

In nearly all the states' governments throughout the Union, regardless of which party is in control, there has grown up an office-holding syndicate which at each approaching election farms out or promises political jobs to medical health officers who control the greatest number of votes, regardless of any qualification or experience these men may have in dealing with health and quarantine matters; hence, changes recur with each election period, and health officers are deposed just about the time they are becoming efficient. I do not pretend to claim that a great many worthy and honorable medical men have not been chosen in the past to manage our health affairs; yet the reasonableness of the argument of divorcing all such appointments from a political spoil system is too apparent to need argument at my hands. Health officers should be protected by civil service rules so long as they are efficient and competent to do the work in hand.

As to whether the national quarantine should be under the supervision of the Marine-Hospital Service or under the control of the Navy or Army medical service or under a cabinet health officer, we leave others to argue, but that maritime quarantine should be in the hands of the national government we are thoroughly convinced.

ULCEROMEMBRANOUS ANGINA (VINCENT'S ANGINA) AND STOMATITIS.*

RUTH TUNNICLIFF, M.D.

AND

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CHICAGO.

The disease to which attention is here directed has been described under several names, "ulcerative angina and stomatitis," "ulceromembranous angina and stomatitis," "pharyngitis ulcerosa," "angina diphtheroides," "angina exsudativa ulcerosa," "Vincent's angina," "angina chancriforme," "pseudomembranous angina," "spirochätäenbacillen angina," etc. The name selected for the title of this paper is preferred as designating the principal characteristics of the process, i. e., ulceration and formation of a pseudomembrane. This is not a wholly satisfactory name, as frequently there is no ulceration, a pseudomembrane only being formed, as was observed by us in several cases. Vincent's name is not properly used to designate the angina, since it had been described¹ previous to his studies by French and Russian clinicians (Barthez and Sanné, Simanovsky, Nevejin, Moure and Mendel). All of the cases described are separated sharply by certain clinical and bacteriologic characteristics. On the affected mucous membrane there appear pseudomembranous formations and, as a rule, ulcerations. In the exudate are found fusiform bacilli usually in association with long spirilla.

ETIOLOGY.

Age.—The majority of cases reported have been in young adults between 18 and 25 years of age. Athanasius's cases were in children between the ages of 26 months and 13 years. The patients we observed were children.

Sex.—Males are said to be more often affected than females, according to most observers. This is probably due to the fact that many of the patients have been soldiers and medical students. The majority of our cases were in girls.

Predisposing Causes.—The use of tobacco; trauma of the mucous membrane, as after tonsillotomy; eruption of a wisdom tooth; defective teeth or those covered with tartar; alveolar abscesses; gums of scorbutics; syphilis and mercurial stomatitis are said to predispose to this disease. It is said to follow the acute infectious diseases. Two of the cases studied by us followed scarlet fever, one followed measles and one whooping cough. Twice the condition was present at the onset of scarlet fever. The teeth were covered with tartar in the majority of our cases. Chronic enlargement of the tonsils and adenoids were present once. A previous history of alveolar abscess was obtained in one patient.

Bacteriology.—According to Tarassiewicz, as quoted by Mayer, the first observer to note the association of the fusiform bacilli and spirilla with a disease process was Raubhus. In 1893 he presented cases of ulceromembranous angina in which he demonstrated pointed bacilli and spirilla and his photographs appear to show them to have been identical with those described by subsequent writers. Plant, in 1894, described the organisms

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. References to authors have been omitted, since a complete list of the publications can be found in the following recent articles: H. Beldtze, *Contrib. f. Bakt., Erste Abt., Referate*, 1904, vol. xxv, p. 1; Weaver and Tunniff, *Journal of Infectious Diseases*, 1905, vol. II, p. 446; Berkeley, *Medical News*, 1905, vol. lxxvii, p. 976.

in five cases of ulcerous angina. Vincent, in 1896, described the fusiform bacilli and large spirilla in cases of hospital gangrene, and stated that the same organisms were found in certain anginas of an ulcerative type. Bernheim, in 1897, reported 30 cases of stomatitis and angina, in all of which he had found fusiform bacilli and spirilla. He appears to have been the first to point out the identity of certain cases of stomatitis and angina from the common etiology. Vincent, in 1898, reported a further series of 14 cases of ulceromembranous angina in which the organisms were present. These early reports have been followed by a large number of corroborating observations which testify to the occurrence in preponderating numbers of fusiform bacilli and spirilla in certain cases of stomatitis and angina. A large number of these observations have been recorded in French literature, many in German and American, and a few in English. They indicate the wide distribution of the organisms in question. The infrequency with which the disease has been recognized has probably been due to failure to make direct examinations of the exudate from pseudomembranous lesions of the mouth and throat. Because diphtheria bacilli are not detected with any certainty by such examinations, the custom of depending on cultures quite exclusively has become almost universal, and as the fusiform bacilli and spirilla do not grow to any extent on the medium usually employed for the detection of diphtheria bacilli they have been largely overlooked.

In ulceromembranous anginas, the two bacteria under consideration have been observed in association with diphtheria bacilli by Abel, Baron, Bernheim, Vincent, Niclot and Marotte, Auché, Simonin, de Stoecklin, Gallois and Courcoux and Oberwinter. Abundant fusiform bacilli but no spirilla were found together with diphtheria bacilli in one case by Beitzke and in 6 cases by Oberwinter. The latter author has observed 3 cases of diphtheria in which smears showed almost only fusiform bacilli and spirilla. That the organisms occur in syphilitic lesions of the mouth and tonsil is evidenced by the observations of Baron, Vincent, Freyche, Graupner, Hallopean and Apert, Salomon and Wolff.

Abel was successful in demonstrating both fusiform bacilli and spirilla in healthy mouths, especially between the gums and teeth. Gross found bacilli and spirilla in small numbers on the normal tonsils in 11 out of 13 persons. It is generally stated that the spirilla described in these cases are the *Spirochata denticola* of Miller.

In most of the reported cases, the bacilli and spirilla have been recognized in smear-preparations made direct from the seat of the disease, and in stained microscopic sections of tissues. Usually efforts to cultivate the organisms have resulted in failure. A number of investigators have grown the bacilli in mixed culture. Some also obtained a simultaneous growth of the spirilla.

The present description is based on the study of the organisms from the following sources: Two cases of ulceromembranous stomatitis, 4 cases of ulceromembranous angina, 1 case of pseudomembranous angina, 2 cases of combined angina and stomatitis, 1 case of noma of the cheek, 1 case of diphtheria, saliva and tartar from 18 healthy mouths.

Three of these cases, one of angina and one of stomatitis, and the one of diphtheria occurred in the wards for contagious diseases of the Cook County Hospital in the service of Dr. William L. Baum. Seven of the cases were observed in the Hospital of the Memorial Institute for

Infectious Diseases in the service of Dr. Frank Billings and Dr. Alexander F. Stevenson. To these gentlemen we wish to express our thanks for the opportunity of studying and reporting the cases. Two cases were observed in private practice.

In smear preparations made from the seat of disease, bacilli and spirilla were found which corresponded to those described by previous authors.

The bacilli are long, slender rods with pointed ends, somewhat larger in the middle. Sometimes the ends are rounded and the rod may be rather thick. They are sometimes slightly bent, and occasionally take the form of the letter S. The length is usually from 6 to 12 microns, but sometimes filiform elements of considerable length are encountered. The bacilli are usually scattered uniformly throughout the preparations and often occur as pairs end-to-end, sometimes forming more or less obtuse angles. At times they are seen in irregular clumps, or arranged radially about a common central point, or in rows somewhat similar to diphtheria bacilli. They stain fairly well with Loeffler's solution of methylene blue and anilin-water solution of gentian violet, but best with carbol-fuchsin. With the less intense stains, especially in the larger forms, there are often portions of variable size and shape which stain faintly. No motility could be detected.

Graupner has illustrated the bacilli with stained peritrichous flagella. He found that motility was rapidly lost, even under favorable conditions in 20 minutes. Beitzke explains the varying expressions regarding motility by this fact, but it is better accounted for by Ellermann, who cultivated the shorter, curved forms in pure culture and found them to be motile spirilla.

The bacilli do not stain by Gram's method. The number of bacilli is variable. In the earlier stages of ulceromembranous angina and stomatitis they are most abundant, and they decrease as the process of recovery advances. When the bacilli and spirilla are most abundant, other forms of bacteria are present in small numbers. As the two organisms decrease, the associated bacteria usually increase. In normal mouths the fusiform bacilli were present in small numbers in smears from saliva, tongue and gums. In the case of diphtheria examined, they were so few as to be found only after considerable search.

The spirilla, also spoken of as spirochete, which are associated with the fusiform bacilli in a large proportion of instances are long and delicate, and present three or four turns. They stain uniformly and much less intensely than the bacilli, and in faintly-stained preparations might be overlooked. They do not stain by Gram's method, being much more quickly decolorized than the bacilli. They are usually quite actively motile, but sometimes not. The association of spirilla with the bacilli was observed in all the cases studied. In general they were in numbers corresponding to the number of bacilli. In the mouths of many healthy persons what appeared as the same spirilla were found, especially about the gums, often in enormous numbers.

Most authors believe that the fusiform bacilli and spirilla are entirely distinct varieties of bacteria, and consider that they act in symbiosis, the spirilla serving to enhance the virulence of the bacilli. Vincent, Niclot and Marotte, Baron, Hess, Oberwinter, etc., have observed that those cases of ulceromembranous angina in which only the bacilli are found are milder than those in which the two organisms are associated. In cases in which deeper destructions of tissues occur, the spirilla

are said to be constantly present. In the case of noma from which material for study was obtained, fusiform bacilli and spirilla were present in the nasal discharge from the beginning, and later in the ulcerative lesions of the gums and cheek.

Some observers have maintained that the bacilli and spirilla are different forms of the same organism (Seifert, Perthes, Sobel and Herrman, Krahn). Most authors do not agree with this, but consider them two distinct organisms. After careful examination of many preparations, both direct from man and from pure and mixed cultures, we have been unable to find any appearances which would support these assertions.

From many of the cases the fusiform bacilli were grown in mixed cultures and from a few in pure cultures. They are obligate anaerobes. Details regarding these cultures are to be found in a former publication.¹ The spirilla have never been cultivated except in mixed culture.

Although the organisms described are found in association with characteristic lesions, the proof that they are the essential etiologic factors is not entirely complete. Further study of pure cultures may be expected to shed more light on the subject.

PATHOLOGY.

Athanasia and others divide the affection into three periods: the onset, characterized by congestion and edema, the formation of the false membrane and finally the period of ulceration. In the majority of cases these three periods can not be distinguished.

The primary location of the disease is usually on the tonsil and edge of the gums. It may extend from these locations to the tongue, lips, even the soft palate, pharyngeal wall and cheek. The stomatitis and angina may occur simultaneously, but each is also observed alone. Extension beyond the common primary locations is not the rule. The deposits on the tonsils are usually irregularly oval or circular. It may be bilateral, but is usually unilateral. The pseudomembrane may be grayish, whitish, yellow, yellowish-brown or greenish in color. It is sometimes described as resembling the pseudomembrane of diphtheria, but usually it is thick, cheesy and friable in character. It may be marked by small hemorrhages (Hecht). The false membrane is usually readily removed, leaving a superficially abraded surface which bleeds easily and becomes again covered by an exudate in a few hours. With the progress of the disease, the ulcer may become much deeper, but shows little tendency to extend laterally. Sometimes the destructive process extends more deeply, leading to the destruction of the tonsils, uvula and parts of the pharyngeal wall (Baron, Bruce and others). As a rule, only one ulcer is present, but sometimes several are observed. The ulcers may become confluent, as was seen in one of our cases. They may be round or oval. The borders are pointed and irregular. The floor of the ulcer is uneven and later shows granulating points. They vary considerably in size. Sometimes the ulceration is very superficial or absent. There was none in three of our cases. The anginas have been classified by Vincent and others as croupous or membranous and as ulcerative, according to whether the ulcerative process is slight or prominent. The surrounding mucous membrane is red and slightly or considerably swollen. If the lesion is not observed at the outset, there appears to be no inflammation.

The submaxillary and retromaxillary glands are usually swollen, corresponding to the location of the disease in the mouth or throat. The swollen glands are firm, a

number of small ones usually forming the mass. There is, as a rule, no periadenitis. They rarely suppurate. Raoult and Thiry claim that the glands are rarely swollen except in badly cared for cases, and use this fact as an aid in diagnosis.

Healing takes place slowly after 3 to 45 days. The swollen glands often remain enlarged for some time.

SYMPTOMS.

The symptoms vary much with the severity of the disease. Often there are no symptoms or only slight ones, and the lesion is found accidentally. The following symptoms may occur at the onset: Feeling of dryness or discomfort in the throat, dysphagia, lassitude, restlessness at night, loss of appetite, headache, coated tongue, constipation, sometimes diarrhea, vomiting, pains in abdomen, epistaxis, chills and fever. As a rule, there is little or no fever. One of our cases had a temperature of 103.2 F. In some of the other cases the temperature was high, but there were other pathologic conditions to explain it.

One to five days after the onset the local condition is observed. With it the chief symptoms are pain in swallowing, salivation and fetid breath. These do not always occur. Sometimes the dysphagia is slight. The breath may not be fetid if the case is mild or if antiseptic solutions have been used.

If the gums are affected the teeth may become loose. There may be bleeding from the gums, even if they are free from membrane.

Athanasia speaks of earache and nasal discharge as occurring at this period. Oberwinter also often noticed a nasal discharge and urges the importance of this symptom in young children as directing attention to the throat. We observed a nasal discharge only once. In this case the organisms were found in the nose before they appeared in the mouth.

COMPLICATIONS.

Many observers have found no complications. Albuminuria, according to Simanowsky, is frequent, and Bruce and Simonin and others report cases in which it appeared. We observed it twice, but as the patients had scarlet fever it could be attributed to this disease. Herpes at the beginning was noticed by Baron. Conjunctivitis, which Athanasia gives as a frequent complication, we observed three times. He also mentions anemia as a complication.

The other complications seen by us were gastroenteritis twice and noma of the cheek once.

The following complications have been reported according to Niclot and Marotte: Appendicitis, pseudoreumatism, arthritis, endocarditis, pneumonia, pleurisy, infectious purpura, polymorphous eruptions, edematous patch in temporal region, with discoloration and tenderness (Nicolle).

PREVALENCE.

The disease seems to be very prevalent, many cases being undetected because of the mild course. Rodella found the characteristic bacilli in about one-third of 2,000 cases of pseudomembranous anginas from which he examined microscopic preparations. Abel found the organisms in 6 or 8 cases out of several hundred suspected of being diphtheria, and Beitzke in 5 out of 58 such cases. Lüblowitz found the fusiform bacilli in 6 out of 38 cases of ulcerative affections of the mouth.

CONTAGION.

Contagion in connection with this disease has been observed by Vincent, Doptier, Bernard and Auger and others, but for its occurrence close contact is apparently

required. Costa says that it may be communicated by means of pipes, pencils, etc. Small epidemics have been observed, especially in families. Seven cases occurred in the Memorial Institute within four months. There was no proof that it was transmitted from one patient to another.

DIAGNOSIS.

The diagnosis is made by the finding of the characteristic fusiform bacilli in the smears prepared from the exudate, usually in association with the long, more faintly staining spirilla. The organisms are not stained by Grams method. It is always necessary to exclude diphtheria by means of proper cultures, as the diphtheria bacilli may be associated with the fusiform bacilli. Syphilitic lesions must also be excluded by the history and associated signs of the disease.

PROGNOSIS.

The prognosis is usually good, but it must not be forgotten that considerable destruction of tissue may occur in rare cases, and that gangrenous processes and noma of the face may develop from these ulceromembranous lesions, as occurred in one of our cases. According to Vincent and Richardier, the prognosis is bad in children. Baron, Bruce and others have noticed a tendency for this disease to recur after partial or apparently complete recovery. We observed this once.

TREATMENT.

Filatov and Nevegin consider chlorate of potassium administered internally a specific for the disease. Crandall also found that chlorate of potassium did most good. Baron believes therapeutic applications of little use. Various antiseptic solutions have been used locally and tincture of iodine is spoken of with favor. Because of the anaërobic character of the bacilli, peroxid of hydrogen is most useful and should be applied directly to the seat of disease. Sobel and Herrman made use of a 3 to 5 per cent. solution of silver nitrate, applying it daily to the diseased areas. At the Memorial Institute success attended the use of peroxid of hydrogen, followed by the following solution:

| | | |
|-------------------------------|-----|-----|
| R. Acidi carbolici | 3ss | 2\| |
| Zinci sulphocarbollatis | 3ii | 8\| |
| Aqua q. s. ad..... | 3vi | 180\| |

PREPARATION OF A SERUM FOR THE TREATMENT OF EXOPHTHALMIC GOITER.*

[Contribution from the Huntington Fund for Cancer Research, Department of Experimental Pathology, Cornell University Medical College.]

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The serum treatment of exophthalmic goiter, or Graves' disease, is not new. In addition to the ordinary medicinal measures which have been employed, many attempts have been made to obtain some specific of animal origin which would work as beneficially in exophthalmic goiter as thyroid extract does in myxedema. A few of these attempts have been partially successful, and since I wish to compare the serum which we have used with that tried in previous experiments, I will outline briefly the present condition of the problem.

The fundamental ideas for serum therapy in this disease are, first, that the symptoms are caused by an hyperactivity of the thyroid gland, and, second, that the physiologic action of the thyroid secretion is to neutralize some toxin arising in the course of metabolism. With

our present knowledge the thyroid origin of the symptoms of the disease seems the most rational of any thus far proposed, and, while not committing myself to it absolutely, I shall accept it without further comment for the purposes of the present discussion.

The success attained in the thyroid extract treatment of myxedema suggested that a similar means be employed with exophthalmic goiter. Thyroid extract, it was soon found, aggravated the symptoms in nearly every case, and since the typical picture is that of an intoxication of thyroid origin, attempts have been made to neutralize the products of the excessive activity of the gland by providing an oversupply of the toxin with which it is supposed the thyroid secretion normally combines. Theoretically, this combination detoxicates both components. Among the earliest experiments to make therapeutic use of this idea was that of Burghardt and Blumenthal,¹ who injected into a patient suffering from exophthalmic goiter blood obtained from a case of myxedema. Two hundred and forty cubic centimeters of a mixture of equal parts of blood and salt solution were administered during a period of eight weeks, and during the treatment the patient showed very marked improvement. Theoretically, the blood of animals which have been deprived of the thyroid gland should contain an excess of the metabolic toxin, ready for combination with the thyroid secretion. Ballet and Enriquez,² and later Burghardt and Blumenthal,¹ used the serum of thyroidectomized dogs, both orally and by hypodermic injection, with beneficial results.

More recently, under the leadership of Moebius,³ such a serum obtained from thyroidectomized sheep has come into wide use. This serum is now a commercial product, sold under various names, such as thyroideetin, anti-thyroidin, etc. Some favorable results have been reported from its use, but in the hands of most observers the treatment has not been of marked benefit. The difficulties of practical application of such a serum as this are great. Animals react quite differently to thyroidectomy, and the impossibility of standardizing the serum, together with the great variation in the dosage and means of administration, may account for some of the discrepancies in the results. It must be said, however, that the nature of this toxin and its presence in the serum of thyroidectomized animals has not been satisfactorily investigated.

The other method, which depends for its efficacy on an inhibition of the thyroid by means of a cytolytic serum, has had thus far only a very limited trial and the results have not been encouraging. I believe there are good reasons why the experiments have failed, and these will appear evident during the discussion. Numerous investigators have endeavored to develop a serum having cytolytic action for the thyroid gland. The method of preparing the serum has been uniform in nearly all of the experiments, but the results reported are quite variable.

In this country the first attempts were made by MacCallum,⁴ who injected emulsions of dogs' thyroids into geese at weekly intervals until they were supposed to be immune. He obtained some characteristic effect on injecting the serum thus prepared into dogs, but in most cases the animals became very much emaciated and cachectic without showing symptoms due to hypothy-

1. Burghardt and Blumenthal: Deutsche Med. Woch., 1899, p. 627.

2. Ballet and Enriquez: Congrès des Allénistes et Neurologistes Français de Bordeaux, 1895.

3. Moebius: Neurologisches Centralb., No. 22, 1901.

4. MacCallum: Medical News, Oct. 31, 1903, 820-828.

* Read at the New York Academy of Medicine.

roidism, although many of the injections gave a fatal result. In only one case did he find any lesions in the thyroid gland. His work has been confirmed by Yates,⁵ who made an antiserum by injecting dogs' thyroids into roosters or geese. He could demonstrate no cytolytic effect *in vivo*, although he had good test-tube reactions.

Portis⁶ has worked along much the same lines. In his experiments goats were immunized to dogs' thyroids in three different ways: First, by using the crushed glands; second, by injecting the crushed gland, which had first been washed out with salt solution to free it from blood; third, by injecting the colloid matter prepared by Hutchinson's method.⁷

The serum was administered to three groups of dogs in doses of four cubic centimeters per kilo., with the following results: The first serum caused a tremendous reaction, with profound hemoglobinuria. The second caused a good reaction, but only a slight hemoglobinuria. The third group, receiving serum developed by injections of colloid, showed a milder reaction, but no demonstrable hemoglobinuria was noticed. A point of great interest attaches to the fact that the thyroids of all the animals receiving serum were found to be free from colloid matter. No other lesions were found.

Some interesting and important observations have come from the foreign laboratories. Slatincano,⁸ working with a serum made according to the usual method, has been able to produce some changes in the thyroid epithelium, but never the lesions of chronic sclerosis. Following the feeble doses, he observed an enormous overproduction of colloid, which distended the vesicles and at the same time there was a diminution in the volume of the epithelial cells. With large doses subcutaneously, he obtained some necrosis of the glandular epithelium. When the serum was introduced directly into the carotid artery he observed a necrosis of the thyroid epithelium on the side corresponding to the artery injected; the vesicles were found opening into one another, while the colloid had completely disappeared. In the opposite thyroid, which had been in contact with less serum, he observed a complete disappearance of the colloid. These observations confirm a similar one made previously by Portis.

Two Belgian investigators, Demoor and Van Lint,⁹ have reported results so diametrically opposite to those of other students of the subject that it is difficult to believe in their accuracy. Their serum was made by injecting guinea-pigs or rabbits with an emulsion of dogs' thyroids. Their method was somewhat peculiar, in that they made their injections on every second or third day and bled the animals three days after the last injection, whereas the usual method is to make the injections at intervals of five to eight days and bleed six to eight days after the last injection. Demoor and Van Lint state that their method is essential to obtaining an active serum and that if the usual method was followed they failed to get results. Their experience in this respect is quite unique. It may be true, but it is contrary to the experience of other investigators, and it does not harmonize at all with my results with hepatotoxin and nephrotoxin, nor does it accord with the established principles of immunity. They also found that it is necessary to inject an emulsion of the whole gland in order to produce an active serum. Injection of iodothyroid, thyreo-

globulin or nuclealbumin did not yield an active serum. It is their belief that there is present in the whole gland some substance as yet unknown on which the development of an active serum depends. They state that when a serum made by their methods is given intravenously to dogs it causes all the symptoms of a strong and quickly fatal hypothyroidism. From a study of their methods and results I am inclined to believe that they were dealing with a hemolytic serum, which had little, if any, specific action on the thyroid gland.

The preceding summary of the more important experimental studies of thyroid cytolsins gives an uncertain basis for clinical application. Attempts have been made, however, to produce cytolytic serum having therapeutic value in the treatment of exophthalmic goiter. Murray¹⁰ has recently published his experiments in this direction, and, although they are faulty in many particulars, I have great respect for the honesty and accuracy of his conclusions. In his first experiment rabbits were fed on sheep thyroid extract for a month and the serum from the animals was then used in the treatment of two cases of exophthalmic goiter. The dose of serum was at first 5 minims once a day and later 7 minims three times a day, given by mouth. Both cases improved under treatment, but not more than might be expected from rest with the common medicinal measures. (It is open to serious doubt whether Murray could develop an antiserum by the method which he employed, viz., feeding thyroid extract to the rabbit.) In his later experiment Murray began by giving subcutaneous injections of sheep thyroid extract to a goat, but since so many abscesses resulted from this procedure he changed the method of administration and gave the extract by mouth for a period of two months. The serum from this goat was used in treating two cases. The serum was given by mouth, beginning with 5-minim doses three times a day and gradually increasing to 20 minims. In one case there was a gain of eight pounds in weight, but Murray concludes that the improvement noted in both cases was no more than usually takes place on ordinary treatment, and that no special effect could be attributed to the serum. It may be objected that the method of producing the serum in these experiments was faulty. The goat is not sufficiently far removed from the sheep as an animal species to serve well for such a purpose, and administration of thyroid extract by mouth has never been shown to develop immunity. Even though some degree of immunity had been obtained, there is no reason for supposing that it would be in any degree efficient for antagonizing the pernicious activity of the human thyroid gland, since its antitoxic properties would have been developed by a biologically different protein than the one it was expected to oppose *in vivo*. It would be quite as logical to use diphtheria antitoxin in the treatment of tetanus.

The serum which I have prepared has a somewhat different experimental and theoretical basis. During the last year I have been interested in studying the preparation and action of cytolytic serum having a higher degree of specificity than that which has been reported previously. A paper¹¹ has been published recently giving some of the results of this work, so I shall give here only a brief summary of it.

The cytolytic serum studied by other investigators has been made in nearly all cases by repeatedly injecting an organ pulp into the peritoneal cavity of some animal of an alien species. The serum thus developed may show

5. Yates: Univ. of Penn. Medical Bulletin, vol. xvi, 1904.

6. Portis: Journal of Infectious Diseases, vol. 1, 1904, p. 127.

7. Hutchinson: Journal of Physiology, vol. xx, 1896, p. 474.

8. Slatincano: C. R. de la Soc. Biol. vol. lxx, 1906, p. 76.

9. Demoor and Van Lint: Ref. Biochem. Centralbl., No. 2, 1904, p. 166.

10. Murray: The Lancet, Nov. 11, 1905.

11. Beebe: Jour. of Exper. Med., Nov., 1905.

some antiaction toward the particular organ used for injection, but in most cases such action has been obscured by the very marked hemolytic and hemagglutinative properties. Indeed, Pierce¹² believes that much of the effect of the hepatotoxin and nephrotoxin developed by injection of the full cells is due to the agglutinated corpuscles forming small thrombi with resultant focal necroses. Practically all observers have noted a severe hemoglobinuria following the administration of such a serum. The results obtained have, therefore, justified the conclusion that it is impossible with such serum to cause definite lesions in one organ without at the same time injuring other organs. The serum has no morphologic specificity.

The cytolytic serum with which my experiments were made by was developed by injecting the nucleoproteids of some organ, such as the liver or kidney, instead of the whole organ ground to a pulp. The reasons for selecting nucleoproteids for this purpose are obvious. We know that the nucleus is the most important morphologic and physiologic part of the cell. If specificity is a function of any of the cell constituents, the nucleus must be most intimately concerned therein. They are the chemical basis for the most fundamental of the cell processes, and it seems to me that it is not unreasonable to suppose that by using only the nucleoproteids for the development of the serum a considerable amount of what we may call extraneous material has been excluded, and only those compounds have been included which have to do with the particular work of some selected group of cells.

Because of the biologic differences in proteids it is necessary to develop the serum from the proteids of the same species of animal as we use later for testing its activity; that is, nucleoproteids from dog organs were injected into rabbits at seven-day intervals until five injections had been made, and the serum from these rabbits was then tested on dogs. We could not expect such a serum to have much effect on the organs of cats or guinea-pigs. Test-tube reactions show that a serum made by injection of nucleoproteids is much more specific than the sera made from the full cells. The results obtained by the biologic test, however, are by far the most interesting outcome of the work, and in confirmation of the test-tube reactions show that such a serum is highly specific in its action. If the serum has been developed by injecting nucleoproteids from the dog liver, we find that its administration makes the animal very sick, and if the dose has been as much as 2 c.c. per kilo, the result is fatal. This dose is very much smaller than has been used by most previous investigators, but is still about 100 times larger than the dose of thyrotoxin, which we used later as a therapeutic dose in treating the exophthalmic goiter patients. Postmortem we find that the liver has been badly damaged, while the other viscera have not been injured. Other observers have found that a serum made from liver pulp invariably causes lesions in the kidney with albuminuria. The serum made from the liver nucleoprotein, on the other hand, has not produced renal lesions, and at no time has there been albuminuria following its use. However, if the serum has been developed by the injection of kidney nucleoproteids its administration causes an acute nephritis, which may be quickly fatal. In some cases 50 per cent. of the total nitrogen in the urine has been in the form of albumin.

A constant phenomenon was observed in what I have called the latent period. To illustrate: In some cases the nephrotoxin was given in small repeated doses intra-

peritoneally, and in others in one large dose intravenously. In the latter case the animal showed an immediate reaction, but in ten hours had completely recovered and remained normal for three to five days. At the end of this interval a slight amount of albumin appeared in the urine, and the condition grew rapidly worse, until by the eighth or tenth day the animal had a very severe nephritis. The few days which elapsed between the administration of the serum and the appearance of the albumin is the latent period.

Antisera made by the injection of nucleoproteids are not absolutely specific, for they have a weak hemolytic and hemagglutinative action. At such dilutions as are used *in vivo*, however, there is neither lysis or agglutination of the blood corpuscles. This statement is based on test-tube reactions, and it may be, that the conclusions do not hold for the inoculation experiments. Without following the details of this work further, I may say that from it we have drawn the conclusion that it is possible by the injection of the pure nucleoproteids of a selected organ into the peritoneal cavity of an animal of alien species to develop a serum having a high degree of specificity in its action toward the selected organ.

At Dr. Rogers' suggestion I endeavored to apply the principles which had been determined in the work with hepatotoxin and nephrotoxin to the preparation of a serum which would have cytolytic action on the human thyroid gland and therefore be of therapeutic value in exophthalmic goiter. Just at this time we were fortunate in securing an autopsy the thyroid glands from two fatal cases of the disease, and it seemed best to make the first experiments with them. The problem is not precisely similar to that of the former work. We do not wish to produce a definite lesion in the gland or injure it to the same degree as we did the livers and kidneys. The ideal result would be an inhibition of glandular activity which would be sufficient to restore a more nearly normal condition of affairs. It seemed to me, also, that the problem was not simply one of producing a cytotoxin of some decided specificity for the thyroid, but that account must be taken of the fact that the thyroid secretion probably has toxic action, and we should endeavor to neutralize that as well as inhibit the gland. A brief consideration of the proteid constituents obtained from the thyroid will be necessary to understand how these two factors influence the work.

Three sorts of proteid may be obtained from a saline extract of the gland, viz.: nucleoprotein, globulin and albumin. The colloid matter contains globulin and albumin, while the nucleoprotein comes from the nuclei of the secreting cells. In the older literature the globulin was confused with the nucleoprotein. Oswald¹³ has shown in a number of researches that the globulin is the iodine-containing proteid of the gland and that it alone is responsible for the peculiar physiologic activity which the whole gland has. Accordingly we isolated in pure form the nucleoproteids and thyroglobulin from the Graves' glands at our disposal. The method of isolating the nucleoproteids was the same as that followed in the previous work with dog organs and has been described fully in the paper¹¹ already published. The globulin was precipitated by half-saturation with ammonium sulphate, and, after filtration and washing, the excess of salt was removed by dialysis. Some injections were made from the fresh proteids, but the larger portion was dried at low temperature for preservation. A mixture of the two proteids was injected into rabbits. The nucleoproteids were included in this mixture be-

¹² Pierce: "Studies from the Bender Hygienic Laboratory," 1904, 3.

¹³ Oswald: Virchow's Archiv., vol. clxix, 1902.

cause I wished to produce some cytolytic effect on the thyroid gland, and the globulin because I hoped thereby to develop an antitoxin to counteract the toxic symptoms. We have been accustomed, therefore, to speak of our serum as having both cytolytic and antitoxic properties, but our only reasons for so speaking have been the theoretical ones just mentioned. It may be that a serum made from the globulin portion of the gland would have cytolytic action. Portis, however, did not find that his serum made from the colloid of the gland had much cytolytic effect. A serum made from the nucleoproteids alone may have antitoxic properties, but I should not expect such behavior, *a priori*, because the nucleoprotein is not the portion of the gland responsible for its toxic effects. I am certain, however, that the whole gland is not essential to the production of a potent serum, and it seems not unreasonable to conclude that the nucleoproteids are as intimately concerned in the production of thyrotoxin as they are of hepatotoxin and nephrotoxin.

The rabbits were given injections of the proteids intraperitoneally at five-day intervals and were bled on the eighth day after the last injection. The earlier serum was developed from larger quantities of proteid than the later, because our supply of proteid would not permit us to continue such liberal treatment as we had given at first. I believe these smaller injections did not produce so active a serum. The amount of proteid given at each injection varied somewhat with the size of the rabbit and his reaction to the treatment. During the first two weeks a six-pound rabbit would generally lose one pound in weight, but this was followed by a slow gain to nearly or quite the original condition. The animals were bled from the carotid artery into sterile tubes and the serum poured off after the clot had been allowed to contract for twenty-four hours in the refrigerator.

I believe that the results of the therapeutic application of the serum are more than coincidence and that an impartial consideration of the clinical evidence must lead to the conclusion that improvement and, in some instances, recovery has been caused by the administration of the serum. The physiology and pathology of the thyroid gland are so obscure that such a means of treatment as the employment of a cytolytic serum can not be applied as yet with a high degree of intelligence. There must be some degree of experimentation with each patient. An active antiserum made from human tissues is capable of doing a great deal of harm and must be applied with great caution. It can not be said of such a serum, as it often is of tetanus or diphtheria antitoxin, that it may be used in liberal quantities because it will do no harm even if it does no good. The therapeutic dose is a very small one. Alarming reactions have followed the injection of one cubic centimeter of the serum. I do not claim that the serum is absolutely specific. We have only the clinical evidence on this point backed by the analogy with the hepatotoxin and nephrotoxin, which is imperfect, because those were developed from nucleoprotein alone, while the thyrotoxin has come partly from the globulin injected. In fact, we have produced just enough light to intensify the darkness.

The work has suggested more questions than it has answered and, very naturally, we have now experiments in progress to determine whether a serum can be made from normal thyroids which will be efficient therapeutically. No definite statements can as yet be made in regard to the matter, for, in view of the lack of conclusive experimental evidence, personal opinion is of no consequence.

THE TREATMENT OF EXOPHTHALMIC GOITER BY A SPECIFIC SERUM.*

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The most generally accepted theory of the direct causation of the symptoms of exophthalmic goiter, or Graves' disease, is overactivity of the thyroid gland, and the active portion of its secretion is similarly believed to be a globulin containing iodine, called thyroglobulin. In the attempt to neutralize this secretion or check its production several schemes for serum or allied methods of treatment have been tried. Among these may be mentioned the serum of thyroidectomized dogs drawn after the animal had been operated on and had developed symptoms of athyroidism; the serum of a patient suffering from fully developed myxedema; the serum and the fresh and dried blood and the fresh and dried milk of the thyroidectomized goats, commonly known as Möbius serum; the serum of herbivorous animals which had been fed for varying lengths of time on the thyroid glands of animals of another species, and the serum of animals into which emulsions of the thyroid glands of another species had been injected. Conflicting results have been reported for all these, but they generally agree in a failure to cure.

While assisting last year on the clinical side of the work in some experiments for the production of cytotoxins, conducted by Dr. S. P. Beebe in the laboratories of the Cornell University Medical College, I was greatly impressed with the specific character of a nephrotoxin which he had made from dogs' kidneys. The principle seemed directly applicable to the treatment of exophthalmic goiter, and as I obtained at this time two of what are clinically and in the gross the large, soft, cellular thyroids of exophthalmic goiter, I induced Dr. Beebe to make from this material a thyroid cytotoxin for man in the same manner as he had already made the kidney cytotoxin for the dog. The glands were ground to a pulp, extracted with normal salt solution and the coarse fibers strained off. The rather thick, cloudy filtrate was then made frankly acid with acetic acid and a heavy precipitate of nucleoproteids resulted. The supernatant liquid was then syphoned off and half saturated with ammonium sulphate, which carried down the remaining nucleoproteids and the globulins including the thyroglobulin or supposed active secretion of the thyroid gland. These precipitates were combined, and after removing the neutral salt by dialysis were, to some extent, injected while fresh into rabbits. The major part of the precipitate was, however, dried for preservation. The rabbits showed a severe reaction to these injections and some died (one, at least, with many of the symptoms of exophthalmic goiter) and thus wasted our precious material, which at first was used freely. After about five weeks of this treatment the rabbits were bled to death from the carotid and the serum thus obtained from these first inoculations I shall call serum A.

Serum B was made in August from the dried precipitate, then four months old, of nucleoproteids and thyroglobulin obtained from these diseased glands. The powder was dissolved in normal salt solution and injected as before into rabbits, but the demand for the finished product was urgent and somewhat more haste was employed than in the preparation of serum A.

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The preparation of serum C in a similar manner was begun a month later, or when the dried powder was about five months old, and the animal inoculations were conducted with care and slowly, but with as little of the original material as would produce a reaction, since by this time its value was becoming apparent and the quantity of the dried precipitate very much decreased.

Serum D was made from the normal human thyroid gland as obtained at autopsy in the morgue, and has not proved satisfactory. The glands which have generally been received several days after death were ground to a pulp, extracted with normal salt solution and the liquid strained through gauze. The filtrate was then made acid with acetic acid and, as very little precipitate resulted, dilute alcohol was added. The precipitate thus finally obtained was suspended, while fresh, in normal salt solution and injected into rabbits at intervals of about five days for some four weeks. The animals showed little or no reaction to the treatment with this material, and thus presented a noticeable difference from the previous experience.

The results produced by these sera are best explained by a brief summary of the case histories:

A. F., suffering from typical exophthalmic goiter, received a total of 30 minims of serum A when it was fresh, and showed a pronounced local and constitutional reaction about four days after the first dose. Recovery took place gradually and the condition was practically normal at the end of some five months.

E. R., suffering from typical toxic exophthalmic goiter, received 15 minims of the fresh serum A at one dose, and had a bad cardiac dilatation five days later, but recovered completely during the next three or four months.

M. B., suffering from a severely toxic exophthalmic goiter, received 1 c.c. of the fresh serum B in divided doses with a pronounced reaction four days after the first dose, but has now (five months later) recovered from practically all symptoms.

A. P., suffering from a severely toxic form, also changed from a moribund to a convalescent condition within three days after the administration of 2 c.c. of serum B and 2 c.c. of serum C when each was about three months old. She seems now to have almost completely recovered. There was no bad reaction whatever.

E. M., with a typical form of the disease, showed a similar postponed reaction and slow recovery after a small initial dose of serum C when it was a few weeks old.

L. M., suffering from typical toxic exophthalmic goiter, received a similar dose of serum C when it was two months old, and, without any noticeable reaction, was changed from a moribund to a convalescent condition and has now completely recovered.

F. E., suffering from an atypical form of the disease, showed a severe postponed reaction to serum C when it was a few weeks old and then recovered gradually.

The other three cases showed the same peculiarity, but have not exhibited much or any improvement or reasons revealed in the case histories.

Thus ten cases have been treated with sera A, B and C, with a result of three apparently perfect cures, three rescued from a critical condition and now approaching a cure, and the others more or less improved, their improvement depending, as it now seems, on several factors which it is legitimate to attempt to explain. In this explanation, however, it must be borne in mind that a great deal is inference or supposition and very little has been definitely proved.

It was noted in these cases that the first serum made by freely inoculating the rabbits with the fresh precipitate of nucleoproteids and thyroglobulin of the diseased human gland produced the best results with the smallest

dose and the most reaction (serum A). The serum made later, when this precipitate from the diseased thyroid was several months old, was made in some haste and still proved effective, but required a larger dose and produced somewhat less reaction (serum B). The serum made still later (serum C) was derived from smaller injections of the dried precipitate carried over a slightly longer period and was about the same as serum B, but apparently less efficient than serum A. Each of these produced no appreciable result after injection until the lapse of at least twenty-four hours, and then there was some improvement in the subjective symptoms. Some four or five days after the first dose, and on the second or third repetition of the injection, there developed a severe erysipelatous erythema, with swelling all around the point of puncture. This would be intensified by another dose in a different part of the body and was accompanied by a sharp rise in temperature and very unpleasant cardiac disturbance in the form of irregularity or great rapidity and (in one case) sudden extreme bradycardia. The animals treated with the specific cytotoxin for the kidney, liver or pancreas would show little or no reaction for several days, perhaps a week, and then suddenly sicken and die, and at autopsy the organ under investigation would be found to be the one chiefly affected. The kidney and liver consist almost entirely of secreting cells, and so supply a large amount of definite material, presumably nucleated secreting cells, for which the inoculated animal can produce antibodies. The normal thyroid, on the other hand, contains a good deal of stroma, blood vessels and colloid, but comparatively few secreting cells, and to make a cytotoxin which is specific in a pronounced degree for any given kind of cell it seems to be necessary to use that kind of a cell for the inoculations, not only in considerable quantity, but as much as possible, to the exclusion of all other kinds of cells. Therefore, to make a cytotoxin for the thyroid gland there must be obtained, in the first place, a great number of the secreting cells of this organ, and then as few as possible of the cells of the stroma and blood vessels which are common to all other organs and tissues.

Whether this is true or not, the precipitate or nucleoproteids obtained from the ground-up Graves' thyroid, suspended in salt solution, is very abundant and comes down in a flocculent mass, while the similar precipitate from the normal gland is almost inappreciable and has to be obtained by a slightly different method. The supernatant liquid over the first heavy precipitate from the Graves thyroids contains, as stated previously, some suspended nucleoproteids, and with them the globulins, including the thyroglobulin or supposed active secretion of the organ. These were precipitated separately by ammonium sulphate and then combined with the first precipitate of nucleoproteids by acetic acid, and after removing the neutral salt, injected into rabbits at intervals of five days for four weeks. There were thus produced antibodies for both the cells and their secretion; in other words, a serum which may be supposed to contain both a cytotoxin and an antitoxin. These terms are used only as conveniences in an attempt to construct a working hypothesis, and it must be remembered that the difference between a cytotoxin and an antitoxin is by no means clearly understood.

In the experiments with a cytotoxin designed to be specific for a dog's kidney, the animal showed no reaction for several days and then died from an acute nephritis. The severe reaction with the thyroid serum in the patients whose histories are given took place after a corresponding interval succeeding the first dose if the

serum was fresh, but if it were old the reaction seemed to decrease in proportion to the age of the serum. At the same time the permanence of the effectiveness of the dose also seemed to decrease, and hence the bad qualities of the medicament can not be eliminated by storing it in an icebox for several weeks or months. The bacterial cytotoxins have somewhat the same perishable characteristics.

But there is also some appreciable improvement, especially in the nervousness and sleeplessness which takes place within a few hours of the time of administration of this serum, and this property still persists apparently as strong as ever in some of serum B, now five months old, and as the thyroglobulin was contained in the material originally used for inoculating the rabbit it is reasonable to imagine an antibody for it, or an antitoxin, in the serum. This also is comparable with the bacterial antitoxins, which persist unchanged for a long period and when administered act quickly.

If this double content of the serum can be granted, the one for lack of a better term called a cytotoxin, having a late and cumulative effect in suppressing the action of the thyroid secreting cells, and the other, an antitoxin nullifying the action of the excessive thyroglobulin, much helpful light is shed on the clinical phenomena. We may imagine, and it is not incompatible with the clinical facts, that the fresh serum stops the active poisoning and a little later inhibits the activity of the gland, and in doing so in some manner breaks a vicious circle which, without destroying the thyroid, leads to a gradual resumption of its normal function. If, however, the serum is old or deficient in the supposed cytotoxin element, there is only a temporary suppression of the pathologic process, which in course of time is again in evidence.

The above statements summarize our present knowledge of and experience with this remarkable serum, and are admittedly very incomplete and unsatisfactory. It requires weeks to prepare the serum and months to observe its effect, and as the subjects all have to be human and the medicament is evidently dangerous its administration has to be conducted very carefully and slowly. Any error in the preparation, or any bacterial contamination, means a "start all over again," but we have always kept a little of the original very effective material on hand to use in critical cases. The ordinary treatment, fortunately, can carry along the average case until we are sufficiently sure of any particular product that happens to be ready. I have purposely omitted all mention of the etiology, pathology and symptomatology of exophthalmic goiter, as this involves another uncertainty in that some forms of the disease may not be amenable to this treatment. In fact, I do not believe that a serum made by this method will cure all cases of the disease, as there have been very marked differences in the individual reactions. As a general rule, although it is not invariable, those who have had the most reaction have progressed the most satisfactorily, and it does not seem to hasten recovery if the injections are constantly pushed. On the contrary, this seems to retard the progress.

Then there is a certain type of cases which has seemed peculiarly refractory and liable to relapse. These patients have no exophthalmos, but they do have an asymmetrical thyroid, that is, one with a cystic or adenomatous enlargement. They complain chiefly of digestive disturbance, with fermentation and pain, which may be abdominal or thoracic, and with this disturbance there is generally dyspnea and labored breathing. They also have marked weakness, a soft, feeble pulse, and either

an intermittent or constant tachycardia. They are emotional and generally "nervous." Operative removal of the adenoma or cystoma is usually futile in that it does not cure the symptoms, and the interference may be dangerous, as I have more than once observed.

The bad chronic cases of the disease, with dilated and hypertrophied heart and the secondary lesions following imperfect circulation, should, of course, recover much more slowly than those which are uncomplicated or of less duration. I believe that when the thyroid is removed by operation for exophthalmic goiter and an acute thyroïdism follows, it can be checked by serum C, and I have preserved some of it for this purpose, but have not yet had the opportunity of thus testing it.

The difficulty of obtaining the normal human thyroids in a sufficiently fresh and uncontaminated condition (to say nothing of the pathologic thyroids) and the technical difficulties in the manufacture will probably prevent any commercial use of the product. The least error or variation in the complex mechanical or chemical methods employed by Dr. Beebe may spoil the finished serum or make it extremely dangerous, as I have more than once verified. A very skillful chemist, experienced in biologic work, is a necessity.

I can only say in closing that typical exophthalmic goiter has been cured by serums A, B and C, and this experience can be repeated with a serum made and administered in the same way; and if it ultimately proves to be necessary for some poor patient to die or to be operated on to obtain the pathologic thyroids of exophthalmic goiter in order that others may be saved it would indeed be a scientifically grim romance.

CASE I.—History.—A. F., 27 years old, single, saleswoman, had always been nervous and excitable, and as a child remembers "hearing in her ears," the peculiar buzz or whir synchronous with the pulse which so many of these patients find annoying. She first noticed "palpitation" and dyspnea on exertion and attacks of diarrhea and shortly afterward, or when about at the age of 24, she observed the goiter and exophthalmos.

Examination.—When I first saw her in May, 1903, she had all the typical signs of the disease with a soft symmetrically enlarged thyroid, moderate exophthalmos, rapid respiration, which became dyspnea on exertion, marked pulsation of the great cervical vessels and a soft compressible pulse of 120 to 130. Her last physician had been giving her small doses of a dried thyroid preparation, which she thought made her feel a little stronger. This was stopped and small doses of potassium iodid for several weeks gave perceptible though temporary benefit to the tachycardia. When this medication had lost its effect, she received thyroidectomized goat serum by mouth, capsules of dried blood of the goat, "didymin," brovid of quinin, aconite, belladonna and many other usual and unusual medicaments, without benefit. In the winter of 1904-05 she began to lose ground and could work only a portion of each month. She finally weighed about 90 pounds and complained constantly of the heaving heart action, sleeplessness, dyspnea and weakness. There were also all the usual symptoms, with a large soft thyroid and pronounced exophthalmos and pulse of 120. She was able to walk, though with difficulty.

Treatment.—April 15, 17 and 19 she received first 5 then 10 and next 15 minims of serum A. April 17 she said the palpitation and sleeplessness during the previous night had been much improved, but there was no other noticeable change except some erythema in the right arm about the point of inoculation. After the injection in the outer arm on the 19th, this erythema became much intensified and a much worse one developed around the last injection and suggested a saturation of the system with the serum. There was some fever, and she felt sick enough to go to bed. This passed in a few days, and at the end of a week there was a decided improvement.

The heaving heart action, the carotid pulsation, the sleeplessness and most of the nervousness had disappeared, and though the pulse was still about 120, it was of much better quality. At the end of another week she had gained about 10 pounds in weight and resumed her work of standing daily behind a counter.

Result.—There was a steady though not very rapid gain, which was hastened greatly by a residence at the seaside during August, and on her return the exophthalmos had entirely vanished, but a slight goiter even now can be felt, though not seen. She says that she can note by the size of her collars that each month, since the change began last spring, the neck has decreased in circumference, and at present it is as it was when she considered herself well. She now has a good figure, and looks and apparently is perfectly healthy.

CASE 2.—History.—E. R., aged 37, married, showed the first signs of the disease in the form of goiter, exophthalmos and tachycardia about twelve years ago. Every conceivable treatment was tried without more than temporary improvement. During these years she bore two children to full term, and during gestation the disease was scarcely noticeable, but after the birth of each child it returned within a few weeks and caused much disability. She received the thyroidectomized goat serum, the dried blood and the milk without the least benefit. Iodid of potassium in small dosage had at one time some temporary effect in slowing the pulse. Year by year the disease was very slowly but steadily becoming worse. In the spring of 1904 a bad anemia developed, which was relieved somewhat during the summer, but recurred after the winter of 1905, and in April the pulse ranged between 130 and 150 and the patient had to spend most of the time in bed. The hemoglobin was at this time 46 per cent., and the red cells 3,600,000. The exophthalmos was pronounced, and there was a large soft goiter.

Treatment.—April 25 she received 15 minims of serum A hypodermatically. As she was only my second case and in a serious condition, I fortunately awaited developments. April 30 there was a sudden attack of faintness, followed by labored breathing and dyspnea, and the heart became very irregular and apparently dilated. The pulse an hour or two later ranged between 30 and 40 to the minute, and not for another day did it rise above 40. There was nausea and some diarrhea. With careful nursing and without any medication except a little strophanthus and iron, the condition very gradually improved, and a month later she was moved to the country, where she soon became able to walk.

Result.—The "nervousness," dyspnea, sleeplessness and tachycardia reappeared at intervals during the summer, but the intervals grew longer and finally all symptoms vanished about September. The goiter, however, subsided very gradually, and at about the menstrual periods evidently enlarged a little temporarily, but each month was less perceptible and disappeared in August, but could be palpated as late as November. The exophthalmos was not noticed after August or September, and she is now a perfectly normal woman.

CASE 3.—History.—McQ., 37 years of age, widow, cigarette maker, has had a typical form of the disease for nine years and dated the outset from the death of one of her children. For the past winter she has been able to work at her trade only about three days a week, and she became so weak and short of breath she could with difficulty reach the dispensary. The pulse was about 13 when she was quiet, there was pronounced exophthalmos and a large firm goiter.

Treatment.—May 8, 10 and 12 she received first 5 then 7 and next 10 minims of serum A, which was not well preserved. On the 8th there was some erythema and on the 12th it was pronounced, but no perceptible improvement was noted. She disappeared and was forgotten until she came back in November in much the same condition as when first seen, but with a remarkable story. She said that after the last dose on May 10 she had been very ill with a "sore arm and heart trouble," and had been confined to bed for about two weeks; apparently a bad erythema with fever, but with no suppuration. The heart trouble seemed to have been something like a dilatation, as there had been faintness and irregular "thumping" with dyspnea and nausea. This subsided and she worked

steadily at her trade all that summer. The exophthalmos and goiter had been less noticeable, but had now recurred with the dyspnea, tachycardia and weakness. The pulse was 120 in November.

November 10, 13 and 17 she received 1 c.c. of serum C, then about two months old. On the 17th a rather severe erythema followed, and for a few days she had to stay in bed for weakness, but on the 20th she resumed work. She began to feel stronger, but the physical signs remained, and during December I tried serum D, made from the normal gland by a slightly different process. Three rabbits were employed, each inoculated in the same way, but the serum from each, while giving the same general effect, varied perceptibly in the severity of the resulting symptoms. Within one or two days after the injection the pulse would rise 15 to 20 beats a minute and be accompanied by a heaving heart action perceptible under the clothing. At the same time there was some swelling of the arm, but very little erythema. The exophthalmos was increased and the general nervousness, tremor and weakness was generally intensified. In the course of four or five days these symptoms would subside, and she would feel better than before and raise my hopes and her own. But the pulse remained about 120 or a little more, and this caused me to try another rabbit: No. 320 seemed a little worse than No. 311, but both were bad, and therefore on December 29 I gave 1 c.c. of serum D from No. 68. December 31 there was considerable swelling and some erythema about the point of injection. January 1, I was asked to go to her house, and found her semiconscious, with a severe headache, pulse of 150 and somewhat irregular, with a heaving heart action and very bad exophthalmos. She was so weak she could scarcely move, and altogether the symptoms looked very serious. But the following day the condition improved, and on January 3 she was able to be out of bed. Evidently, serum D was decidedly dangerous, and produced a stimulating rather than inhibitive effect on the thyroid, and though this was noted after the administration of serum D from rabbits No. 68 and No. 311, the latter had subsequently seemed to produce some benefit at least in the subjective symptoms. No. 320, however, showed none of these feelings of betterment, and the condition which had been perceptibly improved by serum C during the middle of November had become again as bad as ever or worse.

Result.—She is still under treatment, and though the physical signs of the disease are not appreciably altered, she says she feels stronger and is able to work every day.

CASE 4.—History.—M. B., aged 26, single, trained nurse, had suffered from typical exophthalmic goiter for several years, but had been able to do her work. In May, 1905, she was compelled to go to bed, and in July she began to suffer from cardiac dilatation, irregular temperature, nausea, vomiting and diarrhea.

Examination.—I first saw her August 10. She was deeply pigmented, extremely emaciated and too weak to move unassisted. The exophthalmos and the firm goiter were not extreme, the breathing was labored and about 35 to the minute, the pulse was characteristic, the apex beat was in the left axillary line, there was a very plain precordial heave with each systole, and diarrhea and vomiting were very distressing. She had made all funeral arrangements, and only consented to see me on a friend's solicitation. As we had no serum ready at this time, I supplied her with some thyroidectomized sheep serum, and I think this kept her alive until serum B had been prepared, as the diarrhea and vomiting began to decrease, the respirations became a trifle less frequent and the pulse was better. Improvement was slight.

Treatment.—September 11, 13, 15 and 17 she received 1 c.c. of serum B, and on the 15th there was a severe erythematous swelling of the arm and a temperature of 103.4 F., which seems to have been made a little worse by the injection on the 17th. A marked improvement in the general condition began about this time. There were no more dyspnea, diarrhea or vomiting after the 12th, and on the 19th she was able to get out of bed for the first time since early in June. She began to walk about October 1, which was imprudent with the badly dilated heart. The pulse, though vastly better in quality, remained about 120. The goiter showed little or no

change, but the exophthalmos had nearly disappeared, and the pigmentation of the skin was fading.

October 12, 14, 16, 18 and 20 she received 1 c.c. of serum C, to hasten recovery. There was no reaction except some transient erythema, and a slight improvement in the pulse from 120 to 115, and afterward the appetite and the weight increased. October 28 1 c.c. of serum C was administered and 2 c.c. November 3 and 13 without appreciable reaction. After November 1 she began to gain a little more rapidly in strength and weight.

Result.—From September 11, when the first of serum B was administered, there has been steady improvement, until now she is able to do ordinary work without difficulty. The goiter within the last month has grown smaller more rapidly than during the previous months and has now, together with the exophthalmos, entirely disappeared, and though still a little weak, I think this patient can be honestly called cured.

CASE 5.—History.—E. M., aged 35, single, German dress-maker, has had typical exophthalmic goiter for about ten years. Three years ago she was forced to spend nearly the whole winter in the German Hospital, and seems at that time to have had severe symptoms, especially cardiac. She was afterward much improved, but for the past year has been able to work only at intervals.

Examination.—Her mental condition might be described as "unbalanced." There was only a very slight exophthalmos, a moderate goiter with a small cyst in the isthmus, but marked tremulousness and weakness. The pulse was between 120 and 140, soft and compressible, and there was a pronounced precordial heave.

Treatment.—September 21, 22 and 25 she received first 10 then 15 and next 20 minims of serum B without any result until September 26. Then a severe erythema developed around the point of last injection, and was accompanied by some fever and an irregular and very feeble pulse. She became unable to walk, and was sent to St. Francis Hospital, where the hemoglobin was found to be 73 per cent. and the red cells 3,700,000. With rest in bed, some improvement was noted. She received 1 c.c. of serum C October 5, 8, 10, 12, 18 and 23, without any noticeable reaction, and with a slow and very intermittent gain. October 16 the hemoglobin had risen to 82 and thereafter progress was more satisfactory. She left the hospital October 26 with a pulse of about 80, but the goiter had only decreased very slightly. During the next menstruation there was a recrudescence of all symptoms, but they subsided at its close, and since then she has been more or less steadily gaining. At constantly longer intervals there have been attacks of tachycardia and breathlessness lasting for a few hours or a day after any of the nervous strain inseparable from her trade, which involves fitting clothes on occasionally irascible customers. After one of these occasions in December she came to me very angry and with a pulse of 150, and complaining that she had been unable to sleep the previous night from worry. I gave her 1 c.c. of serum C, and a week later she reported that she had slept perfectly ever since, and I found the pulse after a quick walk 78.

Result.—At present she eats and sleeps well, has no exophthalmos and no goiter, except the small cyst which can be felt but not seen, and no tachycardia, though the pulse ranges between 80 and 90. But she is irascible, and I think slightly "unbalanced" in mind, and small incidents seem to send it up above 100. Nevertheless, I think she can be called well physically.

CASE 6.—History.—L. M., aged 25, single, Russian, entered Gouverneur Hospital Sept. 25, 1905, with a history of weakness, palpitation and dyspnea for the past five or six years. She had been able to be about until within a week or two. Then there had been an exacerbation of all symptoms and she came to the hospital with a temperature of 101, and a pulse ranging between 120 and 140. She became gradually worse.

Examination.—I first saw her October 27. The temperature was then 102, the pulse 148 and the respiration 44 and very labored. The heart was evidently dilated and hypertrophied, and there was a precordial heave with each systole over the whole front of the thorax. The exophthalmos was pronounced and there was a considerable but not excessively large, sym-

metrical firm goiter. There was marked pulsation of the cervical vessels. The dry tongue of toxemia with constant nausea, diarrhea and extreme emaciation and weakness completed the picture of the critical condition.

Treatment.—October 27, 29, 31 and November 2 she received hypodermatic doses of 1 c.c. each of serum C, then nearly three months old, without any bad reaction except a considerable local erythema. Within twenty-four hours of the first dose the nurse noted a cessation of the nausea and diarrhea, and on the following day the heaving respiration and heart action was evidently less and November 5 the pulse was 110 to the minute for the first time since September 28. There was only a gradual improvement, more evident in the general characteristics of the disease than in the recorded pulse and respiration. Temperature reached normal November 4. November 7 and 14 1 c.c. of serum C was given. On the days following these injections there was considerable local erythema and a rise of temperature to 102, but after November 20 it remained practically normal. She had thus received in doses of 1 c.c. each a total of 6 c.c. of serum C, and on November 23 all the symptoms except a slight goiter had practically disappeared, and the patient had a ravenous appetite and was beginning to be out of bed a few hours daily. Everything pointed toward a complete though slow recovery, but November 24, 26 and 28 each I gave her 1 c.c. of serum D from rabbit No. 311. The first dose was followed on the next day by a bad erythema, a temperature of 104 F., pulse of 136 and a respiration of 44. This subsided within another twenty-four hours, and the next two doses only produced a transient disturbance, but though the general condition, the appetite and the digestion remained good, the pulse continued in the neighborhood of 120 and the precordial systolic heave began to reappear. Therefore, December 6, 8, 10 and 11 each she received 1 c.c. of serum D from rabbit No. 320, without any noticeable change one way, or the other. December 22, 23, 24 and 25 she received of serum D from rabbit No. 68, 0.5 c.c., 1 c.c., 1.5 c.c. and then 2 c.c. Within half an hour of the last dose she became flushed and showed an evident swelling of the thyroid, protrusion of the eyeballs very exaggerated and irregular heart action and great dyspnea. This was apparently an acute thyroidism and her condition looked alarming. But the next morning this had subsided, although she remained weak and nervous for several days and did not regain her improvement until I began the administration of another serum, which will form the basis of a future report.

Result.—At present (January 17), under the new medication, she seems to have regained the ground lost by this faulty serum D, and the pulse is again between 110 and 120.

This is a somewhat remarkable instance of the extreme complexity of these sera, as only by such experiences did I realize the necessity of adhering exactly to the formula used in the preparation of serum A. Serum D was made from the normal human thyroid, but by a process which differed from the first in an almost inappreciable degree.

CASE 7.—History.—A. P., aged 29, single, Swedish domestic, entered the Presbyterian Hospital under the care of Dr. W. G. Thompson Dec. 11, 1905.

Examination.—She had a temperature of 102, pulse of 120, and respiration of 25 to the minute. There was a slight but perfectly plain, soft symmetrical goiter, precordial heave, marked pulsation in the cervical vessels and evident dyspnea, but no exophthalmos. She was very weak and tremulous, and had some nausea and diarrhea. She gave a history chiefly of this and "nervousness" and sleeplessness for only the past two weeks, and had therefore an acute type of the disease. The condition grew rapidly worse, and December 16 the temperature was 104, the pulse 136 and the respirations 36; the tongue was dry and hard, there were ecchymotic spots in various parts of the body and evident thrombosis in some of the veins of both legs. The picture was one of a severe and probably fatal toxemia.

Treatment.—December 16 and 17 she received 1 c.c. of serum C and on the 20th 2 c.c. of serum B and no other

medication then or afterward. There was no appreciable reaction and after the second dose there was a very marked improvement in all the symptoms. December 22 the temperature, pulse and respiration were practically normal.

Result.—Since then there has been a steady though rather slow progress toward recovery. She is up and around the ward at present with no signs of the disease, except weakness, some anorexia and a soft thyroid which can be felt, but is not perceptible to sight.

This patient has rather upset my calculations, as, judging from other experiences (in chronic cases), she ought to relapse on account of the supposed absence of the cytotoxin in the serum she received. It may prove that only the antitoxin element is needed to cure these severe acute cases, as at present she is progressing very satisfactorily.

CASE 8.—History.—F. L., aged 50, single, has always been a "nervous" woman, but ascribes the beginning of her illness to the nursing of a relative, who later died. Soon after this, in 1888, she noted an enlarged thyroid and had dyspnea and tachycardia on exertion. The symptoms continued and she became an invalid. The tachycardia only came on at intervals after exertion or excitement or sometimes spontaneously, and lasted from an hour or two up to several weeks. When in good condition physically and mentally it was not troublesome. The physical weakness was always present.

Examination.—I first saw her in October, 1905, and thought she had an atypical form of the disease. She was stout, and had a large median cyst of the thyroid with some palpable but soft enlargement of the lateral lobes. There was exophthalmos, and in repose or after resting the pulse was 75 to 80 to the minute, and was soft and compressible. But after exertion or excitement the pulse beats would increase to 120 or 140 to the minute, with dyspnea and a general cutaneous "flushing." She could with great difficulty walk up one flight of stairs. There was also sleeplessness, poor appetite, fermentation, eructation of gas and frequent attacks of diarrhea.

Treatment.—October 6, 8, 10, 12 and 16 she received 1 c.c. of serum C. On the last date a severe erythema developed and prostration, irregular heart action and some fever (101 F.). She then began to improve and lose flesh. Improvement was not constant, as dyspnea and faintness with a feeble but not rapid pulse occurred from time to time. These attacks have decreased gradually in severity and frequency, and now are rare.

Result.—She now has a good appetite and feels reasonably strong, and at least goes about as any one else, and is what I call well. The cyst of the thyroid is present, but the lobes are not visible, and are not palpable except close to the cyst. The pulse is of excellent quality and not soft and compressible, and averages about 80 to the minute.

The history of this case is that of a type of cases in which there are only a few of the symptoms and in which this treatment ought to be helpful. Generally there is no exophthalmos, but an unevenly enlarged cystic adenomatous thyroid. The chief complaint of the patients is concerning gastric or intestinal indigestion, fermentation, abdominal or thoracic pain, often with dyspnea or labored breathing. There is also extreme weakness, occasional, frequent or constant tachycardia and a weak and compressible pulse.

CASE 9.—History.—M. R., aged 25, married, had been ill for about a year with typical exophthalmic goiter of moderate severity.

Examination.—There were all the usual signs. The pulse at my visit was 140 to 150, ordinarily it was about 120, soft and compressible.

Treatment.—She received November 7 and 9 1 c.c. of serum C, then about two months old. At the end of a week her pulse was about 80 and of good quality, and all the subjective symptoms were greatly improved, but there had been no marked change in the goiter and exophthalmos.

Result.—She received no treatment after this, and lately I have been informed that she is about the same as when I saw her on November 7, but that there has been much less "nervousness."

This was not a fair test, but is included with the others who received sera A, B and C.

In no instance did suppurative develop after any of the injections in these cases.

CASE 10.—History.—A. S., aged 23, single, stenographer, was a champion basket-ball player and an all-around athlete. She dates the beginning of her symptoms to a period of prolonged exertion and grief in 1899.

Examination.—I first saw her Nov. 11, 1905. There was pronounced exophthalmos. The thyroid was symmetrically and very much enlarged, and her thin neck measured 14½ inches over the goiter. She was much emaciated, showed a very marked pulsation in the cervical vessels, including the veins, which were prominent, and had a precordial heave over the whole left thorax. The diffuse apex beat was 12.5 cm. to the left of the median line. There was also marked dyspnea on exertion or excitement. The pulse varied from 120 to 140, and was soft and compressible.

Treatment.—November 11, 15, 17 and 21 she received 1 c.c. of serum C. November 19 her temperature rose to 102, there was a severe erythema in both arms, but mostly about the point of the last injection, and she felt sick and very weak, though the pulse was about the same (120). November 21 these symptoms had subsided, and she began to menstruate. It is worth recording that the exophthalmos, goiter and nervousness during this period, lasting two days, were all marked, but the pulse had come down to 104, the lowest for many months. The next day, November 22, it was very irregular. November 26 considerable improvement was observed. The neck measured an inch less in circumference, the thyroid was softer and the protrusion of the eyes was less marked, but to hasten recovery I gave on this day and again on November 29 1 c.c. of serum D from rabbit No. 311. Shortly after the last dose there occurred an acute exacerbation of all the symptoms, with protrusion of the eyeballs, swelling of the goiter, dyspnea and a feeling of suffocation and then vomiting and diarrhea. For a few hours the pulse was about 160. On the following day these disagreeable symptoms had subsided, and though she complained much of sleeplessness, the pulse became slower, and from December 2 to 6 did not go much above 90. December 10 some diarrhea had appeared, and I gave 0.5 c.c. of serum D from rabbit No. 320, which seemed to stop it. December 12 she received 2 c.c. of serum D from rabbit No. 320, and within an hour or two went into collapse, and her physician, who was hastily summoned, described the symptoms as those of an acutely exaggerated exophthalmic goiter. The eyeballs protruded so that the lids could not be closed at all, the thyroid was swollen, there was an alternating syncope and extreme restlessness, with an irregular and uncountable pulse, vomiting and later diarrhea. With diffusible stimulants this condition gradually subsided, and the next morning all the signs were about as they were when she was first seen November 11.

Result.—She did not care to repeat this experience, but since then she has shown considerable improvement, much to my surprise, as I thought I had undone with serum D all that had been gained with serum C.

The Physician's Personality.—In dealing with sick men, remarks *American Medicine*, the personal equation of the invalid is the thing to study. It is really as important to know "what kind of man the disease has got as to know what kind of disease the man has got," so that what seems to be trickery is merely winning confidence, on which many an invalid starts to recover at once. It's the kiss on the baby's bruise—satisfying and curative. After all, most of us only want a little sympathy when we are sick, and, like big babies, we pine if we don't get it. Patients pay well for it, and the successful doctor dispenses it with his drugs, while the learned fool, who hasn't any sympathy to spare, is a flat failure, though his treatment in other ways may be therapeutic perfection.

SURGICAL TREATMENT OF GOITER.*

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PATHOLOGY.

For a proper understanding of the subject it is necessary to give a short review of the various pathologic conditions which affect the thyroid gland, together with a brief description of the clinical pictures presented by each.

Normally, the thyroid gland, a ductless body, is composed of a vascular stroma supporting acini which are lined with a single layer of epithelial cells. The acini contain colloid material which keeps the epithelial cells from contact.

Simple Goiter.—In simple goiter there is found only increased colloid material, causing greater distention of the acini.

Exophthalmic Goiter.—In this variety we not only find a greater amount of colloid material, but an increase of the epithelial cells causing an irregular invagination of the lining of the acini. These two varieties may be considered hypertrophies, as they represent normal thyroid conditions exaggerated. Both of these varieties show a fairly symmetrical enlargement of gradual growth.

In simple goiter the time of onset is usually between the ages of fifteen and thirty years. Primarily, it may be associated with nervous symptoms, tachycardia, palpitation and tremor, increasing for a time, but which later may subside without treatment. There is no exophthalmos.

There has been frequently noted an enlargement of the thyroid gland dating from the early menstrual period, which enlargement in some cases has disappeared without treatment before the thirtieth year. The hypertrophy may by pressure cause dyspnea, difficulty in swallowing, cough and occasionally bloody expectoration, but it should be noted that the latter are all late symptoms.

In exophthalmic goiter the age of onset is usually between twenty and thirty years. The most prominent clinical symptoms are intensified arterial pulsation, usually low blood pressure, palpitation, tachycardia, tremor, breathlessness on slight exertion and nervousness. Later the exophthalmos develops.

The other pathologic conditions of the thyroid nearly always cause tumors of irregular shape.

Acute Suppurative Thyroiditis.—L. L. McArthur says this is generally bilateral, usually following septic processes, as typhoid, puerperal fever or pneumonia. He names as symptoms sudden onset, rapid increase in size of neck, pain on motion of head, tenderness on palpation. Pressure on veins and nerves may cause a moist intense headache, hoarseness, dysphagia and even cyanosis of head and face. He mentioned as peculiar symptoms, great thirst, because of difficulty in swallowing; occasional severe epistaxis from pressure interfering with venous return, nausea, vomiting from pneumogastric pressure, hoarseness, vocal cord paralysis and dyspnea.

He advocates incision and drainage, with later enucleation of cyst, if continued suppuration. When situated beneath sternum, enucleation primarily, if the patient's condition permits, as in this locality drainage is not a safe practice.

In early fetal life the gland contains no colloid material, and the acini are filled with epithelial cells. Tumors resembling such fetal glands are named fetal adenomata.

The above and glandular adenomata, in themselves benign tumors are unlike benign tumors elsewhere, in that they are often followed by metastases, most frequently of the bones and the lungs, in the order named.

Carcinoma, sarcoma and mixed adenomata are not uncommon. If early in the enlargement bloody expectoration, painful swallowing or vocal symptoms are noted, carcinoma should be suspected. If one waits until a clinical diagnosis is possible metastases will have taken place, which will make operative interference of little avail.

Thyroid Cysts.—These may develop at any time from childhood to old age. They may be single or multiple. Bloodgood states that if an asymmetrical tumor has been present three years, and is confined to the thyroid gland, it is probably either a benign cyst, adenoma or adenocarcinoma in an operable stage.

Cysts are usually slow of growth, but may at any time grow rapidly. They may also vary in size from time to time. There seems to be no relation regarding these growths in the female to puberty or to pregnancy or the menopause.

Clinically, some of the patients exhibit no symptoms except the deformity caused by the growth. While others have atypical symptoms of exophthalmic goiter, which often disappear after the removal of the cyst, as in Case 2. They may cause annoying pressure symptoms.

In a series of cases of this class subjected to operative treatment at the Johns Hopkins Hospital there were no serious postoperative complications or mortality.

In considering the surgical treatment of goiter it should be remembered that the vast majority of cases coming to the surgeon have had the benefit of medical or electrical treatment, or both, for a greater or less length of time, and not receiving the relief desired, or growing more uncomfortable, come for advice and treatment. The foregoing leaves practically only the colloid variety to be considered. The class of cases which come to the surgeon bear a striking similarity to the class of cases of appendicitis which he saw but a few years ago, when the patient, neglected, was allowed to pass on from a condition in which there was but a fraction of a percentage of mortality to one where the percentage was great. In reviewing the literature in which cases have been reported in the last five years one can not help being impressed with the above fact. Mayo reports 128 operations, with eight deaths. Eliminating one cancerous and two "who should not have been operated on, as their condition was so aggravated as to almost class them as moribund previously to operation," the mortality rate is low for a class of cases, most of which had been given up after treatment by internists, since the process could not be made to recede, could not be checked, and did in the large majority increase in danger to and loss of virility of the patients. The deaths in cases of Curtis, Kocher, Witherspoon and others all show alike the increased mortality from this same cause.

Mayo further states: "During the past year two such cases were seen with regard to the advisability of operation, but with a knowledge born of bitter experience both were refused. One died in a week, the other lived a few weeks; both deaths were medical." Do we wait until the belly is full of pus and the patient nearly moribund before advising operation for the removal of an ap-

* Read before Fox River Medical Society.

pendix? Should the advising physician any more stand by and see death spreading out its arms by refusing a patient surgical aid when other measures have shown themselves to be of no avail?

OPERATIVE METHODS.

1. Injection is by many considered as dangerous as any of the other methods.

2. Ligation of the thyroid arteries is as dangerous as removal of the gland, except that in some cases it may take less time than an extirpation.

3. Resection of sympathetic ganglion. Jonnesco reports fourteen cases of bilateral sympathetomy, with no deaths. He resects all cervical and the first thoracic ganglions and believes it to be the operation of election in primary exophthalmic goiter. However, in exophthalmic goiter of long standing he would first do a partial thyroidectomy, and if improvement is not noted in a reasonable time, sympathetomy. Curtis reports three deaths in eleven cases. He says that this method gives good results, but sufficient time has not elapsed to show their permanency. There are many who believe that the destruction of the efferent lymphatics by this method accounts in a large measure for the improvement.

Improvement from the x-rays probably acts to some extent in the same way, according to Mayo and Murphy. Mayo frequently uses it in conjunction with other treatment from two to six weeks previous to operation.

Thyroidectomy.—Kocher reports four deaths in fifty-nine cases of thyroidectomy or ligation of the arteries. Witherspoon, nine cases, with one death. He says it is an operation which gives the greatest satisfaction and removes the lobe most affected, usually the right. Improvement is noted almost at once. Curtis reports seven cases, with two deaths. Mayo, before noted, reports 128 cases, with eight deaths.

A certain percentage of cases suffer from acute thyroidism following this operation, due in part to trauma of the remaining portion of the gland, its subsequent weeping into the wound and absorption. In May of this year the Mayos were practicing cauterization with Harrington's solution to reduce this effect.

The Kocher collar incision gives the best opening, with the least resulting disfiguration, and extends across the neck, if necessary, to the external border of the sterno-mastoid muscle. If necessary, this muscle can be cut, to be sutured later; so with the sterno-hyoid and thyroid muscles. In dissecting it is best to try to keep just inside the capsule. This will usually be found to be very thin anteriorly, and laterally, but thicker posteriorly. Bleeding points are caught with forceps or tied until the gland is separated, first superiorly the superior thyroid artery and vein being located, double tied and cut between. In dissecting below on the right side one must use care not to injure the recurrent laryngeal nerve, which lies in intimate connection with the inferior thyroid artery. This danger is avoided if dissection is confined to the inner side of the capsule. The lobe dissected off, the isthmus and a part of the opposite lobe may be removed if necessary. The preservation of capsular tissue at the stump end, so that the stump may be covered in, and the removal of any loose lobules, is a point in the technic which goes far toward reducing the tendency to acute thyroidism. The wound, clean and dry, is closed except for an opening left for drainage. After operation the patient should be given salt solution subcutaneously, and this should be repeated at suitable intervals, if the patient has lost much blood or is anemic, to prevent absorption from the wound.

Should thyroidism occur, suprarenal extract given in small repeated doses and atropin and morphin give the most satisfaction.

Just a word as to anesthetics. Local anesthesia has an advantage in that the patient tells at once if the recurrent laryngeal nerve is caught, and can be used in all cases where a general anesthetic is contraindicated.

If, previous to operation, morphin is given, light general anesthesia is safe in the majority of cases suitable for operation.

I have never seen scopolamin used in this class of cases nor have I found any reports of its use.

The results of all operators are practically the same. Marked improvement in from 40 to 60 per cent. of cases almost at once, and in nearly all of the rest in a few months following operation. In exophthalmic cases the exophthalmos is the last symptom to disappear.

CASE 1.—Mrs. S. W., aged 39; two children; born in Sweden; came to United States at age of 17 years; housewife.

History.—First noticed enlargement of neck twelve years ago, which had gradually increased in size up to two years ago, when it grew more rapidly, attaining such size as to cause marked deformity, hoarseness and at times difficulty in swallowing. During the three weeks previous to operation the pulse averaged 108, the extremes being 96 and 124. About eighteen months before operation she had begun medical treatment, which consisted of electricity and injections, these covering a period of about five months. About two months after, having no relief, she changed advisers and was given thyroid tablets, which she took for a period of about three months without relief; indeed, being more nervous at times than before. When first referred to me she complained that at times she was very nervous, without any apparent or only slight cause.

Operation.—On April 18, 1903, entire right lobe, isthmus and about half of left lobe were removed under ether anesthesia.

Pathology.—Colloid hypertrophy of the thyroid. Patient made uneventful recovery. In September of same year patient's nervous condition was much better, and pulse at five different times averaged 92, the extremes being 86 and 104.

CASE 2.—Miss T. B., aged 32, was born and lived in Illinois all her life. Dressmaker for eight years.

History.—Patient had marked swelling of right lobe of thyroid for four years, with extreme nervousness and tremor, and had been treated for chronic indigestion because of many attacks of vomiting and diarrhea. At first visit, about six weeks before operation, pulse varied during one hour from 108 to 136. During the four days previous to operation pulse had extremes of 104 to 138. There was no exophthalmos.

Operation.—On May 3, 1903, under ether anesthesia, nearly the whole of the right lobe was removed. Three months subsequent to operation the tremor had disappeared, the patient was much less nervous and the diarrhea and nausea had disappeared.

Pathology.—Cyst of thyroid gland. Cyst fluid slightly discolored and thin. Specimen was lost in transit to laboratory, so no microscopic examination was made. Patient was seen Dec. 15, 1905; pulse, 88; weight increased seventeen pounds, and says she feels perfectly well.

CASE 3.—Mrs. H. W. T., aged 44, was born in Illinois and had lived in Iowa thirty-eight years.

History.—History of tremor, nervousness, nausea, vomiting, diarrhea, for four years. During the past six months the eyes were noticed to be moderately prominent. The pulse was said to run at times as high as 148. When first seen it was 126 to 134. The thyroid gland was only moderately enlarged; slightly more prominent on the left side.

Operation.—On Feb. 16, 1904, under cocaine anesthesia, the left lobe and isthmus were removed. Except for the day following the removal, when patient's pulse went to 126, the temperature to 102.8 and there was extreme restlessness, the recovery was uninterrupted.

Pathology.—Sections showed typical invaginations of exophthalmic goiter.

On June 16, 1905, the following was received: "Your patient is fine. Her eyes have lost their prominence so much that it is hardly noticeable. She weighs 141 pounds" (weight at time of operation, 118). Her other symptoms have been so relieved that she had not called on the doctor for attention for over three months.

CONCLUSIONS.

1. Every irregular tumor of the thyroid, no matter how small, should be removed, as only by following this line of procedure can we hope to save the lives of those having malignant growths.

2. Every regular tumor of the thyroid causing symptoms other than deformity should be resected when, after a few months' medical treatment, its growth is not checked, and no improvement is shown.

3. Avoidance of trauma, care of the stump, free drainage and salt solution to keep full blood and lymph vessels, to prevent as far as possible wound absorption.

MUCOCELE OF THE APPENDIX.

WITH REPORT OF A CASE POSSIBLY CARCINOMATOUS IN NATURE.*

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The somewhat indefinite term mucocèle may be retained because it sufficiently suggests the general characters of a condition, the exact nature of which is probably not always the same. In some cases the pathology seems clear; in others there is much uncertainty as to the process of formation; but in all there is a cyst-like appendix with mucoid contents. Such cysts, and in fact all kinds of cysts, of the appendix are comparatively rare. According to Kelly and Hurdon, Ribbert found six cases among 400 autopsies; Bryant, one case among 124 autopsies; Steiner, three among 2,286; Bordy, one among 523, and they themselves found sixteen cases recorded among 3,770 autopsies at the Boston City Hospital. I have seen but one well-defined case, that herewith reported, among about 2,000 autopsies.

The appearance of the diseased appendix is that of a rounded or pyriform cyst with a more or less definite constriction of the proximal portion of the organ. Sometimes the distal part or tip alone is dilated; in other cases the whole appendix is enlarged. The lumen may be completely occluded at the cecal end or merely narrowed. In some of the cases the obstruction was due to a kink produced by a bend or by a fibrous band. In one, at least (Treves and Swallow), the cyst contents flowed out when the appendix was straightened.

The contents of the cysts are either of a muco-purulent, sero-mucous, serous or purely mucoid character. Occasionally they are blood-tinged. A review of the reported cases will show that in all probability the cysts are of different pathologic character. Some are undoubtedly merely inflammatory retention cysts, caused by occlusion of the mouth or proximal part of the appendix. A number of such have come under my observation, all being of moderate size and quite evidently of inflammatory origin. Exceptional cases, however, may be of such size and may have lost the characters of inflammatory retention cysts to such an extent that they may be classified as cysts and may admit of much doubt as to the mode of formation.

LITERATURE.

Leube,¹ in referring to these inflammatory retention cysts, states that the contents at first consist of tenacious mucous, and that later the sac contains only a watery serum, because when the appendix becomes much distended its wall becomes thinned and its vessels more superficial. Thus the watery portion of the blood may escape more easily, and the formation of mucus is reduced to a minimum (*hydrops processus vermiformis*).

Sonnenberg,² in referring to hydrops of the appendix and to retentive cysts, after detailing the results of obstruction of the appendix, states that the retained secretion does not always cause a severe disease of the appendix. If the obstruction occurs at a time when the lumen of the appendix is free, or when virulent micro-organisms are not present, there is no decomposition of the secretions. A continued accumulation of secretion takes place and overdistension of the appendix in the form of a retention cyst may occur. The mucous membrane becomes compressed, epithelial cells are thrown off and the connective tissue elements hypertrophy. The muscular and serous coats of the appendix also thicken. Hernious protrusions of the mucous membrane through the muscular layer are occasionally met with, as in the case described by Kelyack and Ribbert. Such protrusions are also found in cases reported by Shoemaker and Kelly and in my own.

Among others the following reports refer to cases supposed to have had this character of retention cysts:

Wenzel-Gruber³ describes a case in which the appendix was 10 cm. long, the spherical sac at the top being 4.2 cm. long, the constricted neck 1.8 cm. and the pedicle or proximal portion 4 cm. in length. The diameter of the sac was 5 cm., of the neck 2 cm. and of the pedicle 1 cm. The wall of the sac was from 2 to 3 mm. thick, as were the walls of the proximal portion. The serosa was thickened, the muscularis hypertrophied and the mucosa convoluted. The cyst was filled with viscid glassy mucus. The patient had tuberculosis of the lungs and intestines. The author notes that the opening of the appendix into the cecum, 1 mm. in diameter, was very small, but must have been thus narrowed by the chronic inflammation.

Feré⁴ presented a mucocèle of the appendix, found at autopsy on a man 55 years of age, dead of disease of the kidneys. The appendix was sigmoid and fusiform, with a circumference of 9 cm. at the central dilated portion. The length was 10.5 cm. The appendix was quite free from adhesions and normal in color. On opening the cecum there was seen a fluctuating tumor the size of a walnut, covered with reddish mucous membrane, which was almost ecchymotic in spots. The contents of this tumor were continuous with the contents of the appendix. On section of the unthickened walls of the appendix a colorless gelatinous mass, resembling boiled starch, was turned out. This was found to be composed of mucin and a few cells. The mucocèle was probably consequent on an obliteration of the appendiceal opening, due to ulceration of the mucous membrane at this point. The tumor distended the wall formed by the mucous membrane of the cecum and the appendix, and thus produced the intracecal tumor. The condition had caused no symptoms.

* From the William Pepper Laboratory of Clinical Medicine, The Hoche A. Hearst foundation.

1. Ziemssen's Cyclopaedia of the Practice of Med., vol. vii., p. 361.
2. Arch. u. Therap. der Perityphlitis. Leipzig, 194.
3. Arch. f. Path. Anat. u. Physiolog., 1875, vol. lxiii., p. 97.
4. Progres Med. Paris, 1877, vol. v., p. 73.

Other cases of cysts or of dropsies of the appendix are referred to by Bossard, Kraussold and Ribbert; and Wölfler describes a cyst found in an operation for herniotomy and which, on consideration of its characters, seemed to be a cyst of the appendix.

Bristowe⁵ calls attention to dilatation of the appendix which may occur when its orifice is obliterated or obstructed. "Then the appendix becomes elongated and plump (perhaps as thick as the little finger), presents often false diverticula (resembling, on a small scale, those of a sacculated bladder), and is distended with a glairy transparent fluid, the secretion of the mucous membrane."

Treves⁶ states that it is common to find the fore end of the appendix greatly enlarged and distended from the retention of mucus and other matters in the distal end of the canal.

Kelynaek says that this has not been his experience. He refers to one case under his own observation and to Fenwick's case,⁷ in which "the appendix was distended by a milky fluid, the communication with the cecum being obliterated."

Maylard⁸ describes a retention cyst of the vermiform appendix from a patient who had died of chronic Bright's disease. The appendix was free, four inches in length, normal for its proximal two inches, "but the distal portion was dilated into an egg-shaped, tense, cyst-like structure." The dilated part was shut off from proximal portion which communicated freely with the cecum. A mass of clear gelatinous substance was turned out of the cyst, leaving behind some "white, creamy-like material, in which was embedded a small calcareous concretion." The peritoneal surface was deeply injected with blood vessels. Maylard notes that Coats⁹ has described a similar specimen.

Shoemaker¹⁰ describes a cystic condition of the appendix, discovered postmortem, not having given rise to symptoms during life. The cyst of the appendix was 4 inches long and 1¼ inches in its broadest diameter. "A small portion of the distal end was not dilated, and at about the broadest portion of the cyst was a thinned area seemingly about to rupture." The cyst contained a "clear jelly-like mass."

Biggs¹¹ reports two cases of stricture of the appendix. One appendix was 9 cm. long and 2 cm. in diameter, and the lumen was occluded .5 cm. from the origin by firm fibrous bands. "The contents of the appendix measured 2 drams, were of a slightly pinkish color, and consisted of fat globules, granular matter, and cholesterolin crystals." The second appendix was obstructed by a kink near the tip, produced by traction of the peritoneum.

Hawkins¹² reports 2 cases of a condition which he calls "cystic appendix," which were cases of empyema of the appendix. He thinks these cysts may be caused by obstruction of the lumen due to kinking of the tube by an acute bend. He refers to a case reported by Treves and Swallow¹³ in which the cyst was 2 inches in length, very hard, and filled with mucus, which escaped when the appendix was made straight after its removal. The bent position had been maintained by old adhesions.

It is somewhat remarkable that in almost all the cases the condition was discovered accidentally at operations or autopsy or at least had occasioned no pronounced symptoms. If the accumulating liquid is of inflammatory nature, one might expect, in a greater number of the cases, active clinical symptoms, especially as the cysts often reach considerable size and not rarely have been attached by adhesions to surrounding structures. There is little doubt, however, that most of these cases were probably of inflammatory origin.

In some cases, a tumor was recognized in the right iliac fossa or the growth was of such size as to have made it probably palpable during life.

Coats¹⁴ mentions a case in which the appendix had been converted into a large cyst, measuring 5 inches in its long diameter. The cyst contained a tenacious material and the wall was thick and firm.

Wilks¹⁵ saw a case in which the appendix was dilated to the size of the ileum and distended with 3 or 4 ounces of white odorless mucus.

Wien¹⁶ reports a case of cystic degeneration of the appendix vermiformis, which caused a tumor in the right iliac fossa. There was great swelling along the crest of the ilium, and an opening near the posterior spine of the ilium, from which 3 or 4 ounces of quite clear mucus, occasionally stained with pus, were discharged daily. The discharge was said to look almost exactly like vitreous humor.

Guttman¹⁷ reports a specimen of enormous hydrops of the appendix, found on section of a woman 70 years old. The vermiform appendix was 14 cm. long and 21 cm. in circumference, and the opening into the cecum was completely constricted by strong fibrous bands produced by chronic inflammation of this part of the appendix. The secretion of the mucous membrane had become quite watery.

Montgomery¹⁸ describes a cyst of the appendix found in a woman during the operation of panhysterectomy. The cyst was 5½ inches long and 4¾ inches in its largest circumference. The contents were "apparently thin and watery." The cyst was removed.

Deaver¹⁹ case presented a cystic dilatation of the appendix, the size of a small orange, which was adherent both to the neighboring coils of small intestine and to the right broad ligament. The lumen of the appendix was entirely occluded ¼ of an inch from its cecal end. The contents of the cyst were quite clear and somewhat tenacious. The author says that the mucous membrane is usually smooth and generally greatly atrophied as a consequence of mechanical pressure. There is also marked atrophy of the lymphoid follicles. If the distension be but moderate, it is not uncommon to find the wall much thickened as a result of compensatory hypertrophy of the muscular coats and also of some connective-tissue hyperplasia.

Occasionally, as in a case reported by Fowler,²⁰ there are active symptoms which necessitate operation. In Fowler's case the dilated portion, about the size of a small walnut, was at the distal end. There were no adhesions.

Though accurate studies of the pathology of the appendix have until recently been wanting, and especially in the class of cases above referred to, it is very probable

5. Reynolds's System of Medicine.

6. *Lancet*, Feb. 9, 1889, p. 208.

7. "Clinical Lectures," 1889.

8. *Trans. Glasgow Path. and Clin. Soc.* vol. iv, 1891-3, p. 111.

9. "Manual of Pathology," 2d ed., p. 753.

10. *Occident. Med. Times*, 1892, vol. vi, p. 387.

11. *Med. Rec.*, 1893, vol. xliii, p. 536.

12. "Diseases of the Vermiform Appendix," London, 1895.

13. *Lancet*, Feb. 9, 1889.

14. *Glasgow Med. Jour.*, 1875, vol. viii, p. 126.

15. Quoted by Pagge, vol. ii, p. 174.

16. *Med. Rec.*, 1880, vol. i, p. 44.

17. *Deutsch. med. Wochts.*, 1891, vol. xxii, p. 260.

18. *THE JOURNAL A. M. A.*, vol. xxix, p. 174.

19. "Treatise on Appendicitis," Philadelphia, 1900.

20. "Treatise on Appendicitis," Philadelphia, 1894.

that most of the cases cited were retention cysts with inflammatory contents. Every one who has studied series of appendices must have encountered minor grades of cystic distension with contents of mucopurulent character. More advanced stages may cause empyema, and hydrops may occur in the appendix, as in the gall bladder.

There is, however, some reason to believe that there exists a quite different sort of dilatation of the appendix with which the inflammatory form may readily be confused. Long ago (1867) Rokitsansky reported four cases which he regarded as instances of colloid cancer and in which the gross appearance was that of cysts of the appendix. Virchow described these cases as colloid degeneration and figures one in his "Krankhafte Geschwülzte."

In Rokitsansky's series of cases²¹ the appendix was transformed into a thick-walled cyst, varying in size from 2 to 6 cm. in length and from 1 to 2 cm. in diameter. The wall was made up of fibrous tissue, which replaced the coats of the appendix. The inner portion of this capsule was a loose areolar layer, with brownish pigment here and there, and in places it was lamellated. His observations pointed to the fact that this layer might be the remains of an atrophied reticulum. The contents of these appendices consisted of a whitish-yellow gelatinous substance, supported in two cases by a fine reticular network, with small rudimentary blood vessels visible in places. After considerable discussion of the subject, Rokitsansky comes to the conclusion that this affection is a colloid-cancerous degeneration of the appendix, and that the tension of the mass of gelatinous carcinomatous material causes a dilatation of the walls of the vermiform process, with a consequent transformation into a fibrous capsule.

At the time of Rokitsansky's report little was known regarding the occurrence of carcinoma of the appendix, only two cases, those of Merling (1838) and of Prus (1865), having been reported. Recently, however, a considerable number of cases have been recorded, and Kelly and Hurdon tabulate a total of 52, including 2 which were designated endothelioma. They refer to Rokitsansky's cases, though erroneously stating that these were not examined histologically.

In 1884, Draper²² reported a case of colloid cancer of the appendix vermiformis. "The upper third or head of the appendix was enlarged and dilated to such a degree that externally it was of the size and shape of a large plum; its cavity, deeply injected, was irregular in its surface, and would admit the little finger. The opening to the intestine from the appendix was also dilated. The thickened wall of this enlargement presented the characteristic appearances of colloid disease." The tumor had caused symptoms and was probably the cause of death.

The features of this case differed somewhat from those usually described. The thickening of the walls of the diseased appendix and the dilatation of the cecal opening contrast strongly with the usual conditions.

Vimont²³ reports a case of mucocele of the appendix, found at the autopsy of a woman who had been operated on for bilateral gelatinous cysts of the ovary, which had ruptured into the peritoneal cavity. The tip of the appendix was found attached to the uterine cornus. The shape of the appendix resembled that of the stomach, with the small end attached to the cecum by a

small pedicle. The appendix was 11 cm. long and 12.5 cm. in circumference at the larger extremity. The contents were gelatinous, like boiled starch, and weighed 38 grams. The walls of the appendix were thickened, whitish, and at one place presented two small papillomatous masses. The author asks if this dilatation may not have been due to compression caused by the ovarian cysts.

This case even more definitely establishes the neoplastic nature of certain mucoceles.

Baillet²⁴ exhibited a cyst of the appendix found during an operation performed to remove a papillomatous ovarian cyst. The orifice of communication with the cecum was occluded. The cyst was found to be made up of mucoid tissue, embedded in which were many large cavities lined with non-ciliated cylindrical epithelium.

PERSONAL CASE.

The case which came under my own observation occurred in a woman aged 50, who had had glycosuria for a number of years and finally died of rapidly developed acidosis. I had not seen her during life, but made the postmortem examination, at which the enlarged appendix was discovered.

Autopsy.—Performed March 18, 1890.

The body was that of a very large white woman, probably 5 ft. 10 in. in height, and quite fat. Rigor mortis was well developed. On section into the body, the subcutaneous fat was found excessive, being in places as much as an inch and one-half in thickness. The fat itself was of a light yellow color, and the muscles were rather lighter colored than normal. The pleural cavities were free of exudation, and there were no adhesions. The anterior mediastinum was occupied with a considerable excess of fat, so that the heart and pericardium were completely covered. On section into the pericardial sac, a little clear fluid was discovered. The epicardium contained an excessive deposit of fat at the auriculo-ventricular furrow on the right side and over the root of the great vessels, but not much anywhere else. The coronary vessels were distinctly seen as white streaks, the whiteness being due to the fibrous character of the walls of the vessels. The root and larger branches were so sclerotic that when cut transversely and compressed they immediately sprang open from the stiffness of their walls. The heart muscle was flabby on both sides, and there were some fatty patches here and there. The endocardium was white in places, and there were marked patches of atheroma in the anterior mitral leaflet, as well as in the root of the aorta around the mouths of the coronary vessels and at the edges and floor of the sinuses of Valsalva. The valvular orifices were normal, as were also the leaflets of the aortic and pulmonary valves. The tricuspid leaflets showed slight thickness at the edges.

The lungs were congested at the bases and somewhat edematous, but there was no marked change.

The abdomen contained an immense quantity of fat in the mesentery and omentum. The gastro-intestinal tract presented no abnormalities, except in the region of the appendix. The latter was found greatly distended in a somewhat cystic fashion, and at one point a small hernious protrusion of the mucosa, through a defect in the serous and muscular coats, causing a clear vesicular projection of about the size of a grape seed, was discovered. The mouth of the appendix seemed to be occluded, but the bowel was kept unopened for subsequent dissection. The coils of intestines were everywhere more or less matted together by thin, veil-like adhesions, but there were no gross adhesions of any sort.

The liver was much enlarged and compressed by the ribs (*Schnur Leber*). On section, its substance was rather flabby, and spots and streaks of light color were discovered. There was evidently some slight sclerosis and also a considerable degree of fatty change.

21. *Med. Jahrb.*, Wien, 1867, vol. xlii, p. 179.

22. *Boston Med. and Surg. Jour.*, 1884, vol. ex, p. 131.

23. *Bull. Soc. de la Soc. Anat.*, Paris, 1887, vol. lxi, p. 608.

24. *Bull. de la Société Anat. de Paris*, 1891; 55, vol. v, lxxi, p. 67.

The pancreas was soft and presented no macroscopic change. The spleen was enlarged, fully twice its normal size, and the capsule was rather hard. The substance was soft and rather light in color, with spots of dark, almost hemorrhagic, appearance. The splenic artery was atheromatous in a high degree, and the splenic vein greatly increased in size. The kidneys were a little enlarged. The cortex was rather wider than normal, and the substance deeply congested. There was no definite visible disease. The suprarenal capsules were normal.

The abdominal aorta and its branches, as far as they could be felt, were sclerotic, though much less so than the splenic artery.

The uterus and its appendages were normal.

Description of Cyst.—The appendiceal cyst was found to be about 2½ inches in length and a little over 1 inch in diameter at its thickest part, which was near the middle of the organ. The cyst extended from the cecum to the tip of the appendix. At the cecal attachment the lumen was occluded and the expansion to the cyst was sudden, as if a much enlarged appendix had been constricted at its origin by a tightly drawn encircling ligature. The unopened cyst was quite firm and elastic, giving the impression of a sac tensely distended with gelatinous matter (Fig. 1). The wall was white and glistening on the outside, and the small blood vessels showed plainly in the serous covering. On transverse section, the cyst was found to be of semi-solid consistence; its walls tough and fibrous, 1 to 2 mm. thick, and in most places cleanly separated from the whitish or opalescent gelatinous contents (Fig. 2). The latter were easily shelled out when the thickness and firmness of the walls prevented their collapse, leaving a firm shell.

Microscopic Examination.—Microscopic examination showed the wall or capsule of the cyst to consist of a thickened and fibrous muscularis and serosa (Fig. 3). The submucosa was of loose areolar character, containing considerable leucocytic infiltration and new-formed spindle cells. The mucosa was nowhere intact. In its place was found a layer of varying thickness, composed of polymorphous epithelial cells without definite arrangement. Generally this epithelial lining was thin and in some places wanting; in a few places it was more massive, and at such places there could be traced into the gelatinous cyst contents, irregular extension of columns or strata of epithelial cells.

Cyst Contents.—The contents of the cyst were made up of a lamellated gelatinous substance of compact character. Between the lamellae were found cells (leucocytes) and many minute spherical bodies staining deeply with hematoxylin (calcareous spheres, Fig. 4), and here and there masses of irregular epithelial cells or less frequently ill-defined glandular acini. While the epithelial cells were more numerous near the periphery, that is, just within the capsule, they could be found at the very center and scattered everywhere through the gelatinous substance. There was no evidence of a well-developed reticulum, but in places the irregular course of the gelatinous lamellae and the presence of short strands of spindle cells lying end to end suggested an old reticular arrangement. Nearly all the cells within the gelatinous material were degenerate, the groups of epithelial cells in particular.

The appearances strongly indicated some active cellular process with mucoid degeneration rather than an exudation from a diseased, but more or less intact, mucous membrane. The presence of acini deeply embedded in the gelatinous material and of irregular heaps of polymorphous epithelial cells further confirmed the suspicion that the process was akin to that of gelatinous carcinoma elsewhere.

There was no evidence in any of the sections of invasion of the walls of the appendix by a heterotopic epithelial process, though here and there in the submucosa small collections of epithelium-like cells could be identified. It is possible that a more extensive sectioning of the appendix might have discovered definite invasion, but at the time when the sections were made no suspicion was entertained of a possible malignant nature of the condition.

It may be recalled that in some of the reported cases, such as that of C. C. Norris,²⁶ but little invasion of the walls was

evident, the growth appearing, in the main, as a mass within the lumen of the appendix.²⁶

Chemical Examination.—Chemical examination of the contents of the cyst showed the presence of considerable quantities of calcium which the microscopic examination had indicated. The fact that the mucoid material was a mucoprotein of the same general character as those met in gelatinous tumors of the ovary and the like seems to me of some importance, though not a certain proof of the nature of the condition.

Dr. Edsall reported his chemical study of the cyst contents as follows:

"The substance from the interior of the appendix was (after preservation in alcohol) of somewhat the same consistency as a dense jelly. It was of grayish-white color, partially opaque. It was soluble in water, forming a slightly glistening solution. On boiling, the solution became opalescent, but did not coagulate. It did not coagulate on the addition of acetic acid. Absolute alcohol produced a precipitate which was still readily soluble in water after standing under alcohol for more than 24 hours. After boiling with 2 per cent. sulphuric acid, the substance reduced Fehling's solution readily. The lack of coagulation after adding acetic acid is sufficient to indicate that it was not mucin; the solubility in water distinguished it from colloid. The reactions are those characteristic of pseudomucin. After allowing the preserving alcohol to evaporate from two small portions of the substance, these portions were weighed, incinerated, and the calcium of the ash determined. In the two instances the weight of the calcium (as Ca O) was, respectively, 1.1 per cent. and 0.85 per cent. of the total."

It must be admitted that the nature of the process in the appendix I have described is somewhat uncertain. At first I was disposed to think it simply a dilated appendix filled with mucoid material unusual in amount and character. Closer study, however, and in particular the discovery of irregular acini, epithelial tubular structures and collections of epithelial cells scattered everywhere through the gelatinous substance made me suspicious that the condition might be allied to colloid carcinoma. A review of the scant literature of the subject and especially the features of the cases reported by Vi-mont and Baillet seem to lend some support to my suspicion.

DISCUSSION.

DR. WALTER L. BIERRING, Iowa City, Iowa, said that he had seen only one case that bore any resemblance to the interesting condition described by Dr. Stengel and this was evidently not identical. An enlarged appendix, obtained at operation, measured 3½x1½ inches, and resembled a retention cyst, the entire mass having an elliptical form. The content was composed entirely of gelatinous mucoid material; at first it was thought to be purely an evidence of a perverted secretion of the lining epithelium due to chronic inflammation, following which the excessive mucoid substance had become retained in the dilated appendix, but the fact that portions of the mucosa and the other coats of the appendix were replaced and invaded by this same material made it appear, in part at least, like a retrogressive tissue change. Dr. Bierring said that the question

26. Since the above was written, an interesting specimen has been shown me by Dr. A. J. Smith, to which I am permitted to refer by his and Dr. B. C. Hirst's courtesy. Dr. Smith writes as follows:

"Appendix was removed in Howard Hospital in June, 1905, by Dr. B. C. Hirst, from a negro woman; character of case was not appreciated prior to operation. The woman was supposed to have fibroid pelvic growths. At operation both ovaries were found much enlarged and the seat of widely infiltrating papillary adenocarcinoma, with surface papillary extensions, with both tubes and peritoneal surface of uterus similarly involved. Appendix was free, short, with smooth and pale and glistening exterior, but with distal extremely distended into a small rounded cyst-like dilatation. On section the latter was found filled with clear mucus, the walls grossly showing no thickening save at one or two points where there were tiny white subserous nodules, which may possibly be foci of starting invasion from the cancerous growth of the genitals."

The appearance of the gross specimen was strikingly similar to that of my own.

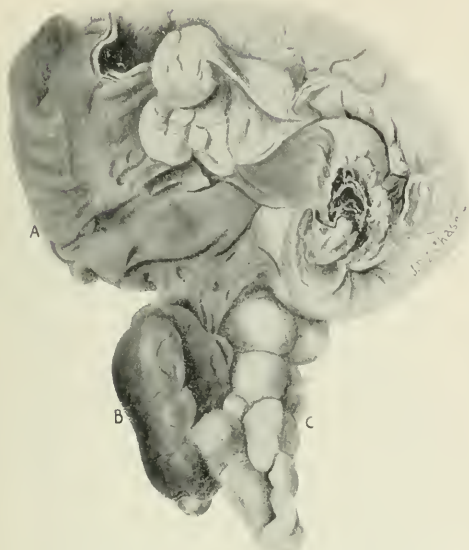


Fig. 1.—Slightly reduced view of the cecum (a) and appendix (b). The mesentery of the appendix was heavily loaded with fat (c).

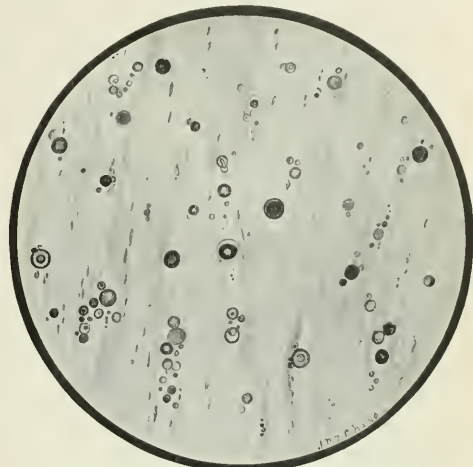


Fig. 4.—Calcareous spheres imbedded in the gelatinous substance within the appendix. Zeiss. oc. 1; obj. 1/12. Specimen stained with hematoxylin.

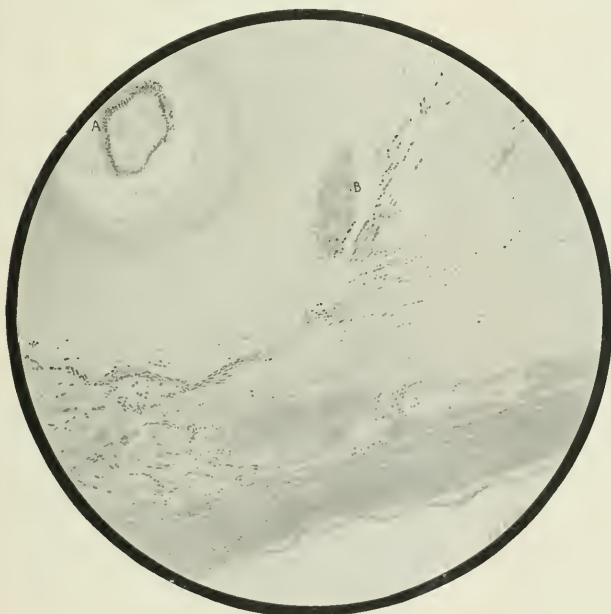


Fig. 3.—Section of the wall of the appendix and part of the substance within. Toward the center of the appendix is seen (a) an acinous or section of a glandular tubule; at (b) an irregular mass of epithelial cells suggesting by its position and the relations of adjacent structures that it had been separated from the mucosa. No remains of normal mucous membrane are observable.

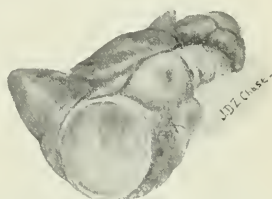


Fig. 2.—Transverse section of the appendix showing the stiff walls and opalescent mucoid contents. Life size.

The Value of Brief, Pointed Practical Articles.—Dr. George J. Monroe said in the *Cincinnati Lancet-Clinic* about a paper which he wrote: I am not gifted with a large vocabulary of words, yet on reading the first paper I prepared I found that it took me fifty-four minutes to read it. I had not then said all I wanted to. I began to eliminate and condense. I rewrote the paper. I found that it took thirty-two minutes to read this paper. Again I rewrote the paper, and on reading it this time I found that it only required nineteen minutes. I compared this paper with the first and second, and I was surprised to find that I had really said more than I had in either of them. This will apply to the majority of papers read before medical associations. The greater number of them

could be materially condensed and yet contain all that is expressed in the long papers. How many papers we find that are filled with useless matter that has no relation to the subject. What cares the busy doctor about a lot of statistics and data (that have been published elsewhere and that can be looked up by anyone interested)? We want to learn the best way to diagnose and treat these diseased conditions.

PLEXIFORM NEUROFIBROMA.*

FRANK B. WYNN, M.D.
INDIANAPOLIS.

The plexiform type of neurofibroma is considered by Recklinghausen, Kyrieleis, Kriege, Hurthle, Teichert, Westphalen and others to arise invariably from the connective tissue of nerve trunks. In opposition to this view, Lahmann maintains that such neoplasms may not only originate in the connective tissue of the nerve trunks, but also from that of the blood vessels or of the skin glands or hair follicles as well. His findings have been corroborated in whole or in part by Philippon, Du Mesnil, Verneuil and Löwenstein. Bearing on this mooted question, the following case may present some features of interest:

Family and Personal History.—R. E., the unfortunate subject of this report (Fig. 1), is aged 19 years. His parents,



Fig. 1.—Photograph of the patient.

five brothers and two sisters are living and healthy. There is no hereditary taint. His training in an institute for the blind was thorough, and, all things considered, he is exceptionally bright and well formed. He has never suffered from any malady except the one described.

History of Case.—Undue prominence of the eyeballs was noted at birth. Almost at once there developed a catarrhal conjunctivitis, accompanied by extreme photophobia. Later keratitis arose, followed by ulceration of the cornea with subsequent fibrosis. From all that can be learned blindness must have supervened at a very early age.

Swelling of the eyelids, especially the upper, was an early manifestation, as indicated in a photograph taken at 2 years of age. At 8 the eyes were closed. Three years later (1897) the bulging and bagging of the upper lids became so great that surgical measures were instituted. A large section of the redundant skin was removed with a lemon-sized mass of neoplastic tissue from either orbit. Gradual recurrence of the growth followed the operation.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

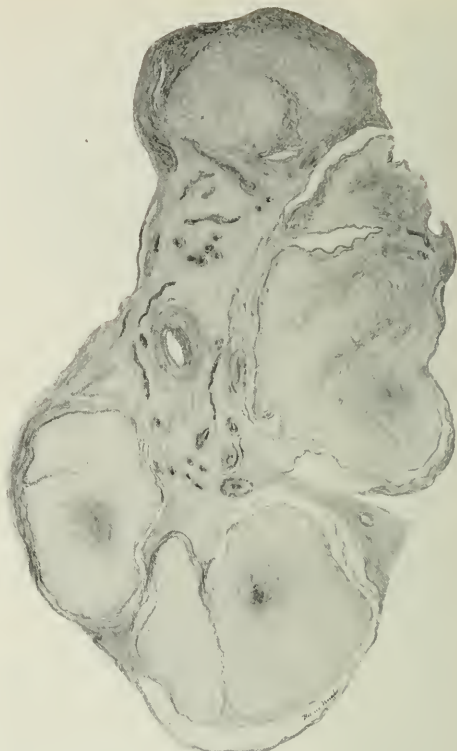


Fig. 2.—Plexiform Neurofibroma. Showing arrangement of five cords around the large vessel ($\times 12$).

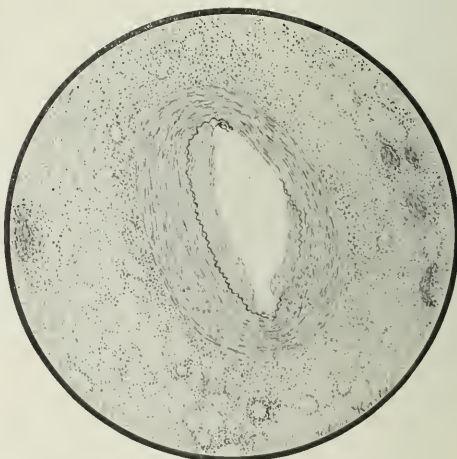


Fig. 4.—Large vessel in which is shown a nodular arteriosclerosis.

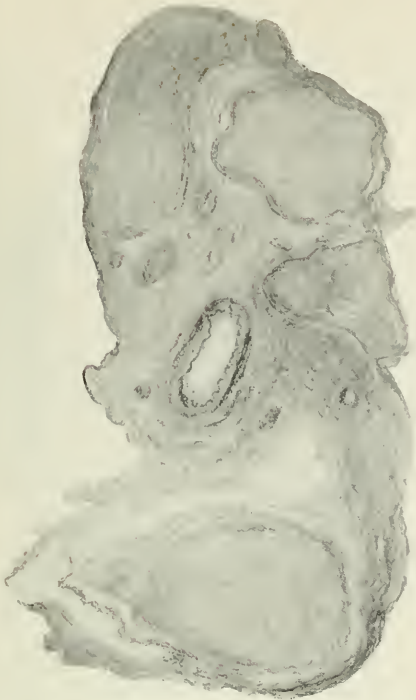


Fig. 3.—Showing arrangement of four cords about a large vessel ($\times 8$).

About the fourth year of age tenderness was first noted over the right temporo-parietal region and at a point midway between the mastoid prominence and the occipital protuberance. In these respective regions there slowly developed a dense, diffuse enlargement, to which the skin soon became attached. Within the past eight years growths precisely similar in size and location have appeared on the left side of the head.

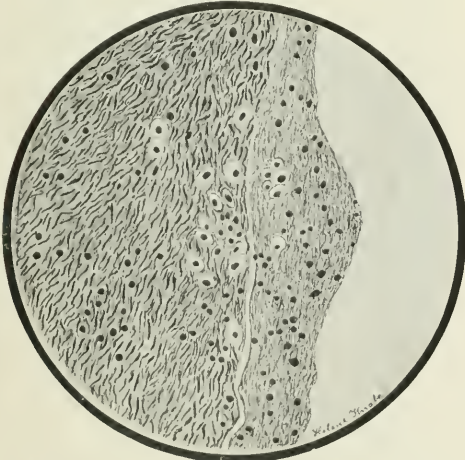


Fig. 5.—Same as Fig. 4, under high power showing degenerative change in intima and media.

A few years following the appearance of the growths in the orbits and on the skull, irregular, easily-movable masses developed in the subcutaneous tissue of the right and then of the left cheek. Extension took place over the angle of the right jaw into the parotid region. More or less tenderness has characterized the growths wherever found.

Status Præsens.—Weight 98 pounds, height 5 feet 1 inch. The bones are small; trunk and extremities delicately shaped. Sensorium clear. Deficiency of musculature and adipose tissue. Examination of the nervous system and of the thoracic and abdominal viscera gives negative findings. There is some pallor of the skin. A blood examination gives hemoglobin, 78 per

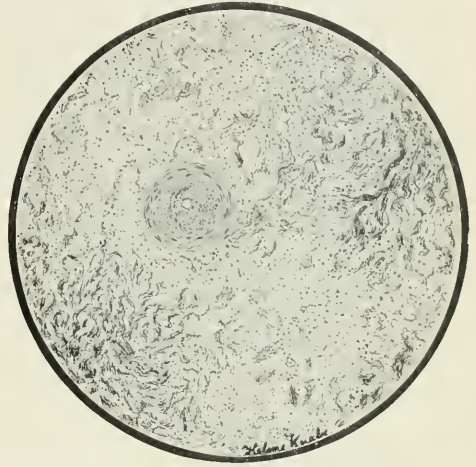


Fig. 6.—Showing fibrous structure of growth and small vessel in which there is extensive subendothelial proliferation.

cent.; red cells, 4,470,000; leucocytes, 10,400. The striking thing on inspection is the gigantic head on a dwarfed body. The measurements of the head are: Circumference, 26 inches; anteroposterior diameter, $9\frac{1}{2}$ inches; transverse diameter through temporal region, $8\frac{1}{2}$ inches.

Over each temporo-parietal region and extending slightly on to the forehead are palm-sized enlargements intimately con-

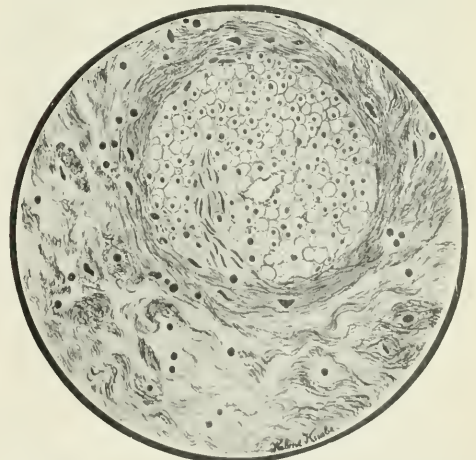


Fig. 7.—High power enlargement of vessel shown in Fig. 6. Subendothelial proliferation.

nected with or a part of the bones. Just posterior and superior to the mastoid prominence on the right side is an egg-sized enlargement of similar nature. All these growths on the skull are characterized by tenderness, bonelike hardness and firm attachment of the overlying skin. The skin over these localities, and in fact wherever adherent to the underlying growth,

easily palpable, fill the orbital cavities. Similar flattened masses of hard convoluted cords are felt, freely movable in the pendulous folds hanging from either cheek.

Histologic Study.—The patient consented to an exploratory incision for the purpose of removing one of these masses for microscopic study and diagnosis. Through a two-inch incision



Fig. 8.—Showing two vessels with extensive subendothelial proliferation; red cells seen in one lumen; smooth muscle cells.



Fig. 10.—Low power showing transverse section of small cord in which is an area of smooth muscle fibers.

shows brownish, mottled pigmentation. Having the same distribution as the pigmentation are peanut to hazelnut-sized areas of epidermal thickening, resembling sebaceous warts.

The skin of the face hangs in great lobulated folds over the lower jaw and from the orbits on either side (dermatolysis). The lips are enormously thickened. The lower eyelids are

tortuous white cords from two to six millimeters in diameter were plainly visible. The resemblance to sclerotic vessels was very striking. The strands were of uniform thickness (not beaded) and loosely imbedded in the subcutaneous areolar tissue. An interesting fact is their arrangement in groups of from two to five strands, parallel and surrounding a large ar-



Fig. 9.—High power showing fibrillae in central portion of cords.

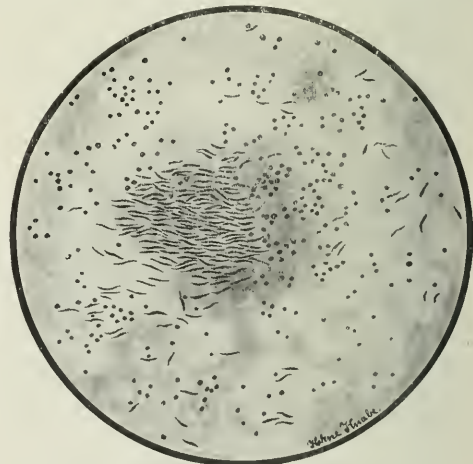


Fig. 11.—High power of Fig. 10 showing the nonstriated muscle cells.

everted and coarsely granular. No ocular structure is visible on the right, but on the left at the inner canthus the remnant of an eyeball is seen, which shows a densely sclerotic cornea and is capable of slight movement. Both eyeballs may be palpated as very hard and reduced in size. Firm fibrous adhesions bind the palpebral conjunction to underlying structures, except at the border of the lids. Irregular, hard, wormlike masses,

terry. (Fig. 2.) On cross section these cords presented a light, translucent, almost transparent appearance.

Microscopic study reveals several features of interest.

1. The predominant histologic structure of these cords (Figs. 9 and 10) is a dense fibrous periphery with a central meshwork of fine fibrillae, in which there is a sparse distribution of

nuclei, round and spindle-shaped. The arrangement suggests a resemblance to perineurial connective tissue surrounding a nerve bundle in which there has been proliferation of the endoneurium with degeneration of the nerve fibers. Staining with polychrome methyl-blue fails to give the reaction for mastzellen. Unna considers the presence of the latter cells as highly characteristic of neurofibroma.

2. After staining by the Weigert method, careful search has failed to reveal any nerve fibers.

3. Vascular changes: The large arteries (Fig. 4) show nodular arteriosclerosis with thickening of the intima and some degenerative change in the media. More interesting are the changes in some of the medium-sized smaller vessels. By extensive subendothelial proliferation a wide zone of large cells is formed, surrounded by a rim of fibrous connective tissue, mixed in some instances with smooth muscle fibers. (Figs. 6 and 7.)

Examined in cross-section under a low power, the first impression produced is of a nerve bundle surrounded by its perineurium. But close study reveals a central lumen with endothelial lining in all the various areas of this character, showing the vascular nature. If the contention of Lahmann and others that the so-called neurofibroma may sometimes arise from the connective tissues of blood vessels is correct, may it not be possible that the lesions as described above represent an early period in the evolution of the growth?

4. Another histologic factor of interest revealed in the study of the specimen is the presence of non-striated muscular tissue within the fibrous cords.

DIAGNOSIS.

In its clinical aspects the case described seems to be one of plexiform neurofibroma; that is, a new growth arising from the connective tissue of a nerve trunk. Studied pathologically, this is not proved, although it is possible that such complete degeneration of the nerve fibers may have occurred that histologic origin may be difficult to trace. On the other hand, the contention of Lahmann and others that these growths may arise from vascular structures is supported by the following findings in the case:

- (a) An absence of nerve fibers and of mast cells.
- (b) The arrangement of the strands parallel to and surrounding the arteries.
- (c) Extensive proliferation about the smaller vessels.
- (d) The presence of smooth muscle tissue in the tortuous cords which constitute the chief gross pathologic feature of the neoplasm.

ETIOLOGY AND PREVENTIVE TREATMENT OF SCARLATINAL NEPHRITIS.*

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PHILADELPHIA.

In presenting a paper on the etiology and prevention of scarlatinal nephritis, it is not my purpose to attempt any addition to our knowledge, but rather to emphasize the importance of already-known facts. In striving to control any morbid process, that system of therapeutics should be regarded as best which attempts the destruction of etiologic factors or seeks to mitigate their malign influences on the economy. In dealing with the acute infectious diseases the greatest advances have been made along the line of prevention.

This fact has received special emphasis in those diseases in which the habits of the several specific germs and their means of transmission have been carefully

studied. This has been notably illustrated in tuberculosis, diphtheria, malaria and, more recently, in yellow fever. Many diseases are rightly regarded as specific even in the absence of evidence sufficient to demonstrate any special organism as the active agent. Among diseases of this character scarlet fever stands pre-eminent. These diseases are best prevented by applying to them the same principles of isolation, disinfection and quarantine which are of value in preventing those maladies which are known to be specific. After the inception of such a disease, in the present state of our knowledge, our province is not to attempt to abort or to cure, but to recognize the possible complications and sequelæ in order that we may either prevent them or mitigate their severity. With respect to scarlatina this is especially true. The disease is self-limited and entirely uninfluenced by drugs. The formerly much-vaunted specifics, sodium benzoate, sodium salicylate, belladonna, etc., have been justly discarded as such. The greatest mortality and morbidity of scarlet fever must be ascribed to its complications and sequelæ, which are more far-reaching and produce more human wrecks than those of any of the acute infectious exanthemata.

SCARLATINA AND NEPHRITIS.

Not the least interesting of these complications and sequelæ is nephritis. As humanitarians, as well as physicians, it becomes our function to note carefully the etiologic factors concerned in the production of this serious ailment in an attempt to apply such knowledge to its prevention.

The types of this affection are exceedingly variable. From a careful study of the urine it may be learned that, in the beginning, there occurs a form of albuminuria, sometimes associated with a few hyaline casts and epithelial scales, which is more or less common to the initial febrile stage of nearly all the acute infectious diseases. Then there is noted the acutely septic form of kidney disease which occurs as a complication in the very malignant cases which are rapidly fatal. So rapid is the course that suppression of urine and death from uremia occur here often without edema. This type of nephritis is perhaps best described as a part of a universal sepsis, the toxin of which spends its greatest force on the renal tissue. Occurring in varying degrees of severity we have also that well-known form of renal involvement which makes its appearance during the third and fourth week of the disease or after convalescence has been established. This is the so-called post-scarlatinal nephritis, and occurs with a more or less insidious onset, and unless detected early, may lead to serious chronic kidney disease. There is also met what may be designated recurrent intermittent post-scarlatinal albuminuria. This form has received little if any attention at the hands of medical writers, and yet its existence must have been noted by those who have had a greater clinical experience than I. This form of albuminuria occurs in many of those cases which have suffered from even a mild post-scarlatinal nephritis. It is influenced greatly by exercise and diet. Excesses in both these factors act as excitants of an attack, while a reduction in both is universally preventive and curative. The condition, in my limited experience at least, is compatible with apparently robust health. I have noted it at least two years after an attack of scarlet fever. I have not been able to detect tube casts associated with it.

ETIOLOGIC FACTORS.

Scarlatina is a disease peculiarly suited to the occurrence of nephritis. During an attack of this disease,

* Read before the Northern Medical Association, Oct. 27, 1905.

covering a period of from four to eight weeks, perhaps, there is, during the first half of this time, at least, almost complete destruction of skin function. In this manner the disease is not entirely unlike a severe burn of the first degree both in appearance and in its effect on kidney substance. The kidney, already overworked and overirritated, is thus forced to compensate for this loss of skin function.

Other important etiologic factors may be found in the increased toxicity and the increased acidity of the urine. Of the two the former is by far the more important. Whatever the real poison of scarlet fever may be, without doubt it is removed from the economy via the urine, and, unfortunately, it seems to possess a peculiarly irritant effect on the kidney. This statement receives color from the fact that from apparently the mildest attack of scarlet fever may follow the most serious and persistent attack of nephritis. In fact, J. Lewis Smith records a case in which a mother, previously known to be healthy, while nursing her son who was suffering from scarlet fever, complained of symptoms which led to a urinary examination which revealed albumin and casts. Smith regards this as a case in which the nephritis was the only symptom, and cites it as an example of the severely irritating effect of the scarlatinal poison on the kidney. The patient in this instance made a perfect recovery. The frequency and seriousness of kidney irritation has received emphasis from the work of Sørensen, who has demonstrated postmortem renal lesions in patients who exhibited no clinical features of the disease. This statement seems to prove that the irritant is local and produces the morbid changes early. In order to be local it must be in solution in the urine. J. Lewis Smith also cites the cases of four girls in the same family who suffered from desquamation nephritis, after only one of the four had had scarlet fever.

The increased acidity of the urine can be readily determined by analysis. While not such a potent factor, its influence as a producer of kidney irritation can be readily assumed. It is probably the cause of the early albuminuria and, unless permitted to continue, does not cause serious degenerative changes in the renal tissue. The recognition of this fact has an important bearing on our efforts to prevent this affection. The relationship between the concentration of the urine and its acidity is a positive one, and therefore it, too, becomes an important etiologic factor.

Constipation, by preventing the escape of morbid material via the intestinal tract, thereby permits an increase of the toxins in an already overloaded urine. In this manner it may assume the rôle of an important contributory agent. The same may be said of diet. Dietary indiscretion may be nominated as the most important of any one single causal factor. This is especially true when highly organized proteid substances, such as meats, are too early added. These substances act by increasing the toxicity and the acidity of the urine.

The influence of cold can not be entirely disregarded. Its place, however, as a cause of scarlatinal nephritis has not been fully defined. In discussing this point Tyson remarks that "children have been found barefoot in the street with the eruption on them, and yet have escaped Bright's disease." In detailing the prophylaxis of the latter, the same author, however, proceeds thus: "Whatever may be the immediate cause of the renal involvement, it is certain that cold often becomes its exciting cause." Jacobi affirms that "exposure and sudden changes of temperature will always hold their place in

etiology, in the minds of those who do not forget to notice the living case besides the microscopic excrement." My own belief is that it is a factor of much importance in susceptible and anemic cases. The greatest danger lies in a poorly-regulated room temperature, sudden draughts and sudden chilling of the surface by careless bathing. By these means the blood is rapidly driven from the surface capillaries and intense congestion of the internal viscera results.

PREVENTIVE TREATMENT.

The patient should be placed in a well-ventilated room, the temperature of which should be about 68 to 70 degrees, and should be kept uniformly even. If possible, a room of southern exposure is to be selected. Draughts and sudden changes of temperature are to be avoided.

Diet.—A careful regulation of the diet is essential to the prevention of nephritis. The best diet for scarlet-fever patients is milk. It may be given modified to suit the age if the patient be a healthy bottle-fed baby. If a nursing, maternal milk should constitute the sole source of nutriment. The milk is to be secured with a breast pump. Older children may be given whole milk or milk diluted with a cereal water, lime water or Vichy. If digestion be weak the milk is best exhibited peptonized. However given, milk should be practically the sole article of diet for a period covering from four to six weeks or until desquamation is complete. Experience bears out the observation of Jaccoud that an absolute milk diet is of great service in preventing nephritis. Fruit juices serve a useful purpose by rendering the urine alkaline, and they are very refreshing. Toward the end of the period of desquamation freshly cooked tender vegetables, fruits and farinaceous substances may be cautiously added. Proteids may now be carefully given and only in small quantities. These are gradually increased in quantity and quality as tolerance is established. Throughout the course of scarlet fever, from the beginning, and, especially following each change in diet, the urine should be submitted to a careful daily analysis. On the appearance of the least trace of albumin a return to an absolute milk diet must be made at once.

Hydrotherapy.—Asked to designate any one single remedy which is of the greatest service in preventing scarlatinal nephritis, I should unhesitatingly name water. Its free and continuous use is indicated for the reason that, by increasing the amount of urine, it dilutes toxins and diminishes the acidity, thereby lessening kidney irritation. By stimulating catharsis and diaphoresis the elimination of toxins is facilitated. Water can be employed with advantage in three different ways: by month, balneotherapy and by enteroclysis, a combination of all these methods being productive of the best results. It is my practice to order a definite amount of water to be given with as much regularity as the food. It is best given between feedings. If plain water can not be readily taken use may be made of the various mineral waters as Poland or Celistin's Vichy, or, better yet, it may be exhibited as lemonade or orangeade. To a pint of either of the last two may be added, with advantage, a teaspoonful of cream of tartar.

A daily bath, given with friction, is a valuable adjunct. Aside from being the only means to be employed to reduce temperature, it increases the capillary circulation of the skin and thus relieves internal congestion. The bath must be given carefully, otherwise serious chilling of the surface will ensue and the purpose for which it was employed will be defeated. For this reason the full

tub bath is best, the child enveloped in a blanket being completely immersed. A dry blanket is warmed and held ready to receive the patient when the bath is completed. This is followed by free diaphoresis. If the full tub bath can not be used, it may be replaced by sponging, care being taken to sponge only one part of the body at a time, while the rest of the surface is kept covered. The temperature of the water is regulated by the temperature of the patient. It should never be more than five or ten degrees lower. For young children and infants the warm bath is always desirable. Its effect on temperature is often amazing and the diaphoretic effect is always beneficial.

Enterocolitis is a valuable prophylactic agent. From one to eight ounces of normal saline solution should be thrown into the rectum to be retained once or twice a day. It lessens thirst, reduces fever, prevents constipation, lessens toxemia and allays renal irritation.

Medicinal.—The only drugs which are of any value in preventing renal complications are alkalis and laxatives. Urinary antiseptics possess little if any controlling influence. The administration of urotropin is useless and expensive. The salts of the organic acids as the citrate or acetate of potassium are changed to alkaline carbonates in the blood and are eliminated as such in the urine. They thus overcome the acidity of the urine, thereby destroying an etiologic factor of some importance. They are given in the dose of five to ten grains. From the beginning of the attack and throughout the course of the disease minute doses of calomel should be given at intervals of every three or four days. These are best followed by broken doses of magnesium sulphate conveniently dispensed as follows:

| | | |
|----------------------------|---------|-----|
| R. Magnesii sulphatis..... | gr. v-x | 3-6 |
| Ac. acetici diluti..... | m. v | 3 |
| Syr. zingiberis..... | m. xx | 12 |
| Aque dest. q. s. ad..... | ℥i | 30 |

M. Sig.: A teaspoonful every two or three hours in water.

Intolixia.—As noted before, the specific organism of scarlet fever has not been determined. Of all the organisms found the streptococcus seems to be the one most often present. It is nearly always present in the discharge from an otitis media, and has been recovered from the renal tissue. For these reasons it is regarded by some authors as the primal cause of the complications. This view is accepted by Charlton, who, however, regards the presence of the streptococcus as the result of a secondary infection. For this reason he employs Moser's antistreptococcic serum early in the treatment of scarlet fever. Escherich and E. von Leyden comment favorably on the use of this serum for the control of the general symptoms, but assert that it does not influence the occurrence of complications. Moser himself believes that his serum has a beneficial influence on the grave forms of scarlatina, but that it does not prevent nephritis.

Pernicious Anemia.—Menetrier, Aubertin and Bloch report a case of essential pernicious anemia in which by feeding with red marrow and attention to general nutrition the number of red corpuscles increased from 680,000 to 3,000,000 in a short time. They conclude that in every case of grave cryptogenic anemia, when there is a myeloid reaction, however feeble, it is advisable to try medullary opotherapy. In certain rare cases where the myeloid reaction is marked this treatment by reinforcing and regulating the efforts of the organism itself may cause an increase of the blood globules and at least a temporary cure. Where there is total absence of myeloid reaction this treatment is absolutely without effect.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.*

SALINE CATHARTICS.

CHAPTER VIII.

A salt may be defined as a substance resulting from the chemic union of an acid with a base. For the present purpose we shall exclude from this classification salts of alkaloids and of other organic bases, and confine our definition to the popular conception of salts, or purgative salts.

The purgative salts, in contrast to the antiquity of many of the vegetable cathartics, are of but comparatively modern use, many of the inorganic salts being introduced into Europe by the Moors, but not coming into general use until after the time of Paracelsus.

Most of the purgative salts have a disagreeable, bitter taste, but when taken in an effervescent draught this bitterness is masked, and the effervescent salts have therefore come into great popularity. The widespread use of nostrums of this type, instead of the official effervescent salts prepared by the pharmacist, illustrates an unfortunate condition which exists without a sufficient reason. There is too much distrust of the pharmacist by certain physicians, who complain that pharmacists are unable to supply preparations equal to those of the nostrum-maker. This may possibly be true in isolated cases, but the proof to the contrary is furnished by the extreme simplicity of the preparation of the effervescent salts which the average pharmacist can prepare quite as well as the large manufacturer. Nevertheless the proprietaries of this class have an enormous sale.

It is unfortunately true that the physician often lacks confidence in himself and prefers to use the ready-made mixture rather than to exercise his own choice. This is degrading alike to medicine and to pharmacy.

It is a part of our present purpose to illustrate the ease with which the physician may choose his own agents in the proportion which seems best adapted to each individual case, with the assurance that any honest pharmacist can compound his prescription in a form equal in efficiency and elegance to the nostrums.

The preparation of the effervescent salts depends on the fact that tartaric and citric acids and sodium bicarbonate may be kept in contact without change when dry, but unite with effervescence when they are dissolved in water.

As an example of the ease with which effervescent salts are prepared, we give directions for making one, which, though extremely simple, is still the most complex of those which are official. The Effervescent Magnesium Sulphate. The same directions, with slight modifications, are used in preparing the other official granular effervescent salts and may be used when it is desired to include other salts or even caffeine and similar substances.

The magnesium sulphate is dried over a water bath, powdered and mixed with powdered citric and tartaric acids, then with the sodium bicarbonate; the mixture is heated to about 95° C. in a dish placed in an oven until it becomes moist; it is then rubbed through an ordinary tinned iron sieve (which forms it into granules). These are then dried at a temperature of 54° C.

Does it seem credible that any pharmacist is unable to make so simple a preparation as that?

Many of the nostrums that are offered to physicians as effervescent saline mixtures are not even granulated, and some of them, at least, depend entirely on the use of the cheaper tartaric acid and sodium bicarbonate to produce effervescence. Mixtures of this kind can be prepared extemporaneously quite

* We have received letters calling attention to an apparent discrepancy in the dosage of codeln as given in Chapter II of this article, Dec. 23, 1905, p. 1953, and in Chapter III, Jan. 13, 1906, p. 118. In Chapter II, the dose is given as 1/20 of a grain, and in Chapter III it is given as 1/2 grain. In the first instance referred to it was the intention to give the dose of codeln as 3 m. (1/20 grain), when the drug is used as a sedative in expectorant mixtures. The average dose, of course, is generally double that of morphin, or 50 mg. (1/2 grain).

as readily as the frequently prescribed liquid preparations, and we shall give several typical prescriptions in connection with the descriptions of the various salts.

Constipation is by far the most common complaint of those who live in cities. While the rational treatment consists in attention to the diet and other hygienic measures, for the most part, it is so much easier to read one of the innumerable advertisements which depict the terrible consequences of constipation, and the one certain means of escape therefrom, that the credulous are inclined to accept such statements as true, and, in a way, lionize themselves because of the dangers they have encountered and escaped.

Any attempt merely to enumerate the financially successful nostrums of this type involves one in immediate difficulties, because of the enormous number of those advertised to the public, while those of this type advertised to physicians are scarcely less numerous.

The principal purgative salts and their indications are so well known that we shall confine ourselves mainly to enumerating some of them, with suggestions for the forms in which they are available, and a few of the combinations which may be found useful. We shall have occasion to contrast the well-known actions of these drugs with the absurd claims made for some of the nostrums which they compose.

MAGNESII SULPHAS.—U. S.—Epsom Salt (by which name it is most widely known) is so called because it was obtained by evaporating the water of Epsom Springs. It is one of the chief constituents in many famous purgative waters, such, for instance, as the Hunyadi of Hungary.

Average dose: 15 gm. (4 drams).

MAGNESII SULPHAS EFFERVESCENS.—U. S.—(Its preparation has been detailed.)

Average dose: 15 gm. (4 drams).

MAGNESII CARBONAS.—U. S.—A bulky, white, odorless and nearly tasteless powder, which is insoluble in ordinary solvents.

Average dose: 3 gm. (45 grains).

MAGNESII OXIDUM.—U. S.—This, commonly called magnesia, or calcined magnesia, closely resembles the carbonate in its several properties.

Average dose: 2 gm. (30 grains).

MAGNESII OXIDUM PONDEROSUM.—U. S.—This differs from the preceding only in being more dense, and therefore requiring a less bulky dose. It was originally known as Husband's magnesia.

Average dose: 2 gm. (30 grains).

LIQOR MAGNESII CITRATIS.—U. S.—This, almost always called "citrate of magnesia," is one of the most agreeable of the purgative preparations, but it does not keep well, and should therefore be ordered freshly prepared.

Average dose (as purgative): 360 c.c. (one bottle).

Magnesium carbonate is frequently employed as an ant-acid; the oxids, light and heavy, are ant-acid and laxative. The oxids should be given with a large excess of water. They are much used for children.

POTASSII ET SODII TARTRAS.—U. S.—This is commonly called Rochelle salt because it was first manufactured in the city of Rochelle. It was discovered by a pharmacist named Seignette and is often called Seignette salt by the French.

Average dose: 8 gm. (120 grains).

PLIVIS EFFERVESCENS COMPOSITUS.—U. S.—Seidlitz powder is the form in which Rochelle salt is most often used.

SODII PHOSPHAS.—U. S.—This has come into very general use of late years in the treatment of chronic constipation, and it is popularly believed to exert a special influence on the liver. It is soluble in about six parts of water.

Average dose: 2 gm. (30 grains).

SODII PHOSPHAS EFFERVESCENS.—U. S.—This is much more pleasant to take than the ordinary sodium phosphate, of which it contains 20 per cent.

Average dose: 8 gm. (120 grains).

SODII PHOSPHAS EXSICCATUS.—U. S.

Average dose: 1 gm. (15 grains).

A preparation so well known as sodium phosphate requires little therapeutic notice, but we wish to offer some suggestions as to the forms in which it is available.

The effervescent salt leaves little to be desired when one wishes to employ it as a laxative, but it is not well adapted to use with hot water.

We give below several examples of its combinations. In some of these lithium citrate is used. Of course, these may be endlessly varied, using the dried magnesium sulphate, for instance, instead of the dried sodium phosphate.

Caffein is often given with effervescing salts, and this or other similar substances may be incorporated without materially changing the formulas.

| | | |
|--------------------------|-------|-----|
| R. Lithii citratis | 3i | 50 |
| Sodii phosph. | 3viii | 300 |
| Sodii bicarb. | 3x | 400 |
| Acidii tartarici. | 3vi | 250 |

The dose of this is about 4 gms. (60 grains).

For use with hot water the following extemporaneously-prepared mixture is preferable to the official effervescent salt:

| | | |
|---------------------------|----|-----|
| R. Potassii bitart. | 3x | 400 |
| Sodii bicarb. | 3v | 200 |
| Sodii phosph. exsic. | 3x | 400 |

The dose of this preparation is the same as that of the one preceding it. In case a more alkaline mixture is desired the amount of sodium bicarbonate may be slightly increased and the potassium bitartrate correspondingly decreased.

LIQOR SODII PHOSPHATIS COMPOSITUS.—U. S.—This represents 100 per cent. of sodium phosphate.

Average dose: 8 c.c. (2 fluidrachms).

To make this solution, the Pharmacopeia directs that 100 gms. of sodium phosphate and 4 gms. of sodium nitrate be triturated together in a mortar with 13 gms. of citric acid, until completely liquefied, then sufficient water is to be added to make the product measure 100 c.c.

Although this requires no more skill than the weighing of the salts, the Alta Chemical Company pretends that it thus secures "An Ideal Nerve Tonic, Laxative, Adalgesc! Stimulant of Glandular Function, adjuvant to all organic remedies indicated in the organism! relieving Hepatic Congestion, supporting Sexual Power, regulating both excretion and secretion on a normal physiologic basis!"

The indications enumerated are far too absurd to repeat, but as an example of this word waste we quote the following: "Especially reliable as a painless cure for the Morphin Habit!" Does this insolent company suppose that we are bereft of every vestige of intelligence when it insists on telling us such manifest falsehoods as we have quoted, or that Rheumaggon, consisting of sodium iodid and sodium phosphate, is "a specific in all cachectic disorders!"

Surely, Baron Munchausen, in his wildest flights of fancy, never imagined anything more preposterously absurd.

When we see how simple is the preparation of the various effervescent salts, and remember that the Pharmacopeia provides reasonably high standards and readily applied tests for the purity of all official salts, with which all reputable manufacturers of chemicals comply, we see how absurd is the pretense of the nostrum makers that they have special processes and peculiar facilities for manufacturing products of superior quality.

LITHII CARBONAS.—U. S.—It is more than sixty years since Lipowit announced that this salt favored the solution of uric acid. Since then the lithium salts have been widely used, especially in combination with purgatives and diuretics, but there is no evidence that any benefits result from such combinations.

The lithium salts are of comparatively little importance according to the accepted authorities in therapeutics of to-day.

Average dose: 0.5 gm. (8 grains).

LITHIUM CITRATE.—U. S.—Is used for the same purposes and in the same dose as the carbonate.

LITHII CITRAS EFFERVESCENS.—U. S.—Is a convenient form for administering the citrate.

Average dose: 8 gm. (120 grains).

Lithium salicylate was made official in 1880 because of its asserted superiority in the treatment of acute rheumatism; it possesses no advantages over the other salicylates, but the nostrum makers having seized on it while the first reports of its successful use were being circulated, they continue to make the

most extravagant claims for it in their preparations. Cushty specifically denies that the salt has any especial solvent action on uric acid in acute rheumatism; this should be borne in mind when few circular pharmacology is under consideration.

Sal-lithin is typical of a host of nostrums which consist of lithium and purgative salts. It is made by the firm which exploits the thoroughly discredited bioplasm by such absurd misstatements and reprehensible methods. (See THE JOURNAL, vol. xlv, pp. 1587-1812.)

Sal-lithin, according to the advertisement in hand, combines lithium benzoate and citrate, 12.5 per cent., with sodium phosphate and other salts. "Unequaled in Uric Acid Diathesis," "Blood Cleanser," etc. It will be perceived that we have here nothing new, nothing original, and nothing which the practitioner can not obtain from any reputable pharmacist on his own prescription independently of this Bioplasm Company.

In the same circular we find on pages 4 and 5 an invitation in most undignified language to prove the untruthfulness of the assertions made regarding bioplasm; and then in order to save one even that slight trouble (really none at all) the evidence needed is furnished in the following: "Its origin, composition, and formula is published" (the grammar is theirs), "the only reservation being its working or cultivation formula. If this debars it for any one, such are also debarred from using all proprietary remedies, all synthetic products, or even the compounds of the Pharmacopeia, as each manufacturer holds his carefully designed and economic working formulas as a part of his stock in trade and a secret."

This misrepresentation in regard to the Pharmacopeia preparations is wholly gratuitous.

The number of uric acid solvents, each of which is the "most powerful known," is truly surprising. It is still more surprising that mankind continues to suffer from rheumatism and gout, nearly as much as they did before these "discoveries" were made.

Mr. J. LeRoy Webber, Ph.G., is credited by the Bristol-Myers Co. with originating sal hepatica, the really "most powerful" one. It is passing strange that so great a genius should continue to devote his time to supervising its manufacture, since any youth of common intelligence could certainly do it quite as well. This truly wonderful discovery of Mr. J. LeRoy Webber, Ph. G., is also useful, so we are told, in the treatment of "Fullness of Blood," likewise "Acidity of the Stomach," though most of us prefer some acidity of the stomach and not a little blood to all our arteries.

If further literature of a similar nature is desired, we suggest the careful reading of the *Uric Acid Monthly*, particularly with regard to the munificent offer for reports "suitable for publication."

It must be evident to the least observant that we are drifting far from the safe course in therapeutics when men, who have not sufficient knowledge to avoid these absurdities, so glaring that they become apparent on the first appeal to reason, thus exploit our profession and use us to dupe the public. Are we to continue in this degrading position or are we to assert our independence and demand common sense, at least, from those who seek to serve us? The arrogance of the nostrum vendors under the cloak of servility is become insupportable, and physicians should no longer tolerate such abuses.

While we have divided the cathartics (under which term we include laxatives) into two general classes, vegetable and saline, this has been done merely for convenience of grouping, and we shall now take up the more important laxatives and cathartics which have not been discussed.

HYDRARGYRUM CUM CRETA.—U. S.—Gray Powder.—This contains 38 per cent. of mercury (metallic) mechanically mixed with clarified honey and prepared chalk.

Average dose: 0.25 gm. (4 grains).

MASSA HYDRARGYRI.—U. S.—The well-known "blue mass" contains 33 per cent. of mercury (metallic) combined with glycyrrhiza, althea, glycerin, and honey of rose.

Average dose: 0.25 gm. (4 grains).

HYDRARGYRI CHLORIDUM MITE.—U. S.—Calomel is required by the Pharmacopeia to contain at least 99.5 per cent. of pure mercurous chlorid.

There is, perhaps, no drug which is better known than calomel, and we can afford to give it space in inverse proportion to its importance.

Average dose (as a laxative): 0.12 gm. (2 grains).

Despite the widespread use of the mercurials, their mode of action remains a problem. Some authorities assert that calomel must be converted into the oxid, others that small amounts of the bichlorid are formed, and that this is the active agent. The effect on the organism is not less a matter of dispute; pharmacologists usually deny that it causes an increase of bile-flow, as experiments, made by careful observers, on both man and animals with biliary fistula have failed to demonstrate any increase. Calomel acts as an antiseptic and the bile is thus protected from decomposition, while the increased peristalsis affords less time for its absorption. Some of the older clinicians, however, still hold to the theory that it really does increase the amount of bile secreted by the liver. However calomel may act, it is the best remedy we possess for that form of indigestion and constipation which is frequently called "biliousness."

Mercury and chalk, commonly called gray powder, does not occasion so much nausea as the other mercurials in common use, and is usually preferred for children who suffer with indigestion and constipation with considerable intestinal putrefaction.

The mercurials are contraindicated in chronic conditions, such as tuberculosis, and in the latter months of pregnancy. The use of calomel as a diuretic has been mentioned, and, while Wood pronounces it useful in chronic parenchymatous nephritis, others maintain that it is injurious, and Sollmann has recently suggested that great conservatism should be exercised in its employment. At any rate it should not be used merely for its purgative effect when nephritis exists, or only with great caution.

SULPHUR PRECIPITATUM.—U. S.—SULPHUR SUBLIMATUM.—U. S.—and SULPHUR LOTUM.—U. S.—Are the three forms in which sulphur is now official. Either the sublimed or the washed may be used as a laxative. The sulphur is slowly converted in the intestine into the sulphid, only to a small extent, which acts as an irritant, while the greater part of the sulphur remains insoluble and acts mechanically—merely by its bulk. Washed sulphur is an ingredient of compound powder of glycyrrhiza.

Average dose (of any of the three forms of sulphur): 4 gm. (60 grains).

(To be continued.)

Clinical Notes

ACUTE ABDOMINAL SYMPTOMS IN TYPHOID FEVER FROM INFLAMED MESENTERIC GLANDS,

TWO ILLUSTRATIVE CASES.

SIMULATING INTESTINAL PERFORATION AND OTHER ACUTE ABDOMINAL CONDITIONS.*

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Acute abdominal symptoms in typhoid fever have recently attracted considerable interest because of the importance of early diagnosis in intestinal perforation.¹

The literature is becoming filled with records of cases containing additions to our knowledge of diagnosis and treatment.² These studies have shown the varied symptomatology of intestinal perforation and have demonstrated that exploratory laparotomy for diagnostic purposes is more conservative than waiting, in doubtful

* Read before the Michigan First Council District Medical Society, Dec. 22, 1905.

1. Scott: University of Penn. Bull., May and June, 1905, p. 981.

2. McCrae and Mitchell: Johns Hopkins Hosp. Report, vol. x, Nos. 6, 7, 8, 9.

cases. As a result, an increasing number of patients have been operated on in whom no perforation was found. Almost every surgeon of experience has had one or more of these cases.³

I wish to relate the histories of two typhoid fever patients who had such pronounced abdominal symptoms that in one intestinal perforation was suspected, and in the other a complex of abdominal conditions—appendicitis, tuberculous peritonitis or typhoid fever complicated by one of these conditions. Laparotomy was performed in both instances, and in neither case was there any evidence of peritonitis, intestinal perforation or any of the other abdominal conditions suspected. The symptoms were ascribed to swollen, inflamed mesenteric glands in the region of the cecum.

I am indebted to Dr. John Lovett Morse of Boston for the privilege of reporting these cases:

CASE 1.—Typhoid fever; acute abdominal symptoms, on the thirty-ninth day simulating perforation; exploratory laparotomy; only inflamed mesenteric glands found to account for the condition.

Patient.—W. W., male, aged 26, was admitted to the Boston City Hospital May 20, 1903, on the ninth day of his illness.

Examination.—He gave an ordinary typhoid history and on admission had the usual apathy, flushed cheeks, characteristic tremulous, coated tongue, with red tip and edges, an enlarged palpable spleen and a profuse roseola. The temperature was 103 and the pulse 92. On the day following admission the Widal reaction was positive in a dilution of 1:80 in forty-five minutes, and the leucocyte count was 7,200.

Course of the Disease.—He passed through a moderately severe course of the disease, having a small rectal hemorrhage on May 29, the nineteenth day of the disease. At this time there was no complaint of pain, the abdomen was not distended, he was not restless nor delirious; his pulse was of excellent quality and not changed in rate, and the leucocyte count was 4,600.

On June 2, the twenty-third day, there had been no further rectal hemorrhage; the abdomen was not distended nor tender; the temperature was running with a wide diurnal swing and reaching a lower level.

On June 17, the thirty-eighth day, the note says "uneventful convalescence; patient now up and about the ward for three days." This indicated that the temperature had been normal for about ten days, that the diet had been increased to a simple mixed hospital diet, that the patient was doing light work about the ward and expected to be discharged in a day or two.

On June 18, the thirty-ninth day, early in the morning the man complained for the first time of "cramps in the stomach," which he said began late the day before. The pain was severe enough to keep him from sleeping, though not sufficient to make him complain to the night nurse. At 8 a. m., when seen by the house physician, he had a pale, anxious expression, a pulse in the neighborhood of 120 and a temperature of 100.6. His abdomen was moderately distended and tympanitic, with tenderness and resistance more on the right side. There was no nausea; the bowels moved freely after a soap-sud enema; the dejection was semisolid, light brown and without macroscopic blood. The leucocyte count, taken at this time, was 22,100. At 11 a. m. the patient was seen by Dr. Lund in consultation with Dr. Morse. He still had the anxious expression and pallor. The pain had persisted, more severe at one time than another, and indefinitely localized in the right side of the abdomen. There was moderate distension, slight rigidity, muscular spasm and tenderness. No masses were felt and the tenderness could not be definitely localized, although at times it seemed to be more marked in the right lower quadrant. The leucocyte count remained as high as in the morning, 21,400. The temperature had dropped a little, to 99, while the pulse remained in the neighborhood of 120.

A diagnosis of intestinal perforation (?) was made and immediate operation advised. The patient was transferred to the operating room at 3:30 p. m.

Operation.—Dr. Lund made an incision two inches long under cocaine anesthesia in the right linea semilunaris, and the abdomen was opened without incident. There was no free fluid. The gall bladder was found in normal condition. At this stage exploration of the abdomen proving painful, on the patient's request, nitrous oxide followed by ether was given. Examination in the right lower quadrant, to which most of the pain was referred after opening the abdomen, revealed a mass of enlarged mesenteric glands, some of them the size of small hen's eggs. Counter abdominal incision was made, over the tumor, to determine if any broken down glands were present. Considerable congestion, but no evidence of breaking down was found. The abdominal wounds were closed in the usual way. There was a good recovery from the anesthetic.

On June 20, the forty-first day, the surgical note states that since the operation the patient has been very uncomfortable, complaining considerably of pain; his abdomen has been markedly distended, in spite of free bowel-movements; there has been no vomiting.

By June 22, the forty-third day, the pain and distension had gradually decreased and there had been a steady improvement in the patient's general condition.

On July 6, the fifty-seventh day, "uneventful convalescence; abdominal wounds showing firm cicatrices; general condition good; patient anxious to go home; discharged at his own request to the surgical outpatient department."

Remarks.—In this case the abdominal symptoms developed suddenly, on the thirty-ninth day of the disease, at the end of what appeared to be a normally progressing typhoid convalescence. Pain was the most striking symptom. It developed insidiously, was not extreme, but was lasting and more severe at one time than another. It was indefinitely localized in the right side of the abdomen. Accompanying the pain there was tenderness on deep palpation, slight abdominal distension and spasm of the right rectus muscle. There were no signs of gas or fluid in the peritoneal cavity and no tumor was felt. Hemorrhage was ruled out by the free bowel movement without blood. Besides the local symptoms there was the general picture of collapse—dusky pallor, anxious expression and rapid pulse; and a marked leucocytosis. All the above facts, when considered together, made the diagnosis of intestinal perforation very probable and the exploration of the abdomen in our opinion justifiable.

CASE 2.—Typhoid fever; acute abdominal symptoms on the fifth day. Exploratory incision showed the condition to be due to inflamed mesenteric glands.

Patient.—M. L., female, aged 6, was admitted to the medical side of the Children's Hospital, Boston, on Sept. 7, 1904, on the sixth day of her illness.

History.—The history, given by the mother, was one of sudden onset with pronounced nervous and abdominal symptoms. On the day before admission the patient had complained of "pain in the stomach," and the mother noticed for the first time that her child's right leg was drawn up.

Examination.—The patient was seen in the surgical outpatient department and recommended to the house with the diagnosis, "typhoid fever or appendicitis (?) for observation."

The admission physical note states that the child was poorly developed and nourished; that her cheeks were flushed, and that her face had a pinched, anxious expression. There was photophobia, the pupils were equally dilated and sluggish in their reaction to light; the tongue was swollen and covered with a heavy white fur; the heart was not enlarged, was regular and rapid in action with sounds of good character; there were normal resonance and breathing throughout both lungs. Examination of the abdomen showed slight distension, with moderate tympany and general tenderness, more marked on the right side, where an irregular mass could be felt, below McBurney's point. There was considerable spasm of the muscles in the right lumbar region, the right thigh was drawn to one-third flexion, and the tendon reflexes were increased. Blood examination showed a hemoglobin of 85 per cent, and a leucocyte count of 13,800.

Course of Disease.—September 8, the seventh day, on the morning following admission, the record states that the patient had been very irritable and restless, crying out in delirium and also sharply when disturbed, but making no complaint at other times, although she appeared to be in pain. She had taken small amounts of nourishment without vomiting; the bowels had moved freely following a soap-suds enema. At the time of the examination she lay with eyes closed and right leg flexed. There was a pained expression and dusky pallor; the pupils were equal and reacted to both light and accommodation; there was rigidity of the neck and extremities, probably voluntary. Examination of the ears was negative. There were a few squeaky râles at the base of both lungs; the heart action was rapid, and the sounds were of good character; the abdomen was flat, lax and slightly more resistant in the right lower quadrant, where a freely movable tumor of the size of a walnut could be felt. The tenderness was more marked in this region, and there was evident pain on pressure over the mass, psoas spasm was considerable, motion at the right hip was limited and apparently painful. Rectal examination revealed a bulging, resistant mass, on the right, similar to that felt by abdominal palpation. The child was delirious and semi-comatose so that statements about pain were not reliable. The temperature ranged in the neighborhood of 105; the pulse was over 140. The urine was high colored, acid in reaction and had a specific gravity of 1015; there was a trace of albumin, no sugar and a few renal elements. The leucocyte count continued about the same, 13,400. The Widal reaction was reported negative, as would be expected, on the seventh day of this disease.

Operation.—The patient was seen by Dr. Stone, in consultation with Dr. Morse, and abdominal exploration was advised. The diagnoses made at this time were, in order of preference, appendicitis, tuberculous peritonitis or one of these conditions complicating typhoid fever.

The operation was performed by Dr. Stone. Ether was administered and the abdomen was opened by the "usual appendicectomy incision." The tumor was found to be a mass of enlarged, congested mesenteric glands, several of which were the size of walnuts. There was no evidence of perforation, peritonitis, or breaking down of these glands. The Peyer's patches were injected and thickened, as is usual in typhoid fever. The appendix was slightly congested as a part of the typhoid picture. The abdomen was closed without further operative interference. There was a good recovery from ether.

Postoperative History.—The child was restless and delirious during the night following the operation, but responded fairly well to stimulation. The temperature remained high and the pulse rapid, ranging between 160 and 170.

On September 12, the eleventh day, the patient continued weak and irritable, crying out sharply at times in delirium. She had no nausea and did not vomit, but had to be forced to take her nourishment. She had begun to show emaciation with a sunken appearance about the eyes; the respirations were rapid, out of proportion to the temperature and changes in the chest. The abdomen was very slightly distended and tender in the region of the wound. The leucocyte count was 5,200; the Widal reaction was positive in a dilution of 1-80. The urine was acid, cloudy, yellow and with a specific gravity of 1022. It contained a trace of albumin and a strongly positive diazo reaction; sugar was absent.

The patient passed through a severe course of the disease with profound toxic symptoms and a complicating otitis media.

On October 8, the thirty-fifth day, the clinical note says: "Improvement slow, temperature staying down; patient very weak, unable to sit up but for a few minutes at a time." She showed considerable emaciation and still had a purulent discharge from the right ear. The pulse was of good character and the appetite was improving.

On October 22, the forty-ninth day, the patient had gained sufficiently in strength so that she was "discharged relieved to the Convalescent Home."

Remarks.—The abdominal symptoms in this case occurred early, on the fifth day, in the course of a severe typhoid. At this time there was no roseola; the spleen was not enlarged

and could not be felt; the Widal reaction was negative; the heart action was rapid, instead of being relatively slow; there was a moderate leucocytosis; all of which made the diagnosis of typhoid uncertain. The presence of a tumor in the right iliac fossa still further complicated matters so that the real state of affairs never once suggested itself. Appendicitis was the preferred diagnosis of the physician as against tuberculous peritonitis of the surgeon, with in either case possibly a complicating typhoid fever. The diagnosis of tuberculous peritonitis was influenced by a history of failing health for the past two years.

The striking feature in the case was the tumor. If this mass had not been felt the condition might very well have been taken for perforation and peritonitis, as in the first instance. In regard to the other local symptoms, they were obscured by the intensity of the general nervous condition; however, the impression given was that there was a constant, severe pain, which was paroxysmal in character, localized in the right iliac region, the region of the tumor. How much the local symptoms influenced the general condition could not be determined.

As frequently happens after a diagnosis has been made positive by exploration, the question came to us: "Why did not we think of that before?" Those of us who had seen both cases were immediately struck by their similarity and convinced that the symptoms were due to the inflamed, mesenteric glands. We had the feeling that we might have diagnosticated the second case correctly and would certainly try to differentiate the condition in the future.

That acute abdominal symptoms simulating intestinal perforation and peritonitis could occur during the course of typhoid fever from swollen, inflamed mesenteric glands, has been thought probable for some time; definite statements in the literature on this point, however, are very few. Berg⁴ says that it is not uncommon for patients to develop all the clinical manifestations of a localized peritonitis at sometime in this disease. It is his belief that in some instances these symptoms may arise from stretching of the peritoneum by swelling of the mesenteric glands. Armstrong⁵ reports opening the abdomen in two cases without finding a suspected perforation. In one patient no cause was found; in the other he considered the symptoms to be due to swollen mesenteric glands. In discussing Armstrong's paper, Billings⁶ remarked that pain and other symptoms simulating perforation might be due to inflammation and infection of the glands of the mesentery. McCrae⁷ in his analysis of abdominal pain in 500 cases of typhoid fever, states that in 70 cases in the series there was no known cause for the pain. Fourteen of the patients besides pain had local abdominal symptoms simulating perforation. Two of these patients died, both apparently of intense toxemia, and at autopsy no cause could be found for the acute abdominal symptoms, unless they were due to enlarged mesenteric glands. Abdominal pain has been described as occurring with suppurating mesenteric glands of typhoid fever, but whether the ordinary enlarged glands can give rise to pain, he says, is a question. Finally, Wilson⁸ mentions having seen several cases of sudden intense pain on the right side of the abdomen in the iliac region with rigidity of the muscles and but very little constitutional disturbance. In a few hours these symptoms passed away and the patient was left apparently as well as previously. It was at a loss to account for the condition, which is certainly suggestive in this connection.

4. Berg: Medical Record, March, 1901, p. 441.

5. Armstrong: Annals of Surgery, November, 1902, p. 730.

6. Billings: Annals of Surgery, November, 1902, p. 622.

7. McCrae: New York Med. Jour., May 4, 1904.

8. Wilson: THE JOURNAL A. M. A., April, 1905, p. 1026.

There was no doubt as to the cause of the acute abdominal symptoms in our cases. In the first patient, previous to opening the abdomen, the symptoms were more on the right side; and on exploration, the pain was definitely referred to the enlarged glands in the ileocecal region. In the second case, although there was profound depression of the nervous system, it was evident that the local abdominal symptoms were associated with the large mass of glands in the ileocecal region.

LeConté⁹ has recently reported a case of ruptured suppurating mesenteric glands occurring during typhoid fever with symptoms simulating intestinal perforation. He reviews the other reported cases and discusses the anatomy and pathology of these glands in typhoid fever. His studies show that it is the ileocecal group of glands, as in the present cases, in which there is the greatest change and enlargement. He finds that the breaking down of these glands is a rare condition; there were but six reported cases at the time his paper was written (1904). Enlargement of the glands, sufficient to produce subjective and objective symptoms, is probably much more frequent. The enlargement itself is an almost constant lesion in typhoid fever. In over one-third of the exploratory laparotomies for suspected perforation, no cause was found to account for the symptoms. With the exception of the instances already mentioned, no statement was made in regard to the condition of the glands of the mesentery; consequently, nothing definite can be said as to the frequency of acute abdominal symptoms from this cause.

Without going into a detailed account of symptoms, a few points can be emphasized which might differentiate intestinal perforation. Of first importance, it seems to me, is the presence of a tumor in the right lower quadrant. There may be fullness and tenderness in intestinal perforation on rectal examination, but a freely movable, tender mass in this region ought to suggest something more. In our second patient such a mass was easily felt. It led us to consider appendicitis and tuberculous peritonitis. In the first case there was no record of a tumor, but from the size of the mass of glands and the state of the abdomen, we were almost certain they could have been palpated. Examination should be made both by abdominal and rectal palpation in every case of this sort. Symptoms due to gas and fluid in the peritoneal cavity, obliteration of liver flatness and flatness in the flanks occur late or not at all in most cases of perforation. Of earlier occurrence in some instances is the arresting of peristalsis and spasm of anterior abdominal muscles producing a splinting effect resulting in the pushing up of the lower border of the liver. As would be expected in the two cases in question, none of the above signs was present. There was but slight distension, no change in the area of liver flatness, no flatness in the flanks and peristaltic movements persisted. General constitutional symptoms are very variable in cases of perforation, but usually there are signs of shock followed by the collapse of general peritonitis. In our two cases the symptoms were more those of severe toxemia.

It is of interest to note in this connection that symptoms due to swollen mesenteric glands may occur early or late in the course of typhoid fever, in the first instance on the thirty-ninth day, and in the second on the fifth day of the disease.

Elsberg,¹⁰ in discussing the indication for operation in intestinal perforation, has made the statement that

when the symptoms have been at least of twelve hours' duration and the signs and symptoms point more to perforation than anything else, especially if the patient's general condition is growing worse, operation is justifiable. In both cases the pain and local symptoms had persisted for more than the above time limit, the general condition had grown progressively worse, and from our physical examination we were not satisfied with the state of the abdomen. While believing that needless exploration should be avoided, as far as possible, we felt justified in our advice in these cases. If in the course of typhoid fever there are acute abdominal symptoms especially localized in the right lower quadrant, and a freely movable tumor can be felt there, it would seem safe to adopt an expectant plan of treatment. On the other hand, if there is any doubt, as there usually will be, immediate exploration should be advised, as the danger of operation is slight, bearing out Munroe's¹¹ statement: "Exploration where there is no peritoneal infection or serious organic lesion is practically harmless."

CONCLUSIONS.

The following conclusions may be drawn:

1. In some of these cases in which exploration showed no cause for the symptoms, these were probably due to changes in the mesenteric glands.
2. Some of the recoveries which have been reported from intestinal perforation without operation probably occurred in cases of this sort in which the symptoms simulated perforation.
3. McCrae's suggestion that pain and acute abdominal symptoms might be due to enlarged mesenteric glands is credible, and further observation and study will probably show that this condition is not, relatively speaking, a rare complication in typhoid fever.

FIBROMA OF THE NASOPHARYNX.

TRACHEOTOMY, EXTERNAL CAROTID LIGATION,
EXTIRPATION, CURET.

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History.—S. D., male, aged 14, gave a history of an increasing nasal stenosis of a few years' duration. Several pieces of a "polyp" had been removed by physicians at different times, followed in each instance by severe hemorrhage, but with no relief to the breathing, which grew worse until scarcely enough air to sustain life could be inspired, even with the mouth widely open. His parents feared he would choke to death at night, and he was awakened by a choking sensation every time he fell asleep. Death from inanition threatened because of increasing dysphagia. Bleeding had been frequent, and a week before admission a severe hemorrhage from the nose and throat almost exsanguinated the boy. Headache and earache were frequent and severe.

Examination.—The boy was frail, emaciated, pale and anemic. Leucocytes were increased; hemoglobin was decreased. Nasal respiration was impossible; his mouth was never closed except to swallow, which was difficult. The right nasal chamber was occupied by a hard tumor, which pushed the septum over tightly against the outer wall of the other nasal fossa, thus completely occluding both. The right upper maxilla was bulged outward as if by an antral tumor. The velum was pressed forward on to the tongue, with which it was in contact at all times, except when lifted by a semi-voluntary effort at each inspiration. Back of the tightly stretched velum a smooth, hard, glistening, reddish, vessel-streaked tumor filled the nasopharynx so completely that the finger could not palpate any but the visible portions of the growth. Diplopia and exophthalmos showed the bulging upward of the orbital plate.

9. LeConté: *THE JOURNAL A. M. A.*, October, 1904, p. 1188.
10. Elsberg: *Medical Record*, July, 1904, p. 47.

11. Munroe: *Boston Med. and Surg. Jour.*, February, 1903, p. 146.

Operation.—A clinical diagnosis of fibroma was made, my opinion being that it was bi-lobed and that it had its origin on the right side of the vault close to the right choana, all of which proved to be correct. General anesthesia in such a case is practically impossible. Respiratory arrest is synchronous with unconsciousness. Dr. John W. Boyce very kindly infiltrated an area over the trachea, which enabled me to open the trachea in a few minutes absolutely without pain. This was remarkable in a frail boy, who was watching our every movement. Chloroform was now skillfully administered through the tracheal wound by Dr. W. H. Strang. The right external carotid artery was ligated between the lingual and the superior thyroid arteries to forestall hemorrhage. A small probe, in whose point a small eye had been drilled, was threaded with braided silk and passed backward through the right nasal chamber. It was insinuated between the growth and the tightly stretched velum, through which it could be felt as it worked backward. When the eye point of the probe reached the free margin of the velum, the silk was caught with forceps and drawn out the mouth for a convenient length and the probe was withdrawn from the nose. The bight of a length of snare wire was tied to the nasal end of the silk, by means of which the wire loop was drawn back through the nose until it reached the pharynx. The loop was then insinuated around the presenting portions of the growth and worked upward by traction on the ends projecting from the nose. When the loop was felt to be taut around the base of the growth, these projecting wire ends were threaded through the straight canula of a Peters tonsil snare by my assistant, Dr. Ellen J. Patterson. Closing the snare handles, the growth was cut through at one stroke. The severed tumor was then delivered with strong forceps, without lacerating the palate, though this seemed imminent, owing to the tight fit of the growth.

The bleeding was about as much as from an adenoidectomy; nothing like the welling up after the extirpation of a fibroma. Anterior and posterior plugs were placed and the tracheal canula which had been inserted to facilitate anesthesia was removed as soon as the boy came out sufficiently. The plugs were allowed to remain forty-eight hours. No bleeding followed their removal.

The temperature rose to 101 F., but returned in two days to normal. The carotid wound healed promptly. The boy was out of bed on the third day, and was discharged well at the end of the week. No sign of pulsation was yet perceptible at the temporal artery two weeks later.

The right upper maxilla had undergone a pressure atrophy which had almost obliterated the antrum. There was no cartilage in the septum, probably also the result of the same process, and the nasopharyngeal cavity was enormous. The growth, which weighed 1,270 grains, was found by Dr. Ralph Duffey to be a pure fibroma.

When one looks over the appalling list of deaths on the table from hemorrhage in the removal of fibromata and over the list of preliminary operations, temporary and permanent jaw resections, etc., the contrast here recorded seems to furnish food for thought. I have ligated the external carotid artery thirty-four times without in any case an untoward result. Eight of these ligations have been preliminary to the extirpation of nasopharyngeal fibromata, and in no instance has the bleeding been serious. The greatness of the contrast can be realized only by one who has seen the blood well up out of the mouth like water out of a drinking fountain. External carotid ligation is a guarantee against hemorrhage, shock and collapse. Not only does it prevent loss of blood, but by diverting a greater quantity of blood into the internal carotid it increases intracerebral blood pressure. Whether this agrees with the physiologists' dynamics of blood pressure or not I do not know, but clinically I have seen throbbing headache and also insomnia of a few days' duration follow external carotid ligation, and I have seen no shock in eight cases of extirpation of nasopharyngeal fibromata, cases similar to

ones in which death occurred from hemorrhage and collapse. In my opinion, these observations point to increased intracerebral blood pressure after the ligation. The influence of local anemia in the prevention of recurrence is, of course, an additional advantage, especially in cases of double ligation, or, better still, excision.

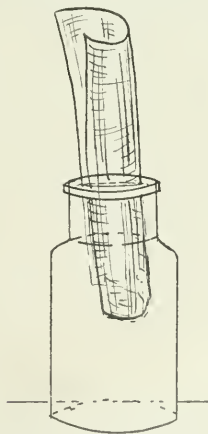
I do not consider an operation for true fibroma of the nasopharynx justifiable without preliminary ligation of one or both external carotid arteries. If the side from which the growth springs can not be determined, ligation of both external carotids is indicated, preferably with an interval of three or four days, during which the tracheal wound may be kept from healing by packing with gauze wrung out of mercuric bichlorid solution, no tube being worn and no air being permitted to pass through the wound. From this there is no danger of pneumonia. Nor do I consider it justifiable to administer a general anesthetic until after the trachea has been opened, if the growth be large enough to press the velum forward on to the tongue. I do not say that neglect of these precautions means death, but I claim that the mortality of these operations can be thus reduced practically to naught. Hemorrhage, dyspnea and chloroform act synergistically in the induction of collapse. Let us forestall hemorrhage by external carotid ligation and dyspnea by tracheotomy (under local anesthesia) so that we may give our chloroform in comparative safety.

METHOD OF WASHING SMALL PIECES OF TISSUE.

GUTHRIE MCCONNELL, M.D.
ST. LOUIS.

I have devised a method of washing small bits of tissue which have been hardened in Zenker's or similar fluids, and which does away with the difficulties usually encountered in that proceeding.

As shown in the accompanying illustration, a piece of fine-meshed copper wire netting is rolled into a cylinder and stuck



well down into a bottle. The bits of tissue are put in this and the water is turned on; all danger of losing the specimen is obviated as the water can not rise to any degree above the mouth of the bottle.

Until I happened to think of this method I had to devise rather elaborate or cumbersome ways of accomplishing the desired end.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 17, 1906.

THE NATURE OF ENZYMES.

Since up to the present time no ferments have been isolated in an absolutely pure condition we are entirely unfamiliar with their chemical characters, and consequently are obliged to recognize them solely by their action. So far as we know, true enzymes never occur except as the result of cell life—they are produced within the cell and increased in amount by each new cell that is formed, and, furthermore, they are probably present in every living cell without exception. As the same facts are equally true of the proteids, and apparently true of nothing else, it is natural to associate the enzymes with proteids and so to explain the importance of the proteids for cell life. If enzymes are obtained in any of the usual ways from animal cells or secretions they are always found to give the reactions for proteids, even if repurified many times; but it is well known that by any method of precipitating proteids the other substances in the solution tend to be dragged down by the colloids, and it is possible that the enzymes are merely associated with the proteids in this way. Furthermore, enzymes are known to become so closely attached to stringy protein masses, such as fibrin and silk, that they can not be removed by washing. Some observers have claimed that they have secured active preparations of pepsin and invertase that did not give proteid reactions and contained very little ash or carbohydrate, but it has so far been impossible to secure trypsin free from proteid, and diastase seems to be an albumose-like substance. Analyses of enzymes purified as completely as possible do not have great worth, for these substances are probably far from pure; however, it is of some importance that they vary greatly in the proportions of carbon, hydrogen and nitrogen which they contain, indicating that possibly different enzymes may be of very different nature. Active gum enzymes, with oxidizing properties, are said to have been prepared free from nitrogen.¹

Macallum has shown microchemically that phosphorus is closely associated with the formation of zymogen granules in cells, which seem to be started in the nucleus, and there are many other observations suggesting that certain ferments are closely related to the nucleopro-

teids. This is particularly true of the oxidases, which seem also to contain iron and manganese. A final point of importance in support of the proteid nature of enzymes is that pepsin destroys trypsin and diastase, while trypsin destroys pepsin.

So uncertain, however, is our information concerning the chemical nature of the enzymes that it has become possible for a hypothesis to be developed urging that enzymes are immaterial, that the actions we consider as characterizing enzymes are the result of physical forces which may reside in many substances, and perhaps even free from visible matter. Arthus, who has been the chief champion of this very interesting conception, compares enzyme action to such forces as magnetism. A magnetic iron bar loses its characteristic property when sufficiently heated just as an enzyme does. Dissolve either the magnet or the enzyme in strong hydrochloric acid and it loses its power to affect other substances. It has been equally impossible to isolate enzymes and magnetism, both of which are recognized by their actions and not by themselves. Just as light, heat and electricity were once considered as matter, so has it also been with enzymes, and Arthus believes that they will eventually be stricken from the list of material things and considered as forms or a form of energy. There can be no question that this conception rests on strong grounds, and it possesses the stimulating qualities that make an hypothesis helpful, but, as Oppenheimer says, all chemical substances may be considered in the same way. We recognize all bodies through some form of energy; if we speak of sulphuric acid it is really of the properties of energy it shows, such as its taste, which is the energy imparted by its ions to the nervous system, or its combining with bases, etc., which also is a manifestation of energy. In the same way we recognize the ferments, and we may properly believe that they are fully as definite substances as is sulphuric acid. The magnet comparison also fails when we remember that the magnetism can be introduced into a bar of iron and removed at will, but as yet it has not been possible to introduce enzymatic properties into an inert proteid or to restore them to an enzyme that has been destroyed by heat.

Other valuable evidence of the material existence of enzymes is their specific nature, lipase affecting only fats, and trypsin only proteids, indicating chemical individuality. They are true secretions, formed within the cell by recognizable steps, and, furthermore, when injected into the body of an animal they give rise to the formation of specific immune bodies that antagonize their action. Emil Fischer's work with the sugar-splitting enzymes, moreover, indicates that they owe their action to their stereochemical configuration. He prepared two sets of sugar derivatives which differed from each other solely in the arrangement of their atoms in space (i. e., isomers) and found that one specific enzyme would split members of only one of the sets, while another would act only on the variety with the

1. A recent paper by Tschirsch and Stevens casts considerable doubt on this statement. *Pharmac. Centralblatt*, 1905, vol. Ivi, p. 501.

opposite isomeric form. These experiments make it very probable that there must be a certain relation of geometrical structure between an enzyme and the substances it acts on, and leaves little room for question of its material nature.

Bredig has found that colloidal solutions of metals have many of the properties of true enzymes, accomplishing many of the decompositions produced by enzymes, being affected by temperature of nearly the same degree, and even being "poisoned" by substances that destroy or check enzymes. The only possible explanation of these phenomena seems to be that the effects are brought about by surface phenomena. A colloidal solution of platinum, so far as is known, differs from a piece of metallic platinum solely in the enormously great amount of surface it offers in proportion to its weight, and it is well known that surface may affect chemical action. Hence we have the possibility that some enzyme actions at least may depend on the existence of a very large surface, and since by no means all colloids are enzymes, that this surface must bear a certain relation in form to the surface of the body that is to be acted on.

COPPER SULPHATE INSUFFICIENT FOR WATER PURIFICATION.

We have referred several times to the claim made in some quarters in behalf of copper sulphate as a means of ridding water, not only of obnoxious algae and infusoria, but of pathogenic bacteria as well. In so doing, we expressed hesitation about accepting, on the evidence then available, the doctrine that the addition of a few pounds of copper sulphate to a large body of polluted water was sufficient to free the water from dangerous germs. It now appears that this conservative attitude was fully warranted. A series of important investigations carried out on this subject under the auspices of the progressive State Board of Health of Massachusetts have just been published,¹ and serve to shed a good deal of light on points heretofore obscure. It is shown that not only is the use of copper sulphate in water filtration not an aid to purification, but that, on the contrary, when the salt is applied directly to the water on the surface of a filter, it reduces the efficiency of the filter very materially, and eventually would seriously impair the essential biologic action of the filter. In accordance with the thorough-going methods of the Massachusetts Experiment Station, this statement is based on experiments lasting for a full year.

A prolonged experimental investigation on the bactericidal action of copper is also reported in the same connection. The important conclusions here reached as the results of extended experiments are notably different from those based solely on a small number of tests made with limited quantities of water in a laboratory.

The writers (Clark and Gage) "believe that the treatment of water with copper sulphate or by storing in copper vessels has little practical value." Their principal reason for this conclusion is that although the removal of *B. coli* and *B. typhosus* is occasionally accomplished by dilute solutions of copper sulphate, these organisms may both live for many weeks in water containing copper sulphate in greater dilutions than 1 to 100,000; and in order to be safe, dilutions of 1 to 1,000 must be used, in which case the water becomes repugnant to the user because of its strongly astringent taste. As regards the standing of water in copper vessels, the time necessary to effect complete sterilization is so long that a receptacle of almost any other material would seem to be as effective as copper. Metallic copper seems to have little more "germicidal power" than iron, tin, zinc or aluminum. The writers add: "In some instances very dilute solutions of copper sulphate or colloidal copper absorbed from contact with clean metallic copper, appear to have a decidedly invigorating effect on bacterial activity, causing rapid multiplication, when the reverse would have been true had the water been allowed to stand the same length of time without any treatment."

Whatever proves to be the merits of the application of copper sulphate to the water of reservoirs infested with malodorous algae—and there is reason to think that success will attend the method in this field—there is no good ground for the assumption that sewage-polluted water can be made pure by the addition of this chemical.

THE CENTENNIAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

In the two last numbers of *THE JOURNAL* may be found some account of the proceedings of the Medical Society of the State of New York during the recent meeting in Albany. The occasion is of such importance, however, especially certain features of this annual session, that it is a matter of marked interest to the entire profession. The arrangements to celebrate appropriately the one hundredth anniversary of the foundation of the society had been perfected and were carried out in the most fitting and interesting manner. The address of the president, Dr. Joseph D. Bryant, treated in felicitous manner the history of the society, the disruption of twenty years ago, and the recent cordial union of the two state organizations into one great society. One of the principal addresses of the occasion was by ex-President Cleveland, who is also a former citizen and ex-governor of the State of New York. Appropriate addresses were also made by Dr. William H. Welch of Baltimore and Dr. William W. Keen of Philadelphia. Elaborate addresses on medicine, surgery and sanitary science were prepared, respectively, by Dr. Samuel B. Ward of Albany, Dr. Roswell Park of Buffalo and Dr. Herman

1. Supplement No. 2, 1906, *Journal of Infectious Diseases*, p. 172-209.

M. Biggs of New York. It was regretted by all that Dr. Roswell Park, on account of illness, could not be present. His address was read by Dr. Hopkins of Buffalo. The extent and excellence of the scientific program was not impaired by the centennial proceedings, the papers and discussions being of the usual high standard of the society.

The feature of the meeting, most interesting to physicians generally, was the cordial greeting and fellowship of those who so long had been separated by rival state organizations. The full attendance on the scientific sessions, the brilliant annual dinner, which filled the large hall to overflowing, attested the completeness of the reunion.

Immediately following the address of the president of the society, the President of the American Medical Association, Dr. L. S. McMurtry of Louisville, made a brief address, expressing the gratification of the entire profession at the unification of the profession in the Empire State, and cordially welcomed the society on its resuming its place as the constituent branch of the national Association in New York. The proceedings throughout were marked by the most cordial spirit of co-operation, which assures for the reorganized society a new era of professional and scientific advancement.

The universal satisfaction and pleasure arising from the success of this memorable meeting were marred by the sudden illness, terminating fatally a few days later, of Dr. George Ryerson Fowler of Brooklyn. One of the foremost of American surgeons, and a man of attractive personality, he had devoted himself zealously to the harmonious union of the two societies. As a member of the conference committee of the society he contributed largely to the result attained. As chairman of the centennial committee he labored early and late to promote the success of that celebration. His severe illness came on suddenly at Albany on the very eve of the meeting, and elicited throughout the anxious sympathy of his colleagues.

OPPOSITION TO ORGANIZATION: WHY?

Until a few years ago the medical men of this country have practically gone each his own way; medical societies or associations have been few and far between and of small membership. Now that physicians are coming together and are striving for the common good, and a spirit of association and comradeship and betterment is abroad in the land, we begin to see what the barren years have produced. We find that unscrupulous manufacturers have amassed fortune after fortune by exploiting nostrums through the medium of our divided profession. We find nostrums by the score lauded to the skies in medical journals owned or controlled by the nostrum manufacturers. We find thousands of physicians depending on the one-sided and often untrue statements furnished them by the interested manufacturers—practically getting their "education" in therapeutics from

the trade "literature" of the proprietary medicine manufacturer. The nostrum evil and many others have come on us because of our ignorance, our lack of association in work.

There are always scavengers and carrion birds, and naturally there are commercial interests that are working against harmony and unity in the medical profession, for they see that harmony means association in work; association in work means enlightenment and knowledge, and, together, these mean an end to their dishonest and ill-gotten gains; for they grow rich on professional ignorance and the blind credulity which results. The manufacturers of worthless nostrums do not wish to see "Unity, Peace and Concord" in the medical profession. They are opposed to the rapid spread of organization—to the association in work which follows activity and harmony in county medical societies. Also, and naturally, many of the "medical" journals of the country, which can live only on the advertisements of worthless nostrums, do not contemplate this spirit of organization with any degree of pleasure. Some are openly and crudely attacking and opposing either local or state organization, or the efforts of the American Medical Association to encourage it. Others, more subtle, more wily, and hence more dangerous, are appealing to the "independence" of the individual physician; are flattering his own "individual judgment," and telling him he is too wise to allow himself to be "herded" into an organization that is "controlled by machine politicians." This sort of thing is to be expected, and unless we know the actual reasons, the real dishonest motives for such biased or untrue statements, we can not understand them. Association, work, study, enlightenment, will rapidly disclose the predatory hand of the nostrum maker, and we will realize why he is opposed to any and all organization that will bring physicians together for their own betterment and his loss through the disclosure of his lies.

These are things that each one of us should carefully consider: If we give no thought to ourselves, to whom shall we turn? If "independence" brings with it ignorance, strife and poverty, where is the advantage over association in work with the betterment, mental and financial, that results from harmony and study and that friendly feeling toward one's fellows which we find in the healthy, active county medical society? What can anyone of us "sacrifice" by associating with his fellow-physicians in a county medical society? Is there any loss of dignity or of independence in trying to become better informed, better educated, more up to date?

TWO DEFINITIONS OF MEDICAL PRACTICE.

Two judges in New York have recently given definitions of the practice of medicine. One alleged definition was by Justice Joseph M. Deuel, of the Court of Special Sessions, whose character was recently exposed by the evidence brought out in his unsuccessful suit for libel

against the editor of *Collier's Weekly*. The decision, to which we referred last week, was in the case of an osteopath who had been prosecuted by the County Medical Society and fined for practicing without a license. Judge Denel decided, on appeal, that the practice of medicine consists of three things: Diagnosis, the discovery of the cause of disease, and its cure by drugs. According to this decision, if a physician does not prescribe drugs he is not practicing medicine. He added that the statutes aim to suppress the ignorant and indiscriminate administration of drugs, and that this is practically the whole intent of legislative medical regulation. Needless to say, if this were true, then most of the quacks and charlatans might continue their imposition on the public without let or hindrance. They might do everything, apparently, even surgery, without fear of disturbance, provided only they did not prescribe medicine. Yet this is the narrow view still held by some judges.

Fortunately for New York and the work of the County Medical Society in the suppression of quackery, the other definition of the practice of medicine recently made is eminently satisfactory. Judge Greene, of the city court, said that he had looked over the legal authorities of the state without being able to find a definition of what constitutes the practice of medicine. The case before him was one that absolutely demanded such a definition for its decision. Judge Greene defined the practice of medicine as "the exercise or performance of any act by or through the use of any thing or matter or by things done, given or applied, whether with or without the use of drugs or medicine and whether with or without fee therefor, by a person holding himself or herself out as able to cure disease, with a view to relieve, heal or cure, and having for its object the prevention, healing, remedying, cure or alleviation of disease."

This definition ought to be of great value to the New York County Medical Society in its future prosecutions of illegal practitioners. It leaves very few loopholes, if any, through which they can escape. It would still be desirable to obtain an indorsement of this definition in a decision of the highest courts, but the fact that it has been given out judicially is, in any case, a useful step in advance. We believe that a rational interpretation of medical practice acts would warrant a similar definition in every state where such acts exist. As a lay journal very well says, "the person who undertakes to do the work of the doctor, which is the curing of diseases, does not evade responsibility by any trick of method. Whether there be administration of drugs, the laying on of hands, resort to bread pills, baths, dieting, blue glass, incantations or hypnotism, the operation is the practice of medicine, in the spirit of the statute. This statute is for the protection of the public health, as well as to guard the credulous invalid from the rapacity of swindlers. Judge Greene's view will be accepted as the popular view, not only because it upholds a benign law, but because it is the expression of plain common sense."

THE ADVANTAGES OF NATIONAL QUARANTINE.

Dr. Sexton's article in this issue of *THE JOURNAL* points out some of the advantages of a national quarantine over the present unsatisfactory systems adopted by the several states. The experience of last year was, in fact, an efficient object-lesson. It was not until the United States authorities took a hand that the epidemic was stayed and a miniature war between the states averted. His article, however, gives in useful detail some of the advantages as they appear to one who is on the ground and can speak from experience. As he says, the protection from disease is as important as the protection from a foreign foe, and we certainly would not leave the latter, with its expenses and perils, to be exclusively a function of local border authorities. There is much in the argument that the whole country should share the cost of the defense, although it may be certain sections are not directly threatened. The lack of uniformity of local quarantines is also a self-evident drawback to their efficiency, all the more so when, as was the case last summer, obsolete and inefficient measures are depended on in some quarters as against the more efficient ones in others. The general respect which is shown to national authority without regard to state boundaries is also a very important additional factor of efficiency. The unnecessary interruptions of commerce between the states due to whims of local health authorities is another self-evident evil which, touching, as it does, the pocket nerve, should be a strong argument in favor of national control where perhaps others might fail. Local political influences, moreover, can, as he says, be put out of the question as factors of inefficiency, a reform which Dr. Sexton deems imperatively needed. Under the Public Health and Marine-Hospital Service or under control of Army and Navy medical officers, such conditions need not exist. Whether all the states will willingly surrender their independent control of local quarantine matters may be questioned, but there is no doubt that it would be to their best interests to do so.

THE HOT SPRINGS DECISION.

Some little time ago an Arkansas judge issued an injunction against any interference with a Hot Springs touting doctor, holding that the State law prohibiting such practices was unconstitutional and that the cession of the jurisdiction of the Hot Springs reservation to the General Government was also void. The case was promptly carried to the Arkansas Supreme Court, which has just rendered its decision. It says, as regards the jurisdiction of the United States and the right of Congress to enact laws regulating the use of the Hot Springs by physicians, that it raises a question in which it would follow the decisions of the Federal courts and which it does not feel bound to consider at the present time. If the United States jurisdiction did not exist, however, there would still be a valid state law against the practices of drumming or touting for patients, and the fact that the individual in question is being prosecuted in the Federal courts instead of in State courts would not justify the issuance of the injunction. The main question with the supreme court was whether or

not the state law is valid, and it decides that it is. The judgment was reversed, with an order to dismiss the complaint for want of equity. Our reputable confrères in Hot Springs are to be congratulated and commended for their energetic conduct in this matter. The drumming system at Hot Springs had become almost a prescriptive right and the reputation of the well-known watering place had suffered accordingly. The worthy practitioners there and the public generally have long felt the reproach, but could do little to remove it. It seems to us that the supreme court's decision, in the form in which it is given, fairly settles the question and should be effective in eradicating disreputable practices and practitioners from that popular health resort.

THE COST OF ANTIVACCINATION.

At the present time there seems to be a sort of recrudescence of agitation against vaccination all over the country, but more pronounced in certain sections. This has been especially the case in Pennsylvania, where smallpox has prevailed to some extent and where, in consequence, the vaccination and isolation laws have been more strictly enforced than in ordinary times. In view of the attempts to influence public opinion and to bring about legislation for the repeal of compulsory vaccination laws, the commissioner of public health, Samuel G. Dixon, makes public some statistics and estimates of the state health authorities. From a careful estimate it appears that, outside of the cities and boroughs, the average cost of quarantining smallpox cases is, at the lowest figures, \$350 for each individual patient. Special figures are given for special localities which, in a general way, bear out these statements. In the cities or boroughs the figures are also formidable, in spite of the better facilities for isolating and quarantining these cases. For example, in a recent small epidemic at Williamsport, the public expense for caring for 18 cases was \$5,132, or \$284 apiece, while the cost of public vaccinations was only 29 cents apiece. These figures could probably be paralleled in many other states and communities where smallpox has prevailed, and ought to be of some influence with the taxpayers and legislatures. If a fraction of the cost of smallpox could only be assessed on those who are responsible for it, viz., the antivaccinationists, there would very soon be an end to their arguments and agitation. It is a disgrace to civilization that in any modern community of presumably civilized people such a wholly preventable disease as smallpox should exist, and a still greater discredit to their intelligence that they should oppose the one undeniably efficient preventive of its occurrence.

CHILD LABOR REFORM.

Although the evil of child labor in factories or shops is apparently on the increase in certain sections, especially in the South, much encouraging progress is reported. Action on the subject was taken in twelve out of thirty-nine state legislatures last year, and existing laws are being enforced in a number of sections of the country. The temptations to neglect their enforcement

are great, the plea of poverty being often effective. The ultimate fact, however, remains in all cases that to make good citizens we must begin in childhood, and that any interference with the child's physique or moral welfare is a wrong that can not always be repaired—certainly not under the continuance of conditions which exist in factories, coal mines, etc., where children of comparatively tender age are too often largely employed. The medical profession should guide public opinion and take an active interest in all movements for a rational enforcement of child labor laws and their extension to states where they do not now exist. Under present conditions child labor is demoralizing morally, as well as crippling mentally and physically. If a child can not always secure its right to be well born (and that is a matter in which as physicians we are professionally interested) we are still more responsible in securing for it reasonable chances during the critical periods of growth. In some of its phases the labor question is a serious matter as far as childhood is concerned.

AN EXPERIMENT IN SEASICKNESS.

Seasickness is not generally considered a serious disorder, and its victims do not get the sympathy they deserve, considering the amount of human happiness that is even temporarily destroyed. Occasionally, however, it is a very serious matter to individuals and its public importance may perhaps be estimated from the fact that to it has been attributed the influencing of the fate of nations by the limitations of their sea power which it caused. It is not altogether surprising, therefore, that there exists in France and possibly elsewhere in Continental Europe, a "League Against Seasickness." This body, it is reported, proposes to charter a steamer and invite some six hundred physicians to sail from Hamburg, Antwerp and French ports to Lisbon at the time of the International Medical Congress. It is expected that experimental study of the subject will be conducted, and that in this way practical tests of the various methods of treating the condition can be carried out. The projectors should consult naval architects in their selection of the vessel or in the provisions for its outfitting and ballasting. If they secure a sufficiently lively craft, and the Bay of Biscay and other seas are propitious or unpropitious according to the point of view, some valuable subjective and objective testimony may be educed. The experiment will be worth watching.

MORE ON PURE-FOOD LEGISLATION.

According to the *Chicago Tribune*, it is probable that the Lorimer pure-food bill is to be, or is being, pressed before the Senate this week by its advocates. The same paper says, also, that this bill was partly drawn up by E. N. Eaton, analyst of the pure-food commission of Illinois, who is opposing the Heyburn bill for fear that it would take the inspection and analysis of food products from the hands of state analysts and thus diminish their official functions and importance. If this is the case we do not envy them their responsibility should the Heyburn bill fail to pass. The Lorimer bill is not what

is wanted, and the most obvious cause of its introduction is the desire to defeat the Heyburn measure, which has the indorsement of all the best authorities and of all true well wishers for reform in the matter of food and drug adulteration. The need of a general law is made clear by such facts as are given in the Chicago *Tribune* February 13 concerning the efficiency of the Illinois pure-food commission. According to that paper, it is the practice of the Illinois commission to remit all fines for violations of the state pure-food law, and the manufacturers have come to regard the commission as a thing to be played with, a mere political machine. While similar bodies in some other states are relatively efficient, these facts, if true, in Illinois are sufficient to destroy any dependence on state laws alone. The Lorimer bill, the National Manufacturers' bill and all other similar devices that have been or may be introduced are simply attempts to kill off the measure that is really demanded by all the best interests of the public. As Senator McCumber said in the Senate, their purpose was well stated in the *National Druggist* when the Manufacturers' Association was organized. The heading of its article was "How to Kill Pure-Food Legislation." It is bad enough for the Heyburn bill to find enemies among those who should be its friends, but, after all, opposition from state officials who, by their own inefficiency, furnish an object-lesson for the need of General Government regulation, ought not to be very effective.

LODGE PRACTICE EVIL: A SOLUTION?

The evils of lodge and contract practice are becoming more and more apparent. Medical societies have taken action in various ways, but none thus far taken tends to settle the question without strife. There seems to be at least one way in which this question may be settled, if an agreement to the plan can be brought about. Let the lodges continue to provide medical and surgical attendance for their members, and, if they so desire, let them have their official physicians. Instead, however, of paying the lodge physician a lump sum on the basis of so much per member, which results usually in absurdly small per capita payment, let him be paid the regularly accepted fees for such work as is actually rendered. In case a member desires attendance at the hands of some physician other than the one employed by the lodge, he could, under this plan, call in his own physician, and yet place his lodge at no more expense than though he had been compelled to call in the official lodge physician. We recently called attention to the conflict between the Shasta County (California) Medical Society and a local lodge of "Eagles." There have been some publications in the local press subsequently, and in one of these, emanating from the "Eagles," the statement is made that there have been very few cases of sickness for the lodge physician to attend, and that he has received about \$3.00 for each actual visit, whereas the regular fee for that community is but \$2.50 a visit. If this is the case, the plan here proposed would have resulted in an actual saving to the lodge, while at the same time it would have prevented the existence of strained relations between some of the population of that county and most of its physicians. Would it not be well for medical so-

cieties carefully to consider this idea and the advisability of trying to get the lodges in their various vicinities to adopt it? The co-operative principle, on which lodge and contract practice are based, is growing rather than contracting, and doubtless it will always exist even in its application to medical treatment. It would seem wise, therefore, to endeavor to devise some plan by which its existence will not be a menace to the self-respect of physicians and an influence tending to the reduction of fees—all too small even now.

Medical News

CALIFORNIA.

Scarlet Fever Epidemic.—An epidemic of scarlet fever is reported to be raging in Martinez; 33 cases have been reported, with one death.

Fire in College.—The four-story frame building occupied by the College of Physicians and Surgeons, San Francisco, was damaged by fire January 18, to the extent of \$40,000.

Society Meeting.—Santa Barbara County Medical Society, at its January meeting, elected the following officers: President, Dr. William B. Cunnane; vice-president, Dr. David A. Conrad; secretary, Dr. William T. Barry, and treasurer, Dr. Charles S. Stoddard, all of Santa Barbara.

Prohibits Distribution of Medicine Samples.—The Selma health board is reported to have recommended the passage of an amendment to the present health ordinance making it illegal to give away or to distribute samples of these remedies. The step is said to be taken not so much in the interest of the adult population, but as a matter of protection for children who are liable to be seriously injured by picking up such packages and eating the contents.

Personal.—Dr. Beatrice M. Hinkle has resigned as assistant city physician in San Francisco and has removed to New York City.—Dr. Elliott H. Woolsey, Oakland, has gone to Honolulu for a two months' trip.—Dr. Simon Baruch, New York City, has taken charge of the new Paso Robles bath house.—Dr. Charles W. Bryson has been elected dean, and Dr. I. C. Fisher, vice-dean, of the faculty of the Los Angeles College of Physicians and Surgeons. Dr. Walter S. Johnson has been elected trustee of the college and editorial manager of the *Los Angeles Medical Journal*, vice Dr. Nichols, resigned.

COLORADO.

Officers Re-elected.—At the annual dinner and meeting of the board and faculty of the Denver and Gross Medical College, January 26, Dr. Sherman G. Bonney was re-elected dean of the college and Dr. Robert Levy, secretary.

Pure Water and Power.—Boulder, determined to secure pure water, has purchased several lakes near the crest of the Rocky Mountains which are fed by melted snow. A pipe line will convey the water to Boulder, and the fall will furnish sufficient power for electric light for the city.

Rival Coroners.—Dr. R. H. Paxton, who was deposed as coroner by the board of commissioners of Fremont County a few months ago because of alleged non-residence, has brought out proceedings in the county court against Dr. William C. Stevenson, who had been appointed to fill the vacancy. Since Dr. Paxton's removal both physicians have been performing the duties of coroner.

Personal.—Dr. Ella Head has been appointed physician of Greeley.—Dr. Richard W. Corwin, Pueblo, has been elected president of the conference of state charities and corrections, and Dr. Hubert Work, Pueblo, vice-president.

DISTRICT OF COLUMBIA.

Personal.—Dr. Robert F. Tobin has been appointed a member of the medical staff of the Washington Asylum, vice Dr. De Haven Sharp, deceased.

Agree on National Quarantine Bill.—The members of the special committee, selected at a caucus of southern senators and representatives, have agreed on a national quarantine bill limiting quarantine measures to yellow fever and appropriating \$600,000 for the work.

Ophthalmologists Regret Burnett's Death.—The Society of Ophthalmologists and Otolologists of Washington, at its regular meeting, held January 19, adopted a preamble and resolutions of sorrow at the death of Dr. Swan M. Burnett, its first president, and of sympathy to his widow and son.

ILLINOIS.

Chicago.

Personal.—Dr. John C. Corbus, Mendota, has been re-elected superintendent of the Illinois Eastern Hospital for the Insane, Hospital. —Dr. Gerhard T. Nelson, Morris, while on his way home from a train early January 29, fell and fractured his leg.

Oak Park Hospital Plans.—On February 11 announcement was made that the plans for the Oak Park Hospital have been completed. The site selected is at the corner of Wisconsin Avenue and Monroe Street, with a frontage of 367 feet on Wisconsin and 171 feet on Monroe Street. The building will accommodate 65 patients.

Joint Meeting.—On January 31 the Winnebago County Medical Association and the Central Wisconsin Medical Society held a joint meeting in Rockford, at which the principal subject discussed was the treatment of tuberculosis. In the afternoon the visiting physicians were tendered a banquet at which Dr. Ernest C. Helm, Beloit, presided as toastmaster.

Personal.—Dr. John W. Marchildon has returned after two years of study abroad. —Dr. Anthony K. Warner has returned after a ten days' trip to Cuba. —Dr. David J. Doherty, who leaves for the Philippines Islands February 22, is to continue his scientific studies and travel in the islands, and will probably remain away more than a year. —Dr. Albert C. Hammett was seriously injured in a runaway accident, February 1.

Civil-Service Examination.—Examinations for assistant physician in the insane hospitals will be held by the Illinois civil-service commission, February 27, at Cook County Hospital, at the railroad and warehouse commission's rooms, the capitol building at Springfield, and at the city council chamber, East St. Louis. The particulars of the examination were noted in THE JOURNAL of January 27. Applications will be received up to February 23 and should be made to Joseph C. Mason, secretary and chief examiner, Chicago.

Hospitals De Luxe.—James Henry Smith has given \$500,000 to St. Luke's Hospital to be used in the construction of an annex to the institution for pay patients, to be erected on the Michigan Avenue property of the institution. The present hospital building will thereafter, it is said, be devoted entirely to free patients. —The board of managers of the Presbyterian Hospital has already obtained pledges of \$352,000 toward the \$400,000 required for an addition to the institution which, it is claimed, will be the finest and most luxurious hospital in the West.

The Dinner to Baron Takaki.—On the evening of February 10, Dr. Nicholas Senn and the Senn Club gave a dinner in honor of Baron K. Takaki, surgeon general, Imperial Japanese Navy. Dr. Fernand Henrotin presided and introduced Dr. Senn, who delivered an eloquent address of welcome to the distinguished guest. Baron Takaki, after a brief response, delivered an address on naval sanitation which dealt chiefly with his researches on beriberi whereby the disease has been practically exterminated from the Japanese navy. When Baron Takaki entered the navy in 1872 three-fourths of the entire sick list was made up of beriberi patients. In the endeavor to overcome this condition Dr. Takaki made a study of the ration of the navy and discovered that it contained too great a proportion of carbohydrates and too little albuminates, and furthermore that the prevalence of beriberi varied directly with the variation of these food constituents. As the result of his investigations, he endeavored to change the constituents of the ration by the issue of barley in place of a part of the rice ration. After many years of strenuous work required by the as strenuous opposition of officers and men of the navy, Takaki gained his point, and with the change in the ration beriberi practically disappeared. Baron Takaki also declared that beriberi can be artificially produced and that it can be positively prevented by diet. In closing his address he gave statistics of the total dead and wounded in the Russo-Japanese war up to Dec. 5, 1905. The total number of dead and wounded was 3,689, 1,892 of whom died instantly and 117 subsequently, leaving a balance of 1,680 wounded. The percentage of death rate was 54, and more than 90 per cent. of the wounded returned to duty.

IOWA.

Variolinum.—The State Board of Health at its last meeting discussed the subject of internal vaccination by means of variolinum. The homeopathic members of the board favored the idea, while the regular and eclectic physicians opposed it. A resolution was passed to ask the present legislature to define vaccination or to legalize the present definition of the State Board of Health.

New Medical Practice Rule.—In accordance with a request from the medical faculty, the board of regents of the State University at its last meeting adopted rules regarding admission to the medical college in conformity with a recent action of the State Board of Medical Examiners providing that no physician will be allowed to take the examination for license to practice in Iowa unless he is a graduate of a school that has a four years' course and that does not give credit for any work done outside of the medical college.

Bills in the Legislature.—The following bills have been introduced in the legislature: A bill for the registration of graduate nurses, and a bill asking for an increased appropriation for the State Board of Health Bacteriologic Laboratory at Iowa City. This laboratory was created by the legislature two years ago and began work in September, 1904. During this time, according to the last report of the director of the laboratory, more than 6,000 examinations have been made. The laboratory is proving very popular with the physicians of the state, and has been instrumental, through early diagnosis, in preventing a number of very probable epidemics of diphtheria and typhoid fever. The entire appropriation asked for will no doubt be granted.

MARYLAND.

Baltimore.

Personal.—Dr. Edward Lindon Mellus is in Cairo, Egypt. —Dr. Campbell P. Howard sailed for England, February 3.

Health Report.—Influenza is reported to be very prevalent in Baltimore. —During the week ended February 10 there were 39 deaths from consumption and 36 from pneumonia.

Senior Student Killed.—J. Howard Hughes, a senior medical student at the University of Maryland, was killed by the accidental discharge of his pistol at Jersey City, N. J., February 4.

MASSACHUSETTS.

Damaged by Fire.—The residence of Dr. Robert Burns, West Newton, was damaged by fire February 8 to the extent of \$12,000.

Anti-Expectoration Law.—Among the bills introduced in the legislature is one providing for a fine of from \$1 to \$10 for every person who expectorates in any public place except in receptacles provided for the purpose. This bill is strongly favored by the Society for the Prevention of Tuberculosis.

Alumni Meet.—The Boston City Hospital Alumni held its annual meeting February 8. Dr. Charles W. Williams, who presided, is succeeded as president of the association by Dr. George A. Leland. Dr. George T. Tuttle was elected vice-president; Dr. William H. Robey, Jr., secretary; Dr. William H. Prescott, treasurer, and Dr. George L. West, member of executive committee.

Hospital Reports.—The number of accident cases treated at the Massachusetts General Hospital in 1905 was 5,459, or 700 more than in 1904. The total of outpatients, however, decreased about 4,000. This is explained by the policy of the hospital of referring back cases to family physicians or institutions where they have been previously regularly treated. The McLean Hospital and the Convalescent Home in Waverly are under the same board of trustees. There was a total deficit for the three institutions for 1905 of \$23,000 as compared with \$21,000 in 1904. It is expected that the new building for women at Waverly, made possible by the bequest of Edward W. Codman and to be called the Codman House, will be ready for occupancy in 1906.

Warren Long in Service.—Of the resignation of Dr. John Collins Warren the trustees of the Massachusetts General Hospital say:

In January, 1905, the term of Dr. John Collins Warren came to an end, and for the first time in our history the annual report appears without the well-known name of Warren on its pages. It was voted to accept the resignation of Dr. Warren that the following minute be placed on our records:

"John C. Warren and James Jackson inspired the efforts that led a general public to establish this hospital in 1814. Dr. Warren remained in the service of the hospital until the year 1853. J. Mason Warren became a member of the surgical staff in 1846 and died in the service of the hospital in 1867. John Collins Warren's name first appeared on the rolls of the hospital in 1865, and with

his resignation there closes for the present this illustrious succession through our whole history, of three men, father, son and grandson, who each in turn have been conspicuous for able, conscientious and devoted service to this great charity. A service which deserves and receives the grateful notice of the trustees, and the thanks of the unnumbered patients who have profited by their skill and devotion."

MINNESOTA.

Ramsey County Election.—Ramsey County Medical Society had its annual meeting January 9, at which Dr. Burnside Foster was elected president; Dr. Paul Cook, vice-president; Dr. Frederick Leavitt, secretary-treasurer, and Dr. Alvah F. Whitman, necrologist.

Two Rooms Endowed.—In consideration of the gift of \$35,000 made by David C. and Frank P. Shepard, to pay off mortgages against St. Luke Hospital, St. Paul, the trustees have invested the donors with an endowment title to two rooms to be designated and known as the "Frances Aurelia Shepard Endowment."

Old Vienna Students Meet.—On February 3 physicians of Minneapolis and St. Paul, who have studied in Vienna, held their first annual banquet. Dr. Jehiel W. Chamberlain, St. Paul, was elected president; Dr. Louis A. Nippert, Minneapolis, vice-president, and Dr. Emil S. Geist, Minneapolis, secretary and treasurer.

Offended at Governor's Action.—It is reported that a majority of the State Board of Medical Examiners is preparing to oppose the action of Governor Johnson in reducing the homeopathic representation on the board from three to two. The governor recently appointed Dr. Oswald Leicht, Winona, a regular, to succeed Dr. William A. Bench, Mankato, a homeopathic practitioner. The governor states that his failure to name a homeopath was an oversight, but that his action is irrevocable.

MISSOURI.

To Stop Improper Advertising.—At the February 10 meeting of the St. Louis Medical Society announcement was made that legislation had been discovered whereby the indecent advertisements of medical firms in the lay press could be suppressed, and the firms successfully prosecuted and driven out of business.

Reform in Control of Municipal Institutions.—At the meeting of the St. Louis Medical Society, February 3, the joint medical council, which consists of delegates from the various medical organizations of the city, presented a plan looking to reform in the system of control and management of the city's hospitals and dispensaries. At the present time the hospitals are under direct control of the health department, the health commissioner having power to appoint all the employees, medical or otherwise, of the various hospitals under the care of the city. There is no provision for a medical staff, either visiting or consulting, the entire medical as well as the executive charge of the hospitals being placed in the hands of a medical superintendent appointed by the mayor. To replace this antiquated system the council has suggested a plan, the principal features of which are as follows: 1. The absolute separation of the health department from the hospital department; 2, the vesting of hospital control in a board of trustees to be elected by the people; 3, the appointment by this board of an executive head for each institution, and 4, the appointment of a medical staff. The plan as presented was endorsed *in toto* by the society and will be brought up for consideration before the other societies represented in the council. It would appear that the profession is a unit in demanding these reforms, which will, however, require amendment of the city charter before they can be made effective.

NEBRASKA.

Training School Opened.—The training school of the City Hospital, Ord, was opened January 1, under the charge of Dr. Chester A. Brink.

Refused License.—The State Board of Health, after a lengthy hearing, adopted the following resolution regarding the application of Dr. Alfred Welsh of Haigler for a license to practice medicine:

Resolved, That a license to Dr. Welsh to practice medicine be denied at this time, and that the matter be referred back to the board of secretaries, and leave granted to amend his application, to be hereafter considered.

Injunction Made Perpetual.—In the suit of Dr. Baker, Madison, against Dr. John R. Montgomery of the same place, in which an injunction was asked on the ground that the defendant had sold his practice to the plaintiff and had agreed not to practice in that field, the district judge decided that a physi-

cian who sells his practice to another may not resume practice in the same field as a competitor of the man to whom he sold, provided that such an understanding existed between them. The judge granted the injunction applied for and made it perpetual.

General Hospital Opened.—The Omaha General Hospital was formally dedicated and opened January 28. The institution will accommodate 100 patients and has in addition accommodations for friends of patients who may wish to remain. The following have been appointed a staff for the ensuing year: Surgeons, Drs. Walter O. Henry and Edwin C. Henry; attending physicians, Drs. Andrew B. Somers, H. Leroy Crummer and John H. Vanece; consulting physician, Dr. Benjamin F. Crummer; gynecologists, Drs. Alvo S. Pinto and Frederick J. Wearne; obstetrician, Dr. Alonzo E. Mack; consulting obstetrician, Dr. Joseph C. Moore; oculist and aurist, Dr. Henry L. Burrell; neurologist, Dr. Samuel K. Spalding; dermatologists, Drs. H. Clayton Sumney and John W. Hellwig, and gastrologist, Dr. H. L. Akin.

NEW YORK.

To Prevent Marriage of Insane.—A bill has been introduced into the legislature forbidding the marriage of insane, epileptic, imbecile and feeble-minded persons. The bill provides that if thirty days before a marriage of persons known to have been in such a state, they shall file a physician's certificate of cure, the marriage shall not be considered illegal. Another measure makes it a felony for any person of sound mind to intermarry or live with such a person or aid in such a marriage. The punishment is ten years' imprisonment or \$1,000 fine, or both.

Violations of Pure-Food Law.—Papers have been served on two prominent grocers of Schenectady in civil actions instituted by the so-called pure-food law. Eight more actions against other grocers will be instituted within a few days. The penalty is \$100 for each offense. The action was brought by a special attorney assigned to the state department of agriculture. Last spring the state commissioner of agriculture sent inspectors all over the state to secure samples of food-stuffs for analysis. The results of these analyses were appalling. Eight hundred cases of violation of the pure-food law were sent to the attorney general, who sent them to the special attorneys appointed to the several counties. Owing to the deplorable conditions found, it is understood that sweeping amendments to the pure-food laws are to be submitted by the department of agriculture to the legislature for immediate adoption. Under existing laws it is impossible to reach the real offenders, many of whom are outside the state.

New York City.

New Health Department Building.—Health Commissioner Darlington formally opened the new laboratory building of the department February 9.

Microscopes for Columbia.—An equipment of microscopes for the department of physiology has been presented to this institution by Dr. David L. Haight, a graduate of the medical school in 1864.

Reception to Baron Takaki.—After the regular meeting of the New York Academy of Medicine on February 15 a reception to the baron was held, at which he made some remarks on medical schools in Japan.

Harvey Society Lecture.—The ninth lecture in the Harvey Society course will be delivered by Prof. T. H. Morgan, February 17, on "The Extent and Limitations of the Power to Regenerate in Man and Other Vertebrates."

Dinner for Hospital.—The committee which was appointed at the dinner for the Manhattan Eye and Ear Hospital last year to furnish a dinner in 1906 has arranged to give this dinner at the University Club, February 20.

Low Death Rate.—The death rate for the week ended February 3 was the lowest on record for the corresponding week in any year since the records have been kept, being equivalent to an annual rate of 18.1 per 1,000. Last year the rate for the corresponding week was 19.53.

Remodeled Willard Parker Hospital Opened. This hospital was reopened to the inspection of physicians and the public February 9. Among the many new features of the building are the sun parlors on every floor and the thoroughly equipped wards for treating contagious diseases.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended February 3, 1,489 cases of measles, with 52 deaths; 378 cases of diphtheria, with 39 deaths; 343 cases of tuberculosis, with 178 deaths; 208 cases of scarlet

fever, with 7 deaths; 41 cases of typhoid fever, with 3 deaths; 28 cases of cerebrospinal meningitis, with 17 deaths, and 180 cases of variella, a total of 2,667 cases, with 296 deaths.

The Skene Monument.—The monument of the late Dr. Alexander J. C. Skene, which is now being erected at the western end of the Prospect Park Plaza, will be completed within six weeks. The monument will consist of a bust on a twelve-foot marble shaft, raised against a marble background, which is to bear an inscription telling of Dr. Skene's achievements. The cost of the work is to be \$5,000. This memorial will stand in the most conspicuous position that could have been assigned it in the neighborhood of the park.

Society of Sanitary and Moral Prophylaxis.—At a meeting of this society held at the Academy of Medicine, February 8, the question whether instruction in the nature and dangers of venereal diseases should be given to the men of the Army and Navy service was discussed by Col. Valery Havard, United States Army, and Medical Director George E. H. Harmon of the United States Navy. The question whether the co-operation of the national government should be enlisted on this work was discussed by Dr. Louis L. Seaman.

PENNSYLVANIA.

Personal.—Dr. Thomas Redding, Hallowboro, was severely injured by being thrown from his carriage when it was struck by a trolley car, February 3.

More Births Than Deaths.—According to the report of the secretary of the Board of Health, Jenkintown, with its 2,500 inhabitants, had only 25 deaths in the year 1905, or one in every 100 population. There were 15 marriages and 42 births.

Free Antitoxin.—In the few months that the system of free distribution of the diphtheritic antitoxin throughout the state has been in force, the state's death rate from that disease has been reduced almost 80 per cent. This remarkable reduction in the death rate means that instead of claiming 420 lives out of every 1,000 children or adults afflicted with the disease, diphtheria now gets only 88 victims out of 1,000.

Philadelphia.

Bequest.—The will of the late Adam W. Louth devises \$5,000 to St. Agnes' Hospital for the endowment of a free bed to be known as the "Mary Louth free bed."

Will Keep Cars Clean.—The co-operation of the Rapid Transit Company in the crusade for clean and wholesome cars has been promised by the officials of the company. It is stated that they will clean the cars daily and also disinfect them with carbolic acid spray or carbolic acid scrubbing each day.

Society Election.—At the general meeting of the Medical Society of the Woman's Hospital the following officers were elected to serve the current year: President, Dr. Frances C. Van Gasken; vice-president, Dr. Clara T. Dercum; treasurer, Dr. Miriam M. Butt, and secretary, Dr. Ellen C. Potter.

Dr. Marshall Resigns.—Dr. Clara Marshall, who for many years held the chair of materia medica and therapeutics in the Women's Medical College, has tendered her resignation, to take effect at the close of the present session, June 1. She will, however, retain her connection with the college as its dean.

Voodoo Doctor to Hang.—The governor has fixed March 26 as the date for the execution of George P. Hoosey, a "voodoo" doctor from whom Mrs. Catherine Danz is alleged to have received a powder which is said to have caused the death of her husband. Mrs. Danz was convicted of murdering her husband and was sentenced to be hanged. The board of pardons, however, recommended that the sentence be commuted to life imprisonment.

Hospital Reports.—During January 63 patients were under treatment in the Kensington Hospital for Women. The Germantown Hospital admitted 132 and discharged 92 patients. Seventeen hundred cases were treated in the different dispensaries. The Samaritan Hospital admitted 115 patients to the wards and discharged 104. Four hundred and thirty-four new patients were admitted to the dispensaries and 2,048 total visits were made to the different dispensaries.

Personal.—Dr. Roland G. Curtin presided at the third annual banquet of the Center County Association at the Hotel Majestic, February 7. Dr. John H. Musser represented the University of Pennsylvania at the annual reunion of the New England Society of the alumni of the university, held in Boston, February 6. Dr. William H. Teller will entertain the Association of ex-Residents and Resident Physicians of the Jewish Hospital at his home on February 20.

Health Report.—The total number of deaths reported for the week numbered 584. This is an increase of 13 over those reported last week and a decrease of 28 from the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 29; measles, 20; scarlet fever, 4; whooping cough, 8; diphtheria, 11; meningitis, 3; consumption, 52; cancer, 27; apoplexy, 23; Bright's disease, 33; suicide, 4; accidents, 19; heart disease, 49; acute respiratory disease, 120; enteritis, 29, and marasmus, 2. There were 530 cases of contagious disease reported, with 44 deaths, as compared with 507 cases and 34 deaths in the preceding week. There were 361 cases of typhoid fever, with 29 deaths, or 14 more cases and 8 more deaths than for the previous week.

VIRGINIA.

Personal.—Dr. H. Ward Randolph of Richmond has sailed from New York for Europe, where he will take postgraduate work.

Smallpox Outbreak.—Smallpox has broken out, chiefly among the negroes at Port Walthall, Chesterfield County. The public schools have been closed till all the children have been properly vaccinated. No deaths have been reported so far.

Physician's Tax Abolished.—The city license tax on physicians has been abolished by Richmond. The tax was an arbitrary measure varying from \$10 to \$100 per year, based on the supposed prosperity of the physician. The yearly income to the city was about \$4,300.

Physician Assaulted.—Dr. J. L. White, one of the leading physicians of Farmville, was murderously assaulted on the night of February 5 when returning from a call. His skull was fractured and his condition is very serious. His assailant has not yet been captured.

GENERAL.

Vaccination for the Filipinos.—The Philippine Commission has appropriated \$100,000 for the purpose of conducting vaccinations throughout the islands.

Cholera in the Philippines.—Dr. Heiser, chief quarantine officer for Manila, reports that cholera is now gradually disappearing from the province of Cavite, and apparently is establishing itself in the province of Bulacan. The bureau of health is following the disease from center to center and promptly stamping it out wherever it makes its appearance. These efforts so far have been successful, in that the disease has practically remained stationary.

Annual Report of Queen's Hospital, Honolulu.—The annual report of J. F. Eckardt, superintendent of the Queen's Hospital, contains the following: The number of patients in the hospital January 1 was 47; admitted during the year, 606; total number of patients treated, 653, as against 654 in 1904, 783 in 1903, 752 in 1902 and 817 in 1900. The number of deaths, 42 in a total of 653 patients, gives a percentage of 6.41 per cent, as against 7.8 per cent. in 1904, 6.14 per cent. in 1903, 6.12 per cent. in 1902 and 8.44 per cent. in 1901. Of the patients, 171 were natives of Hawaii; 146 of the United States; Porto Rico, 60; Germany, 43; Portugal, 40; Japan, 24; China, 22; Korea, 21; Norway, 18; England, 16; Sweden, 12; Ireland, 8; Scotland, 7; France, 7; Australia, 5; Russia, 5; Argentina, 4; Belgium, 4; Denmark, 4; Italy, 4; Spain, 4; West India, 4; Austria, 2; Canada, 2; Holland, 2; Philippine Islands, 2; India, Guam, Peru, Panama, British Guiana, Martinique, St. Helena and Nova Scotia, each 1. Sixty-two patients were refused admission. Of these 24 were suffering from pulmonary tuberculosis and 9 from other incurable diseases; while 29 were not proper hospital cases: 52 patients, after receiving treatment, left the hospital, and 10 refused to remain, although urged to do so; in 3 emergency cases the patients were found to be dead on arrival; 8 patients were sent to the Home for Incurables, and 1 was sent to the insane asylum. Of the 653 patients treated, 330 were pay patients. The number of patients in the hospital on Dec. 31, 1905, was 56, viz.: 15 Hawaiians, 2 Chinese, 2 Japanese, 2 Porto Ricans, 3 Koreans and 32 of other nationalities.

Manila Medical Society Affairs.—According to the annual report of the secretary of the Manila Medical Society for 1905, on Jan. 1, 1905, the society had 46 active and 13 associate members. During the year 17 active members were admitted, 2 members have been separated from the society (Drs. Lyons and Miciano); there have been 5 resignations from active and 7 from associate membership, and one transfer from associate to active membership. The society consists at the present time of 56 active and 5 associate members. Since its organization there have been 74 active and 15 associate members. Of the active members 12 have resigned, 4 have been separated

and 2 have died. Of the associate 9 have resigned and one has become an active member. The card index of the physicians of Manila has been kept up to date and corresponds with the list kept by the bureau of health. It shows that there are in Manila 230 licensed physicians, and that there are but 153 licensed practitioners of medicine outside the city of Manila. Of the practicing physicians in Manila about one-fourth are Americans. In the city of Manila there is one physician to about 1,000 people. The report expresses satisfaction at the increased number of Filipino physicians who have applied for membership in the society, which has on its roll Filipino, German, English, Japanese, Chinese and American representatives. Undoubtedly much interest in the society was aroused by the last annual meeting of the association, and this result is a sufficient reason for the most strenuous endeavors on the part of the members of the society to make the coming meeting and other subsequent meetings of the association increasingly interesting. There is great lack of interest, however, in the scientific work of the society. There must be some aspects of individual practice in Manila that would be interesting to the members, some points in diagnosis or treatment that could be cleared up by discussion. There is a valuable working library in the bureau of science from which much direct and collateral information could be drawn and presented to the society. There is always a chance for research work in the laboratories. The report states that there is no reason why the society should not become a great power for good in the Far East, and why it should not be a very influential factor, not only in the dissemination of the facts of medicine in general and tropical medicine in particular, but also in the institution and carrying out of such legal reforms as bear on medical work in general. With the institution of the medical school the society may have a larger sphere of influence. By the promulgation of the principles of medical ethics a great change would be wrought through the rising generation, and by taking pains to interest the students in the work of the society, a scientific and useful body of men may be trained to spread clean medical customs throughout the islands. This, after all, is the most useful function of the society. Unscrupulous men may be turned out of the best clinics, but with the ever-present influence of a body of conscientious well-trained men, quackery may be reduced to a minimum. All this looks forward naturally to the establishment of affiliated provincial societies, in order that throughout the islands the same influences may work, and that in time better and more complete knowledge of health conditions may be accumulated. The participation of the physicians of the Army and Navy has been a continued source of pleasure and profit. The permanent resident members of the society appreciate their active assistance. The secretary states that the retrospect is comparatively bright, and the prospect brighter. The treasury is comfortable. There should be every hope for continued growth, prosperity and usefulness.

FOREIGN.

Medical College for Peking.—The Union Medical College, which was established by the five Protestant missions, was formally opened February 13.

Epidemic Cerebrospinal Meningitis in Germany.—The official bulletins state that 61 cases of epidemic cerebrospinal meningitis were reported in upper Silesia in the course of December, with 34 deaths. Several cases have also been reported from the Duisburg district.

Successor to Nothnagel at Vienna.—Nothnagel's vacant chair has been offered to Quinke of Kiel and to Strimpell, but each declined the honor. Minkowski of Greifswald and von Noorden of Frankfurt-on-the-Main were then proposed by the Vienna faculty of medicine, and late advices state that von Noorden has accepted.

Approaching International Medical Congress.—The American national committee has sent THE JOURNAL a list of the American physicians who have already signified their intention of attending the International Medical Congress which convenes at Lisbon April 19. The list is a long one and includes many prominent names. See also THE JOURNAL of Jan. 20, 1906, page 207.

International Cancer Congress.—The inauguration of the new Cancer Institute at Heidelberg next September is to be accompanied by an international "congress of cancerology." The local authorities have pledged themselves to support the cancer institute for fifty years. It was erected by popular subscriptions, Czerny heading the list with a large sum. Nearly \$200,000 has already been raised. As already mentioned, Czerny has resigned his chair of surgery and will devote his energies henceforth to the cancer institute.

Typhus in Mexico.—Dr. Hamilton of the Public Health and Marine-Hospital Service reports from Laredo that a sanitary campaign is to be inaugurated to prevent the spread of typhus fever in the City of Mexico, where it is assuming a grave character. The disease is practically confined to persons who are unable to travel, and, therefore, is not a serious menace to the United States at present.

A Layman at the Head of the Austrian Public Health Service.—The public health and sanitary service of Austria, since the death of Dr. von Kusy, has been placed in the hands of Baron Hein, a lawyer by profession. The Vienna Medical Chamber (Aerztekammer) has presented a formal protest to the government against this appointment of a layman to a position which above all others requires medical knowledge.

German Congress of Surgery.—The thirty-fifth congress of the German Surgical Association will be held at Berlin, April 4 to 7, the date having been advanced a few days so as not to conflict with the International Medical Congress at Lisbon, April 19. The subjects appointed for discussion are: "Military Surgery in the Russo-Japanese War," with addresses by participants; "Surgical Treatment of Gastric Ulcer"; "Of High Rectal Cancer," and a general discussion of Bier's congestive hyperemia in the treatment of acute inflammations.

Cancer Research in Natal.—A local committee has been formed in Natal to co-operate with the Imperial Cancer Research Fund. The occurrence of malignant disease among such colored races as inhabit the colony and among birds, reptiles, fish and the lower animals, is being investigated. All physicians and veterinarians will be asked to give their assistance in the work, and an endeavor will also be made to enlist the sympathies of naturalists and sportsmen. The *British Medical Journal* states that all specimens suspected of cancerous disease are examined, free of charge, at the government laboratories at Pietermaritzburg.

Schaudinn Summoned to Hamburg.—F. Schaudinn of Berlin has been working lately in the Hamburg Institute for Tropical and Ship Diseases, under commission from the Imperial Council of Health. The Hamburg authorities have now decided to invite him to become permanently connected with the institution, the official title of which is the "Institut für Schiffs- und Tropenkrankheiten." He is to be assistant in zoology with a salary of 9,000 marks (about \$2,250), and a pension later. The sum of \$14,250 has been appropriated to enlarge the institute. Schaudinn's fame as an authority on protozoa was so well established that when he announced the discovery of the *Spirocheta pallida* the world stopped at once to listen, while the words of a lesser authority might not have attracted attention for some time.

Reservoir Leakages and Fever in Bombay City.—The Malabar Hill and Bhandarwada reservoirs in the city of Bombay have leaked for some time and the surrounding areas of ground have been sodden and swamped. The Indian correspondent of the *Lancet* states that associated with this condition these surrounding areas have been fever-stricken and the corporation has now called for a report. Since 1901 the health department has kept the tanks themselves free from mosquitoes, but the danger covers a much wider area. All the pools, surface collections of water as well as the wells and drains must be treated by an active antimosquito campaign pending the repair of the huge reservoirs. The anopheles mosquitoes have been found in nearly all parts of the city, but the pools and swampy places occasioned by these leakages have been their chief breeding grounds.

Von Bergmann Made Senator for Life.—Kaiser Wilhelm has recently appointed von Bergmann member of the upper house of parliament (Herrenhaus) for life. This is the first time that such an honor has been conferred on a member of the medical profession. Küster of Marburg and Förster of Breslau are members of the house, but were elected as representatives of their university towns. Ernst von Bergmann was born in Russia in 1836, and was professor at Dorpat until invited to the chair of surgery at Würzburg in 1878. He served through the Franco-Prussian war and also through the Russo-Turkish campaign in 1877. In 1882 he was called to Berlin to Langenbeck's vacant chair, where he has since been. He is one of the publishers of the *Archiv. f. Klin. Chirurgie*, as also of the *Centralblatt und der Sammlung f. Klin. Vorträge*, and has long ranked as one of the leading surgeons in the world, and as an able writer on surgical topics.

Plague in Japan.—Passed Assistant Surgeon Moore reports from Yokohama that plague continues to prevail in Osaka and Kobe. No new cases of this disease are reported from Shimonoeki, but a doubtful case is said to have occurred in Nara. The authorities are conducting an active antiplague campaign,

involving considerable expenditure. In Yokohama conspicuous posters are displayed announcing an increase in the number of prizes in the lotteries held for the benefit of captors of rats. Professor Kitasato recently delivered a lecture in Yokohama on plague prophylaxis, advising the dispatch of Japanese officials to India for duty in the consulates there, for the purpose of strictly examining into the sanitary condition of freight shipped from that country to Japan. In support of his position, Professor Kitasato cited the fact that the United States, with a view to keeping out sufferers from eye disease, requires the medical officer stationed in Yokohama to examine the eyes of passengers before embarkation.

Barbieri Endowment at Vienna.—Dr. D. Barbieri, who died recently at Vienna, bequeathed 300,000 kronen (about \$75,000), to the university to endow stipends for needy medical students at the first and second surgical clinics. Each beneficiary is to receive \$500 a year for three years; the endowment will thus provide for six of these stipends. He qualified his bequest with the condition that it is to be called the "Billroth Endowment," in memory of his beloved chief, Billroth. An obituary notice in the *Wien. klin. Wochtsch.* states that he was known as Billroth's "faithful Domenico," and always accompanied him when Billroth was summoned away from home for important operations. He was his assistant at the famous first resection of the stomach, and was also the first to introduce massage into Austria from Amsterdam, where Metzger had revived the ancient art of kneading the tissues. Barbieri was also renowned as an anesthetist, scrupulous of his fame that he had never lost a patient from this cause. He was further distinguished by the fact that he never wrote a line for publication and never occupied an official position, although one of the most popular physicians of Vienna. He was especially skilled in the art of keeping hope alive in the hearts of incurable patients.

Endowment of Medical Institutions to Commemorate the Silver Wedding of the Emperor and Empress of Germany.—Our German exchanges report a number of new medical institutions planned to commemorate the silver wedding anniversary of the royal pair. Berlin has appropriated \$25,000 for a tuberculosis sanatorium, and Mülheim and Schöneberg and Solingen have made similar appropriations. Magdeburg has appropriated \$25,000 for a children's hospital, and Berlin has made arrangements for a model institution for the scientific study of means to reduce infant mortality. The suburb of Charlottenburg has donated a spacious tract of land for the new institution. It is planned for fifty or sixty beds, and will be divided into a number of departments. Women will be received during the last three months of pregnancy. They then enter the maternity, and in two weeks pass to the mothers' department, where they remain three months. Infants which have to be artificially fed are received into another department to which children from outside are also admitted. A ward for sick children will also be provided, and after the mothers leave the institution they can return for consultation at stated periods. In this latter department, similar to the "infant consultations" of France and the one now in operation in Philadelphia, advice will be given to prospective and to nursing mothers, and prizes will be given for nursing, and milk distributed. A model dairy and ample chemical and bacteriologic laboratories will complete the institution. Professor Heubner and the president of the Imperial Council of Health were mainly instrumental in the founding of this model Infants' Home. Vienna has already a similar one on a smaller scale in successful operation. It is the work of a local charitable society called "Infant Protection."

Ideals Proposed for the Organized Medical Profession in France.—Julien Noir's article on this subject is quoted in the *Presse Médicale*, No. 103, and we translate the latter part entire as his suggestions have attracted considerable attention: "If, as you hope," he says, "this movement for closer organization spreads throughout the physicians of France, the now isolated medical societies, when they become federated or united, may be able to play a most important rôle in the future. They will not restrict themselves merely to the defense of the profession and its members, they will form in the body politic a free institution which will, little by little, gradually assume all the official medical functions. A few years ago the authorities of the Lot-et-Garonne department placed in the hands of the medical association for that department the entire task of organizing the free medical assistance for the department. This example may be followed by others, and gradually the local authorities will give up more and more to the organized profession in the various departments the entire system of free medical aid, even including the hospitals. The French law authorizes the departmental

medical associations to give advice to the authorities on matters concerning their profession. What concerns the medical profession is a vast field, embracing all that pertains to hygiene and the care of the sick. The medical associations should be able to reply competently to questions asked them, and they should solicit such questions as occasion arises. The medical associations then will not be mere scientific nonentities whose advice is absolutely disregarded by the authorities when they think to ask for it; they will be powerfully organized bodies which will force the hand of the local authorities by the influence which each one of their members exerts on public opinion. Without dropping into commercialism, the departmental medical associations, with the resources at their disposal, might erect a number of scientific establishments which would facilitate the exercise of their profession and benefit their patients. . . . The local and state medical societies will no longer appear as merely works for timid defense, but will become universally regarded as beneficent institutions, indispensable to the welfare of the public. The physician who holds himself aloof from his confrères under the new order of things will find himself at such a woeful disadvantage to the others that he will haste to join. We recognize the fact that these ideals will not all be realized in our day and generation, but we are certainly beholding the dawn of an evolution of this kind. The premonitory symptoms are already apparent. Medical students used to live apart, meeting only at restaurants and similar public places. Care for the future was the least of their preoccupations. We have seen how in the last few years they have organized into associations for friendly intercourse, and quite recently have taken another forward step in organizing and supporting nobly a professional association, the "Corporative des Etudiants de Médecine," at Paris. The young physicians trained in this new association will bear with them into the practice of their profession a new spirit of organization. The young blood pouring into the local and state medical associations will revivify them, and what we now regard as an impossible ideal will be the practical reality of to-morrow." In France and Germany the physicians throughout the country are officially grouped in regional medical associations called syndicates or medical chambers ("syndicats" and "Ärztekammer"). These organizations are entirely distinct from the scientific medical societies that may or may not be organized. They are solely for the regulation of matters affecting the profession materially or socially. They have been described more fully in these columns on page 1435 of volume XLII, 1904. The American Medical Association is so broad in its scope that it practically includes all that is meant by these foreign syndicates and medical chambers as well as all the local and general scientific organizations.

CANADA.

Personal.—Dr. P. H. Bryce, chief medical officer of the Department of the Interior at Ottawa, is in Vancouver, taking over the Detention Hospital in that city.—Dr. Mason W. H. Pitman, Montreal, has been appointed resident physician at the St. Lawrence State Hospital, Ogdensburg, N. Y.

Vancouver Association and Patent Medicines.—The Vancouver Medical Association is taking active steps to have legislation passed in British Columbia to regulate the traffic in patent medicines, and will have the hearty co-operation of the secretary of the Provincial Board of Health, Dr. C. J. Fagan, who has been instructed by the government of British Columbia to act in the matter.

A New Dispensary for Women.—A new dispensary for women only was opened in Montreal on February 1. It will be conducted by women physicians. Dr. Grace Ritchie England, assisted by Dr. Helen Macdonald, will hold a special clinic for diseases of women on Mondays and Thursdays. The clinic will be a free one, but a small sum will be charged for medicines and dressings.

New Medical Society Formed.—The Essex County (Ont.) Medical Association was formed January 26 at Windsor, Ont. Dr. James Brien, Essex, was appointed honorary president; Dr. Hughes, Leamington, president; Dr. Sanson, Windsor, vice-president, and Dr. McKenzie, Kingsville, secretary-treasurer. All the physicians in Essex County will be canvassed and an endeavor will be made to unite the entire profession in that county.

Prevalent Diseases.—Typhoid fever is decreasing in Montreal, only 18 cases having been reported in the week ending January 27.—There were only 96 cases of diphtheria in Toronto in January, 1906, against 187 in the same month in 1905; 25 of scarlet fever against 48, and 12 of typhoid fever against 14 in 1905.—Smallpox is reported on the Indian re-

serve near Vernon, B. C., and Dr. Fagan, Victoria, has gone to investigate.—There is an epidemic of typhoid fever at Fort William, Ont., and it has been necessary to place from 20 to 30 patients in the contiguous hospital of Port Arthur.—Smallpox of a mild type is said to be present at La Riviere, Manitoba.

For a National Sanitarium.—Lord Strathcona, the Canadian high commissioner in England, has written Dr. C. J. Fagan, secretary of the Board of Health of British Columbia, expressing his willingness to contribute to a national sanitarium, where patients with tuberculosis might be gathered together at some point in Canada most suitable for the purpose. Dr. Fagan has been in communication with the different boards of health in Canada, and once the health authorities of the respective provinces and the general public evince a desire to participate in such an undertaking, the movement will be started and Lord Strathcona would then demonstrate that he takes a lively interest in the tuberculosis problem in Canada.

Hospital News.—The fund of the Toronto General Hospital now amounts to \$1,113,886, the County of York, in which Toronto is situated, having contributed \$15,000.—The total number of patients treated in the Winnipeg General Hospital during the week ending January 27 was 360; of these 224 were men, 94 women and 42 children.—Grace Hospital, Toronto, admitted 106 patients in January. There were 14 births, 11 deaths and 100 patients discharged during that month.—A new ward has recently been added to the Provincial Hospital for the Insane at New Westminster, B. C.—The Manitoba government has given a tract of land containing 1,500 acres for the purposes of a consumption sanatorium at Holland, Man.

Quarterly Meeting of the Ontario Board of Health.—The Ontario Board of Health held its regular quarterly meeting, which was also the annual meeting, in Toronto, January 31 and February 1, 2 and 3. A resolution was unanimously passed advising the government at once to proceed to the establishment of a department of public health for Ontario. At present health matters are administered under the department of the provincial secretary and the minister of agriculture, although it is hard to understand what a minister of agriculture knows about public health. Drs. Kennedy and Oldright, the two senior members of the board, were appointed to represent the board at the approaching International Medical Congress at Lisbon.

LONDON LETTER.

A New Plague Prophylactic.

A preliminary report by Dr. Klein to the local government board on a new plague prophylactic has just been issued. Dr. Klein found that in animals dead from plague when all the bacilli contained in their organs had been killed in the process of drying, emulsions made from the dried material and injected into mice and rats were capable of causing death within twenty hours, with symptoms like those of acute plague, though after death the tissues did not contain the bacilli. He also found that the injection of an amount of emulsion insufficient to cause speedy death produced an illness from which the animals usually recovered. When these animals were then injected with virulent cultures of the bacillus they proved refractory to infection. He concluded, therefore, that the dried organs of animals dead from plague contain a powerful plague toxin which, in appropriate doses, may serve as a prophylactic. Dr. Klein then injected into a series of animals the dried organs (containing organo-toxin and dead bacilli) of various rodents dead of plague with the purpose of ascertaining the protective power of these materials for similar rodents against subsequent infection. Many experiments were made in order to find the best methods of preparing and preserving prophylactic material as well as to determine what portions of the body of an animal dead of plague are the most efficacious. He found that a variety of tissues taken from guinea-pigs dead of subacute plague, finely minced aseptically, spread out in thin layers, on sterile glass dishes, and dried over sulphuric acid at from 46 to 47 C., yield a material which can be rapidly and easily prepared, is of uniform efficacy, and is superior in every way to other prophylactics. A guinea-pig yields from 5 to 7 gm. of dry powder prepared from the bulbo, spleen, lungs and liver. The protective dose for a rat is from 10 to 15 mm. Three days' drying is more than sufficient to devitalize the bacilli contained in the organs. The dry scales resulting are rubbed down to fine powder in a sterile mortar. The powder is transferred to a sterile wide-mouthed bottle plugged with sterile cotton wool, which is kept for two or three days at 37 C. to complete the process of drying. The

cotton wool is then replaced by a glass stopper and the prophylactic is ready for use. It can be preserved indefinitely in a dry state by a layer of paraffin over the stopper, and when tested by culture is found sterile. In preparing the prophylactic for use it is rubbed down in sterile warmed distilled water and the emulsion thus made is injected subcutaneously. Dr. Klein has experimented on several dozen white mice, from five to six dozen guinea-pigs and over 150 rats, and finds that the animals are protected against the most virulent bacilli. He concludes that from 5 to 7 mgm. of the dry prophylactic would be a proper dose for a man. A large guinea-pig dead of subacute plague would yield from 800 to 1,000 human doses—an amount of protective material equal to from 3 to 5 liters of Haffkine's fluid prophylactic. As the latter requires from four to six weeks for preparation while the former requires only from ten to twelve days, is produced at a much smaller cost and will keep in the dry state any length of time, the advantages of Dr. Klein's method are obvious.

Action Against a Physician for Mistaken Diagnosis.

An action for mistaken diagnosis has been taken against a physician under outrageous circumstances. A woman was taken ill and after attending her for some days the physician certified that she was suffering from typhoid fever and she was removed to a fever hospital, where the disease from which she was suffering was regarded as doubtful and the physicians thought that it would take a week or longer to say whether or not she had typhoid fever. They suspected typhoid fever and thought that from the symptoms the patient's physician was thoroughly justified in reporting the case as one of infectious disease and in having the patient removed to a hospital. Ultimately it was concluded that the patient was suffering from influenza. The judge said that the action ought never to have been brought, that the physician sent the patient to hospital for proper treatment, and that she had shown her appreciation by bringing the action against him. He gave judgment against her with costs on the highest possible scale.

Premature Burial.

The London Association for the Prevention of Premature Burial has held its ninth annual meeting. The report states that the past year was the most successful yet experienced. Not only was there a larger number of members, but the demand for the association's literature had increased. An endeavor is being made to appoint qualified medical examiners to the association in all parts of the United Kingdom. As a result of a lecture by a member of the association in Stockholm about fifty persons signified their desire to form a Swedish society. Archdeacon Colley moved a resolution that the new government be requested to amend the burial laws so as to secure complete immunity from the danger of premature burial. He said that he was himself an instance of escape from premature burial when a child. He was laid in a coffin and for two and one-half days was regarded as dead, but the nurse saw a movement of his hand, a physician was called and he was restored to consciousness. Only two years ago a grave was opened in his own parish and proof was found of the body having been buried alive. From the position of the bones it was seen that the person had wrenched up the lid of the coffin and turned over on the left side. The resolution was seconded by Dr. Hadwen and adopted. Lieut.-Gen. Phelps brought forward a suggestion for detecting cases of apparent death. He said that he once suggested to a physician that a device should be introduced into mortuaries by which any movement of an apparently dead person would ring an electric bell in the porter's lodge. The reply he received was that the porter would probably die of fright if the bell rang. He proposed that the association should try to enlist the sympathy of boards of guardians, hospitals and other authorities having mortuaries. A reward should be offered by the association for the resuscitation of persons supposed to be dead.

The Instruction of Civil Practitioners in Military Work.

In any large war of the future recourse must be had to civil practitioners to supplement the army surgeons. Hence the necessity for some system of training in times of peace in military duties. A number of physicians resident in London have expressed their willingness to render assistance in time of war provided they are instructed in the work which they may be called on to perform. A request for such instruction was sent to the director general of the army medical services and he has arranged for a short course of lectures and demonstrations to be given at the West London Hospital on alternate Saturdays at 4 p. m. An attempt will be made to give a broad and practical view of the subject without going much into detail.

Lunacy Action Against Doctors for \$50,000.

An action has been brought in Scotland for \$50,000 damages by a Clyde pilot against two physicians. They signed medical certificates in September, 1903, under which he was placed in an asylum for four months. He was discharged as sufficiently recovered in January, 1904, subject to certain precautions. At the trial a large number of lay witnesses testified to the man's sanity before he was placed in the asylum. Two physicians who had not seen him also gave evidence on his behalf. Evidence for the defense was given showing that he was insane and threatened to shoot a friend whom he believed to be criminally intimate with his wife, and as to his violence to his wife and son. Not a particle of evidence was given as to any reason for his suspicions of his wife, and his conduct was proved to have been riotous, irritating and dangerous. Both physicians had taken a great deal of trouble with regard to his case. They examined him repeatedly and took every reasonable measure to avoid certifying him—by medical treatment and by sending him to the country. The medical certificates were in proper form, according to the Scottish lunacy law, and the facts indicating insanity observed by both physicians were full and sufficient. On his admission to the asylum the superintendent found him to be insane. Dr. Clouston and Dr. Joseph Bell gave expert testimony as to the sufficiency of the certificates and to the urgent necessity for asylum care in the condition shown by the man on admission both for his own treatment and for the public safety. Judgment was given for the physicians against the plaintiff. The case shows the need of reform of the Scotch law so as to prevent such vexatious actions against physicians who do only their duty. In England such proceedings can be stopped by a judge *ab initio*. The action of the two physicians who gave evidence on behalf of the plaintiff has aroused much indignation and a subscription list will probably be opened to enable the profession to give practical expression to their sympathy with the defendants in the heavy legal expenses to which they have been put through no fault of their own.

School Hygiene.

The report of Dr. Niven, health officer of Manchester, contains some important suggestions on the subject of school hygiene. He points out that the education of children must fail unless they are healthy and well nourished, and that from the ranks of the underfed comes the most abundant supply of the vicious and criminal classes. He thinks that a magnificent opportunity is offered to educational authorities for seeing that the health of children is properly looked after, and that this duty is incumbent on them, since on its performance depends the success of the educational system. The first thing necessary is a race of young women who understand in some degree the duties of a wife and mother. A girl should be grounded in certain domestic branches of knowledge before leaving school. She should know how to cook, sew and mend. She should know how to clean a house and the dangers of filth. She should learn how to clean, manage and feed infants and young children. She should know something of infectious diseases and how to act when they occur. All boys and girls should be taught the elementary principles of personal hygiene. Teachers have so many opportunities of observing their scholars at their tasks, physical exercises and games that they ought to be able to perceive when anything is seriously amiss with their health and should call the attention of the medical officer of the school. The teachers should be instructed in these duties by the medical officers, a procedure which is carried out in Manchester. Training in the management of infants and young children might be carried out in crèches, but they are not quite suitable. What is required is a central hall for teaching purposes, with rooms leading off from it. With this school should be associated a museum of feeding appliances and a teaching kitchen. With the school might also be associated a plant for the modification and sterilization of milk. Further control of the rearing of children should be exercised by means of health visitors or lady inspectors.

An Infants' Milk Depot.

Dr. Newman, the health officer of the metropolitan borough of Finsbury, has published a highly interesting account of the first year's working of a depot formed under philanthropic auspices for the supply of sterilized and modified milk. The depot was established by the Finsbury Social Workers' Association and by funds privately subscribed. It has been conducted on four definite principles: 1, Absolute control of the milk and avoidance of the blunder of sterilizing udder milk; 2, medical supervision of the entire management of the depot and of the children supplied from it; 3, a discriminating and careful distribution of the milk to only such infants as could

not be breastfed, and 4, a systematic study of the effect of milk on the children. The first condition was secured by the effective co-operation of the farmer who supplied the milk. The cows, the utensils and the milkers are kept in the cleanest possible conditions. Immediately after milking the milk is removed and strained through a metal screen. It is then cooled in the open air under cover and at once taken to the laboratory, where the cream is separated and three modifications are prepared, adapted to the needs of infants at different ages. It is then poured into sterilized bottles. In winter the bottled milk is Pasteurized at a temperature from 140 to 150 F. for twenty minutes; in summer it is sterilized at 212 F. for twenty minutes; in midwinter for a period of some weeks no Pasteurization or heating of any kind is done. After Pasteurization the milk is cooled to 53 F. by admitting cold water into the sterilizer and is kept at that temperature until the time of transmission by rail. In summer it is kept on ice until it is distributed. The depot has proved of substantial service in reducing infant mortality, but the use of the milk has not afforded complete protection against autumnal diarrhea. Out of 129 infants fed on it 18 suffered from the disease and 5 succumbed. Dr. Newman concludes that the virus of the disease gained access to these infants through dried dust and dirt, particularly by the use of "comforters" or dummy teats.

Medical Reciprocity with Japan.

At the last session of the General Medical Council, the motion of Dr. Norman that the medical act of 1886 should apply to Japan was carried without discussion. This recommendation of the council was approved at a meeting of the privy council in December last. This will give to Japanese physicians the right to be registered as foreign practitioners in the medical register.

Poisoning by Oil of Eucalyptus.

A man, aged 34, died at Derby from an overdose of oil of eucalyptus, a drug which is not generally recognized as a dangerous poison. He sent to a druggist for three pennynorth and drank the whole—six drams—in an equal quantity of warm water. He became unconscious and was removed to a hospital, where he died two days later. Acute congestion of the lungs was found at the necropsy. A coroner's inquest followed and the jury expressed the opinion that eucalyptus oil should be scheduled as a poison.

Pharmacology

No Longer Members of Proprietary Association.

The Kress & Owen Company, New York City, ask us to announce that they have resigned from the Proprietary Association.

Not for Honor but for Money.

One of our southern exchanges in a recent issue devotes considerable space to defending the nostrum business, proprietors and proprietary remedies. Incidentally, it applies many disapproving adjectives to the Council on Pharmacy and Chemistry of the American Medical Association, to THE JOURNAL of the Association and to the various state journals that have dared to criticize the present intolerable condition of humbug in the business of making and selling "proprietary" remedies. In its opinion: "These manufacturers are not in business just for honor and sentiment, but for the money they expect to get out of their products, and for this very reason it is a guarantee that their products will be all that scientific knowledge can produce, for they know that their purity, efficacy and scientific adaptability to the cure of disease will be put to the test by the prescriber," etc. Exactly. "These manufacturers are not in business just for honor and sentiment, but for the money they expect to get out of their products," in some cases, by lying and swindling, by fraud and misstatement, by almost every sort of graft known to the "patent medicine" manufacturer and his able "adsmith." They can get more money from their products if they mix acetanilid, soda, etc., and sell it at an enormous profit as a "brand new" chemical than they can if they tell the truth. To find out the truth and to tell it is, in part, the task of the Council on Pharmacy and Chemistry. No honest manu-

factor who is trying to market an honest preparation in an honorable way need have the slightest fear of injury from the council. Candidly, does it not seem true that manufacturers who conduct their business for money only, and without due regard for "honor and sentiment," should receive some little investigating? Does not the result of this investigation convince one that there is, perhaps, too much graft in the business of foisting nostrums on the medical profession? Shall we try to know the truth about these things, or shall we continue to be humbugged and swindled? Is ignorance "bliss," or is it a condition dangerous to our patients and "blissful" only so far as the interests of the manufacturer are concerned?

Reasons for the Stand Taken by Physicians and by Newspapers on the Nostrum Question.

The fight on the nostrum evil recently inaugurated by the lay press was duly seconded by the National Legislative Council in its meeting at Washington (THE JOURNAL A. M. A., Jan. 20, 1906).

The principle of procedure embodied in the crusade now being so ably conducted by Mr. Bok, namely, that of uniform legislation in the various states, was specifically indorsed. Attention was informally called at that conference, however, to the well-known fact that the active participation of the medical profession would be misconstrued and that efforts would be made by the opponents of the reform measure to show that the physicians were actuated by sinister motives. An example was the editorial which the *Cincinnati Enquirer* recently directed against the bill introduced in the Ohio Legislature. In reply to this editorial the following letter was sent:

CINCINNATI, Feb. 1, 1906.

To the Editor of the *Enquirer*.—Your editorial this morning under the caption, "And Why Not?" in opposition to the pending bill to compel the publication of formulae of "patent" and "proprietary" medicines contains two references which call for reply, viz.:

1. You say that "if the owners of these medicines are to be required to disclose to the world the secret of their compound, why not the doctors who write prescriptions in the Latin text? . . . Obviously, to compel one class to give up the secrets of their formulae and protect another in not giving them up is not what President Roosevelt calls the 'square deal'."

In reply it is to be remembered that the prescription of the physician is to-day, under the law, the property of the man who pays for it—in other words, the patient—who is entitled either to retain the original, to make a copy of it himself or to secure a copy from the chemist who compounds it. Prescriptions are, furthermore, kept on file by the dispensing chemist, where they are accessible to all properly interested persons. The trifling circumstance that, for the sake of accuracy and brevity, some, but by no means all, prescriptions are written in Latin does not deprive their owner of a knowledge of their ingredients, for if he can not read Latin himself he can easily find some one who can. It follows, therefore, that now under the law physicians do comply with all the essentials of publicity. In view of this fact it becomes obvious that "to compel one class to give up the secrets of their formulae and protect another in not giving them up is not what President Roosevelt calls the 'square deal.'"

2. You say, in the next place, that "it would appear as if the authors might not have the public welfare so much at heart as some sinister motive not obviously associated with the health of the people."

Your inference, not expressed, but still an inference, contained in this quotation to the effect that physicians are authors of the bill now pending at Columbus is not justified by the facts. This movement comes from the people as distinguished from the medical profession and from very reputable representatives of the lay press as distinguished from both the medical press and that portion of the lay press which sells its space for the exploitation of fraudulent drugs. As a matter of fact, the incomes of physicians are increased rather than diminished by the unrestrained consumption of these spurious "remedies" by the public. This circumstance was recently, on a very conspicuous occasion,

hurled reproachfully at the medical profession from lay sources as an explanation of the aloofness of that profession from the present agitation. But to publish the alleged formulae of many of these so-called remedies would lead to the exposure of their fraudulent pretensions. This, in turn, would drive them not only from the market but particularly from the advertising columns of certain newspapers. All of which prompts the observation that in opposing the proposed legislation these same newspapers "might not have the public welfare so much at heart as some sinister motive not directly associated with the health of the people."

Trusting that you will publish this communication in the interest of "what President Roosevelt calls the 'square deal,'" I am,

Very sincerely,
CHARLES A. L. REED,
Chairman of the Legislative Committee of the American Medical Association.

Of course, this communication was not published by the *Enquirer*, notwithstanding its assumed devotion to the "square deal."

Death from Overdose of "Patent Medicine."

A correspondent in British Columbia sends us particulars of the following case:

A male infant two weeks old died after having been given three drops of a preparation containing opium. The child was apparently suffering from colic and his mother gave him "a few drops (three)" of Chamberlain's Colic, Cholera and Diarrhea Remedy. The mother said that the child had seemed to be in a stupor most of the day. At the inquest the child's father testified that the remedy was given about midnight Saturday night, or early Sunday morning. The child died at 11 p. m. Sunday. On the label of the bottle it is stated that the dose for an adult is one teaspoonful and for an infant from two to fifteen drops. Dr. Fraser, the physician in attendance, testified that fifteen drops would be absolutely fatal to an infant. The coroner, Dr. E. C. Hart, addressing the jury, said:

There can be no doubt but that death resulted from misadventure or accident. The jury must find a verdict on the evidence, but may also comment on the evidence or make any rider it thinks fit to its verdict. Of course, there is much sympathy to be felt for the parents. This medicine, like other patent nostrums, is sold in drug stores to anyone and everyone, without a prescription. The bottle produced contained eight grains of opium. Without treatment the taking of that amount would be fatal to a man under ordinary circumstances. Eight grains of opium could not be sold by a druggist; it is against the law for a druggist to do so. The patent medicine bottle, however, says nothing about what the nostrum contains. The dose for an adult is given as 1 teaspoonful, and for infants from 2 to 15 drops, which would be one-fourth grain of opium and positively fatal to an infant. Two drops might not be fatal, but all we know that this infant received was three drops. Many infants have been poisoned by so small an amount of opium as that in two drops of the medicine. It is what is known as a patent medicine, and we do not know what other things it contains. Opium varies in effect. In making opium preparations the chemist analyzes the opium, and if he has a poor specimen of the drug a larger amount is used, and vice versa.

Snack medicines are made in an uncertain and irregular style, and it is quite possible the bottle of medicine Mr. Duncan had contained more opium than was stated on the label. On the other hand, it may be that the medicine is also standardized so that each bottle holds the same. At any rate, as far as this case is concerned it seems to have been fatal to the child. It is an anomaly of our laws that a mixture of this kind, which is positively dangerous, may be dispensed while the law is so strict about poisons. This is stated in explanation. You are only required to bring in a verdict in accordance with the evidence submitted as to the cause of death, but you have the privilege to add any rider that you may see fit to do.

The coroner's jury brought in a verdict that the child died from the effects of opium contained in Chamberlain's Colic, Cholera and Diarrhea Remedy, given to the child without knowledge of the fact that the medicine contained opium, and that death resulted by misadventure.

A Warning from Fougere & Co.

The following letter has been received:

W. J. MORRISON, JR., COUNSELOR AT LAW,
43 BROAD STREET, NEW YORK, JAN. 22, 1906.

George H. Simmons, M.D., Council on Chemistry and Pharmacy, American Medical Association, Chicago, Ill.

Dear Sir: Messrs. E. Fougere & Co., of 90 Beekman street, New York City, as agents for several preparations intended solely for the use of the medical profession, and to which certain registered trademark

names have been given, inform me that in the literature relating to these preparations they have given the full qualitative formulæ, and in many cases the full quantitative formulæ and even the *modus operandi* of manufacture.

They have also informed me that your Association proposes to make analyses of these preparations, which, together with certain comment and criticism, are to be published by the said Association.

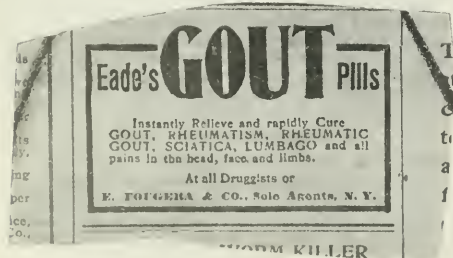
My clients request me to state that they do not desire the publication in the proposed pharmacopeia of "New and Non-Official Remedies" of any formulæ to which are added synonymous terms, stated to be identical with the preparations sold under the trade-mark names of the firms they represent as agents; and as counsel for the above firm I wish to warn you against the publication by the American Medical Association or the Council on Chemistry and Pharmacy of any false or inaccurate statements relating to the articles for which Messrs. E. Fougere & Co. are the selling agents. Yours truly, W. J. MORRISON, JR.

It is a pleasure to give publicity to the above letter, that our readers may know the attitude taken by E. Fougere & Co. toward the work of the American Medical Association through its Council on Pharmacy and Chemistry. Since a number of the products for which this firm is the selling agent are already advertised directly to the laity, this action is not to be wondered at. We wish to state again that the annual to be known as "New and Non-Official Remedies" is presumed to contain, as nearly as possible, only those preparations intended solely for physicians' use. E. Fougere & Co., therefore, need have no fear regarding the listing of their preparations.



Santal Midy is one of the preparations which Fougere & Co. are advertising to the public. This advertisement is reproduced (without permission) from the *Chicago American* of Sunday, Feb. 11, 1906.

Gonorrhea cured in two days! And this is an "ethical proprietary" advertised in reputable medical journals!!!



This advertisement, taken from the *Chicago Record-Herald*, Feb. 14, 1906, shows another one; there are others, but we have no more space to spare at this time.

The Physician and the Pharmacopeia.

NEW YORK, Feb. 11, 1906.

To the Editor:—You are certainly aware that I had something to do with the present warfare against nostrums. But wholesale indiscriminate denunciation I condemned from the very beginning, and especially have I no sympathy with those who, out of sheer ignorance, try to make a Bible, a fetish, out of our Pharmacopeia and want to make it an unpardonable sin to prescribe or to use anything extrapharmacopoeial. How absurd this tendency is will be seen from a little illustration in a day's practice of my own. I trust it will be admitted that I know as much about drugs as the average physician and know fairly well what is best for my patient. Well, on looking over today's work I find that I washed out a man's bladder with oxymercure; I administered two injections of salicylate of mercury; I prescribed pills of tannate of mercury; I used and prescribed injections of protargol and argyrol; I used eucaïn as a local anesthetic, and I used several times a proprietary lubricant for the sounds. Here I have used seven different substances, not one of which is official in the Pharmacopeia. Of the seven products, the first three were non-proprietary and the other four proprietary. Would anybody have the hardihood to tell me that I should not have used those substances, or that my patients could have gotten along with other agents official in the Pharmacopeia and just as good? No. In the name of commonsense, let us not become hysterical. The Pharmacopeia is a good book, it is a book of standards, but in the very nature of things it can not be a perfect book. It is generally ten years behind the times, and when it does appear it is hedged about with so many restrictions about the admissibility of some of the most valuable of our preparations that the Pharmacopeia can only be an authority as to the preparations which are in it, but it can be no guide as to the usefulness or worthlessness of the preparations which are not found in its pages.

WILLIAM J. ROBINSON, M.D.

ANSWER.—We do not believe that any one suggests that we should be limited to Pharmacopoeial preparations or that the Pharmacopeia contains all that is good. The Pharmacopeia does not include articles that are proprietary in character, consequently the patented products are not found in it, at least not until the patent has expired or is about to expire. There are excellent preparations of this class on the market that will undoubtedly appear in future issues of the Pharmacopeia. Would it not be absurd to say that these preparations must not be used until they are in the Pharmacopeia? There are also excellent non-patented pharmaceutical preparations that are a credit to American pharmacy, and yet they are proprietary in character and, therefore, not in the Pharmacopeia. We certainly see no objections to their use. If all proprietary articles are to be condemned, what is the use of the Council on Pharmacy and Chemistry? Are its functions not to examine into proprietary articles and publish a list of those which come up to the standard? Our correspondent, like too many others, has set up a straw man to knock down. We acknowledge that some are using the word "proprietary" in a loose way, but we doubt if any one would suggest debarring all proprietaries. It is the frauds and the fraudulent methods of promotion that are to be condemned.

The Physician Secures the Contempt of the Thoughtful Pharmacist.

Jacob Diner, according to the *Pharmaceutical Era*, has been carrying on a vigorous campaign in New York in favor of the preparations of the Pharmacopeia and the National Formulary, and, before the meeting of the New York County Medical Pharmaceutical League, he recently made some very strong statements concerning the evils that are caused by physician's prescribing proprietary preparations instead of writing prescriptions to fit individual cases. He traces the history of the origin of this flood of proprietary preparations from the time when physicians prepared their own drugs down to the era of elegant pharmaceutical manufacture by well-established houses. He says further:

"But the human mind was ever so constituted that it could not view success without envy. The success gained by some of the manufacturing chemists by reason of original discoveries immediately brought on such a flood of so-called proprietary preparations that pharmacy sank from the position of band-aid of medicine to that of servant girl of the manufacturer. No professional pharmacist objects to dispensing preparations which are the outcome of discovery or original research. But when he is called on to dispense any of the numberless St. Louis chemicals, when a physician wants him to act as his private dividend developer by dispensing the original discoveries of concerns in which he is interested, then the professional pride of the pharmacist rises up and revolts. In the eyes of the professional pharmacist, the physician prescribing any of these preparations is either an ignoramus or a charlatan, or both, mostly both."

The above language is vigorous. It is worth while to know the frank opinion of the pharmacist; as we have said before, it will be of benefit to us. But Mr. Diner has more to say which it is well worth our while to quote in full:

"With chemicals, even of those protected by patent, which are really scientific discoveries, he can easily assume responsibility. Chemical tests are at his command. But what can he do with preparations which never had a chemical test and never could have a chemical test, because they are mechanical mixtures, and because the manufacturers can and do change their composition at will. The M.D. who prescribes these preparations is on a par with the customer who buys Lydia Pinkham's, or Father John's, with this difference, that the layman who takes the statements of the manufacturer for truth pays for it himself, while the doctor makes the patient pay for it and often gets a little rakeoff from the manufacturer in the shape of discount."

"Let us now view the effect which the prescribing of such remedies has on the three classes most affected."

"First comes the physician. After the detail man or the manufacturer's ad. has insulted the M.D.'s intelligence by telling him what to prescribe, the manufacturer proceeds to separate the doctor from his patients in a most ingenious manner. He tells the M.D. that to insure the genuineness of the preparation he must write for an original bottle. Right here he undermines his friend, the M.D., for before very long the article has been so well introduced by the aid of the guileless M.D. that the people buy it over the counter without paying the M.D. his fee for recommending it. This is the financial phase for the M.D."

"There is also another phase. When the M.D. has become accustomed to let the detail man think for him, he has given up medicine thinking altogether. His first impulse after diagnosing a case is to call for some proprietary remedy irrespective of what its actual constituents may be, without regard to idiosyncrasies in the patient and without the possibility of knowing what secondary effects that particular dope may produce. Often he is puzzled by what he supposes to be newly developed symptoms, which are nothing less than after-effects from some of the constituents of the (to him) unknown remedy. The effect on the patient is a matter not to be lightly passed over. We pharmacists often have occasion to judge it."

"I will relate an incident which happened not long ago in my store. A lady brought in a prescription asking for a proprietary tablet whose chemical test consists of the monogram on top. After receiving the medicine she opened the box, and on discovering that the tablets were old friends of hers which she had been buying in 25-cent boxes over the counter, she said some very uncomplimentary things about the M.D., and wound up by declaring that hereafter she would consult a doctor who wrote 'real medicine.' The evil of self-medication is largely due and directly attributed to the prescribing of proprietary preparations by the M.D."

"To compel the druggist to dispense preparations of this ilk is to rob him financially and to insult him professionally. He is compelled to stock up on forty to fifty acetalind preparations, the numberless bromid mixtures, the legion of dope cure-alls, simply because the physician is too indolent or too ignorant to compose his own prescriptions."

Mr. Diner certainly makes some very pointed criticisms, but we are compelled to admit that there is a basis of truth for them.

Letters of Appreciation.

Dr. J. B. Carrell, Ithaca, Pa., writes:

"I have read with much pleasure and profit your department of Pharmacology, and especially the work done by the Council on Pharmacy and Chemistry in

exposing the untruthful methods of patent-medicine manufacturers and vendors. I earnestly hope you will keep everlastingly at it; for these gormandizers are barely satiated with the blood of the innocent babe and helpless old age. Readers of these exposures have had their eyes opened as never before, and the work done by the lay and medical publications deserves the highest praise."

Dr. F. S. Spearman, Whiting, Iowa, writes:

"I have derived considerable benefit from the articles by the Council on Pharmacy and Chemistry. It is doing good work for the profession in showing us just what some of these proprietaries are. A case recently occurred in one of my families in which a woman manifested alarming symptoms of collapse after taking the ordinary dose of bromo-seltzer. I was enabled to show her what the cause was, and now bromo-seltzer is tabooed in that family."

Dr. Max Goldman, Kansas City, Mo., writes:

"No one can justly deny the evil consequences of the modern indiscriminate use of patent medicines. The evil exists, however, and a strong reason, in my judgment, is the fact that in the advertisement as well as in the sale of this rubbish there is an enormous profit. We have then to contend not only with the proprietors of the advertising media, but also with the manufacturers and owners of the quack medicines. The medical profession, being of no pecuniary benefit to the public press in most localities, makes its earnest protest to deaf ears when it attempts to convince the newspaper owners of the pernicious influence of such advertisements. Nevertheless, there is every reason to feel that the American people, so ready to learn if proper suggestions are offered them, have already decided against the use of patent medicines; if so, the task of wholly prohibiting their manufacture, sale and advertisement will be much more easily accomplished."

"As regards the part the American medical profession should play in this and similar crusades, it seems to me most natural that the county society should be ever ready to stand as an individual on questions of such vast proportions."

Dr. John Fassett Edwards, Manila, P. I., writes:

"Accept my sincere thanks for the arrangement of the matter, and likewise my very hearty New Year's greetings, with particular reference to your most excellent work with regard to the 'patent-medicine' evil—it's several steps in the right direction."

Dr. O. P. Voigt, Gillett, Wis., writes:

"Keep on with the good work and the medical profession will be something anyway by the time we get through."

Dr. George W. Rall, Pittsburg, Pa., writes:

"This is just a word of appreciation; first, for the numerous changes in binding (separate cover, index on and inside cover; number, date and page on edge of cover—all of which makes THE JOURNALS unbound still useful for reference); second, for the thorough, careful, persistent and well-thought-out campaign against improper proprietaries of all kinds."

Dr. H. F. Curtis, Fiskdale, Mass., writes:

"I am glad to see the good work you are doing."

Another Newspaper Speaks Out.

In announcing the defeat in the Mississippi legislature of the Lockwood bill, which provided that all proprietary medicines which contain over 5 per cent. of alcohol or a poison should so state on the label, the *Reverie* of Natchez, Miss., says:

"The death of this meritorious measure was brought about by the 'patent medicine' houses, which, in addition to their untiring efforts with the legislature, whipped the mercenary newspapers into line by threats."

The *Reverie* received a number of these letters, all of which, with the exception of one, demanded that the influence of the paper be used to defeat the bill. One telegram ordered that we telegraph the representatives from this county to use their influence to defeat the measure. This paper never expects to sink so low that, for the sake of a small money consideration, it will oppose a measure which is calculated to result in lasting good to the people of the state; and, instead of trying to prevent the passage of such a bill when it is again brought up, we mean to do all in our power to aid its passage.

Correspondence

Medical Forgeries.

KINGSTON, ONT., Feb. 10, 1906.

To the Editor:—In THE JOURNAL, February 3, there is an article on "Medical Forgeries," by Dr. Van Meter, in which the senate of Queen's University is criticised for not immediately cancelling the degree granted in 1904 to Hagen Burger. In this university, however, the rights of graduates are very carefully safeguarded, and so serious a procedure can not be undertaken except on evidence which will hold in any court of law.

In an earlier portion of his article Dr. Van Meter writes: "The Colorado medical statute has no provision for the revocation of a license except on the ground of the conviction of the licensee of conduct of a criminal nature." So it is evident that his own state board, as well as those of Massachusetts and Montana, do not find it so simple a matter to revoke even a license to practice.

The fact is that if the state board of Colorado had done its duty and convicted Hagen Burger of the criminal charge of offering false and forged evidence it would be possible on the presentation of the court record for the senate of Queen's University to cancel the degree. The senate has urged on the state board of Colorado the propriety of going on with the trial as the most direct way to bring the matter to a conclusion. Dr. Van Meter makes lame apologies for this not being done, but at the same time demands that the university convict Hagen Burger or—he will place certain disabilities on all our graduates who go to Colorado. We rely on the good sense of the profession in the State of Colorado to see that nothing so unjust is done. If necessary the matter will be laid before the Department of State.

It is true that the senate has the matter under consideration. Hagen Burger was summoned and appeared before the senate on December 20, 1905. After a lengthy trial the evidence was considered insufficient to convict and a postponement was advised by our solicitor to secure further information. It may take some time to secure this. Two members of the senate will be in Germany in a few months, and they have been asked to secure the evidence desired. The death of Dr. Herald, who was secretary of the faculty at the time Hagen Burger was here, has added to our difficulty.

Our graduates and friends may depend on everything being done to protect the dignity and honor of their alma mater, and they must be gratified to learn that none of the rights and privileges of any graduate can be lightly revoked.

For their information I desire only to add that Hagen Burger was introduced to the faculty by a physician known to be an honorable man. His name appeared in Polk's register as qualified in Montana and as a graduate of Kiel University. He attended lectures in the session of 1902-3 and failed to pass at the end of that session. He then went to Boston and engaged in practice and was known to be studying there. One year and five months later he returned and then passed the supplementary examinations and was granted his degree.

J. C. CONNELL,

Dean Medical Faculty, Queen's University.

Quinin in Cholera.

COLUMBUS, OHIO, Feb. 5, 1906.

To the Editor:—I see in THE JOURNAL, February 3, what I have looked for a generation—some acknowledgment of the truth that quinin sulphate is a specific for Asiatic cholera. In brief, Dr. Ussher, a medical missionary at Van, Asiatic Turkey, found himself, about a year since, in the midst of an outbreak of cholera, so severe that in the first week of its prevalence all that were seized with the disease died—100 per cent. mortality. On Saturday night at midnight he began to treat the disease according to my directions (10 gr. quinin every hour until discharges were controlled), with the result that the mortality fell to less than 10 per cent. Some of your readers may recall that in my article in the *New York Medical Journal*, Aug. 18, 1904, I set the necessary mortality from the disease at somewhere between 5 and 15 per cent., when the remedy is given by the mouth (the only way it

should be given), and, preferably, in acid solution or a powder stirred up in a tablespoonful of water, as I gave it during the epidemic in this city in 1873.

The scientific part of Dr. Ussher's statement is somewhat obscure. So far as I know, Professor Koch had only demonstrated that in strength of 1/5000 the growth of the spirilla was inhibited. Dr. J. C. Graham, at that time bacteriologist of Starling Medical College (now of Denver), at my request undertook further experimentation, by which he demonstrated that in strength of 1/2500 the germ was killed in cultures in a few minutes.

For thirty years I have been drilling into the largest average medical classes in Ohio (save those of one school) that Asiatic cholera is a very curable disease when this remedy in sufficient doses is given by the mouth; that the treatment has been discovered over and over again; that quinin is useless given by the hypodermic and intravenous injection methods, as it escapes by the kidneys, never gaining access to the intestinal canal in any sufficient amount. When your last issue arrived I had an article in course of preparation, but I shall probably now await the news from Turkey in Asia. I have written to Dr. Ussher for fuller particulars about the outbreak.

To avoid misunderstanding now or in the future, I wish to state that until after I had used the remedy in 1873 I had never heard of the quinin treatment.

ERSKINE B. FULLERTON, M.D.

Trip to Europe after the Boston Session.

WORTHINGTON, MINN., Feb. 8, 1906.

To the Editor:—No doubt there will be a number of the physicians attending the annual session of the American Medical Association at Boston, June 5-8, who will sail for Europe at the close of the session. A small party has already been formed to sail immediately after the session, and we would be glad to hear from others who are contemplating a trip, either for postgraduate work or for pleasure. The postgraduate courses in Berlin will be unusually good this year.

HENRY WIEDOW, M.D.

Association News

A Great Professional Federation.

Under the above caption the *Boston Transcript* has an editorial, January 31, on the American Medical Association and on the Boston session that is worth reporting in full. It follows:

The session of the American Medical Association, which will be held in Boston on the 6th, 7th and 8th of June next, is a matter of unusual interest not only to the physicians of the country, but to the whole community. It is forty-one years since the last Boston session of this famous organization, and the growth of the Association since 1865 has been notable. Probably no organization of professional men means so much to the community at large. The American Medical Association was founded in 1847, with the declared object of improving the standard of medical education, and by that means of raising the status of the profession, and benefiting the country. While this purpose has been kept constantly in mind, the Association has exerted itself in many other fields. It has effected important reforms in public hygiene; it has impressed on legislators the value of laws relating to the betterment of the condition of the laboring classes in tenements and factories; it has preached the wisdom of a proper medical supervision of immigration; it has urged the supreme importance of healthful surroundings and care for growing children; it has pointed out the dangers and the methods of combating contagious diseases, and in manifold ways it has added materially to the alleviation of sickness, the lowering of the death rate, the suppression of quackery and the prolonging of human life. The means to forward these useful purposes form an interesting chapter in themselves, which we purpose to comment on from time to time.

The actual membership in the Association at present is about 20,000, but this figure by no means represents all the physicians who are brought under the influence of the organ-

ization. The Association was reorganized on a broad basis in 1902, and the second article of its constitution states that "The object of this Association shall be to federate into one compact organization the medical profession of the United States, for the purpose of fostering the growth and diffusion of medical knowledge, of promoting friendly intercourse among American physicians, of safeguarding the material interests of the medical profession, of elevating the standard of medical education, of securing the enactment and enforcement of medical laws, of enlightening and directing public opinion in regard to the broad problems of state medicine, and of representing to the world the practical accomplishments of scientific medicine." The federating of the medical profession is in large part accomplished. This has been done by securing the active co-operation of the various state medical societies so as to form an organic whole. These state societies bear to the American Association a relation somewhat similar to that borne by the state legislatures to the United States Senate. The federated state societies send delegates, who constitute the House of Delegates of the American Association. At the same time there are many members of the state societies not members of the American Medical Association, so it is obvious that the House of Delegates represents many more persons than are members of the American Medical Association. The total number of American physicians thus actually represented by the governing body of the Association is roughly estimated at 46,000.

It is expected that the coming session of the Association will be the largest ever held. Fourteen or fifteen thousand persons will attend, and the physicians of Boston, with the co-operation of their New England brethren, are planning an elaborate entertainment suitable to the importance of the occasion, the dignity of the situation and the scientific and hospitable reputation of the city. When we look back on Boston's achievements in scientific medicine, and remember the work of New England physicians in the past—that here inoculation for smallpox was independently produced in 1721, that Boston furnished the first physician general in the Revolutionary armies, that in 1818 the office of surgeon general in the United States Army was created for a Boston surgeon, that the vaccination for smallpox for the first time in this country was undertaken here in 1801, that surgical anesthesia was discovered here in 1846; and when we regard the recent work in diphtheria, smallpox, scarlet fever, and in general and orthopedic surgery; the leading position always held by Harvard in medical education, the splendid traditions of our great hospitals, and the famous medical names among us, Boylston, Warren, Waterhouse, Jackson, Holmes, Bigelow, Bowditch, Howe, Homans and many more—when we recall these facts we are justified in a proper pride, and a confidence that the profession and the community will not be found lacking at this time. We may be sure that Boston physicians will respond in a way to produce a scientific entertainment of the highest merit, and we have no doubt that our public-spirited citizens generally, when called on, will co-operate in their usual generous fashion with social and financial aid.

Though the meeting is scheduled to last four days only, great numbers of our visitors doubtless will spend many weeks in this vicinity. The work of our great public institutions will attract hundreds of thoughtful persons from this country and from Europe, and the charms of New England as a summer resort will induce many to tarry with us beyond the allotted time. We feel confident that this meeting will add to the prestige of Boston as the great educational, philanthropic and scientific center of the country.

Senn Medal Essay Contest.

The Committee on the Senn Medal announces that a gold medal of suitable design is to be conferred on the member of the American Medical Association who shall present the best essay on some surgical subject. The award will be made under the following conditions: (a) The name of the author of each competing essay must be enclosed in a sealed envelope bearing a suitable motto or device, the essay itself bearing the same motto or device. The title of the successful essay and the motto or device is to be read at the session at which the award is made, and the name of the successful

author announced. (b) All successful essays become the property of the Association. (c) The medal shall be conferred and honorable mention made of the two other essays considered worthy of this distinction at a general meeting of the Association. (d) The competition is to be confined to those who, at the time of entering the competition, as well as at the time of conferring the medal, shall be members of the American Medical Association. (e) The competition for the medal will be closed on, and no essays received after, April 1, 1906. Communications may be addressed to any member of the committee, which consists of the following: A. F. Jonas, chairman, 18 Continental Block, Omaha; J. F. Binnie, 12th and Wyandotte Streets, Kansas City, Mo.; Harry M. Sherman, 1303 Van Ness Ave., San Francisco, until April 15, 1906.

Marriages

JAMES J. McGUINN, M.D., to Miss Helen Mabel Carroll, both of Chicago, February 14.

ADOLPH F. MORGENSEN, M.D., to Miss Alma Doepke, both of Cincinnati, January 31.

J. CHRISTY CONDT, M.D., Windsor, Cal., to Miss Bertha Alma of Mentone, Cal., January 27.

THOMAS L. WILSON, M.D., to Miss Allie M. Carroll, both of Piedmont, W. Va., January 17.

JOHN LEONARD WRIGHT, M.D., to Miss Myrtle Davidson, both of Elbridge, Tenn., February 4.

JAMES WILBERT CANADY, M.D., to Miss Jeanette Bay Ferris, both of Indianapolis, January 30.

LOYD RUSSELL MACE, M.D., Philadelphia, to Miss Agnes Biller of Trenton, N. J., February 15.

HENRY W. KRIEGE, M.D., St. Louis, to Miss Rose Dorothy Bolm of Warrenton, Mo., February 1.

FRANK S. BISSELL, M.D., Maple Lake, Minn., to Miss Blanche Stanford of Minneapolis, Minn., February 7.

CLARENCE J. SLOCUM, M.D., Pleasantville, N. Y., to Miss Elvira Gwendolyn Evans of Tottenville, L. I., January 17.

GEORGE JUSTICE EWING, M.D., Fort Washington, Pa., to Miss Mary E. Cross of Fitchburg, Mass., at Trudeau, N. Y., January 18.

Deaths

Elisha Hall Gregory, M.D., of St. Louis, president of the American Medical Association in 1886, died at Ormond, Fla., February 11, from heart disease, aged 81. Dr. Gregory was born near Russellville, Ky., Sept. 10, 1824. He received his early education in the common schools of Hopkinsville, Ky., and Boonesville, Mo., then studied medicine with Dr. F. W. G. Thomas and entered the medical department of St. Louis University, from which he graduated in 1849. In 1851 he became connected with his alma mater as demonstrator of anatomy. In 1852 he was made professor of anatomy and held this position until 1867, when he was elected professor of surgery. When the Missouri Medical College and St. Louis Medical College were merged and became the medical department of Washington University, Dr. Gregory had a large share in bringing about the consolidation. Early in his practice he became connected with the Mullanphy Hospital, St. Louis, and for many years was its surgeon-in-chief. He was a member of the St. Louis Medical Society and in 1863 its president, and was also at one time president of the St. Louis Surgical Society. Three weeks



ELISHA HALL GREGORY, M.D.

before his death Dr. Gregory went to the South on account of his health, and died there after a short illness.

De Saussure Ford, M.D. Medical College of Georgia, Augusta, 1856; the nestor of the medical profession of Augusta, surgeon on the staff of General Humphrey Marshall and later in charge of the Third Georgia Hospital, Richmond, during the Civil War; professor of anatomy in his alma mater for seventeen years and then professor of surgery; three times dean of the faculty of the college and occupying that position at the time of his death; one of the founders of the Augusta City Hospital and repeatedly chairman of the governing board; president of the State Medical Association and chief surgeon of the Georgia Railroad; identified in a marked degree with many educational, charitable and municipal institutions of Augusta, died at his home in Augusta, February 5, after an illness of ten days, aged 71. At a special meeting of the faculty of the Medical College of Georgia resolutions of respect and regret were unanimously adopted.

Samuel R. Wooster, M.D. Medical Institution of Yale College, New Haven, Conn., 1857, of Grand Rapids; assistant surgeon of the Eighth Michigan Volunteer Infantry, and later surgeon of the First Michigan Volunteer Cavalry during the Civil War; county physician for Kent County from 1872 to 1889; health officer and city physician of Grand Rapids in 1880; at one time coroner of Kent County; a member of the Michigan State Medical Society, and a charter member and twice president of the Grand Rapids Academy of Medicine, died at Butterworth Hospital, Grand Rapids, February 5, after an operation for a chronic ailment, aged 75.

Adolph Gustave Brown, M.D. Jefferson Medical College, Philadelphia, 1896; a member of the American Medical Association, the Medical Society of the State of New Jersey, Monmouth County Medical Society, and Practitioners' Society of Eastern Monmouth; eye and ear surgeon of the Monmouth Memorial Hospital, Long Branch; town commissioner of Redbank, N. J., from 1903 to 1905; designer and inventor of the Redbank sewage disposal plant, died at his home in Redbank, January 21, from cerebral hemorrhage, after an illness of a year and one-half, aged 45.

Richard Albert Terhune, M.D. College of Physicians and Surgeons in the City of New York, 1850; one of the oldest physicians of Passaic, N. J.; first president of the village of Passaic and twice thereafter holding that position; first city physician of Passaic and first president of the board of health; one of the organizers of the Passaic Medical Society and an incorporator of the Passaic General Hospital Association; secretary of Passaic County Medical Society, 1852-1854, died at his home in that city, February 5, from intestinal cancer, after a long illness, aged 77.

John Winsor, M.D. Berkshire Medical College, Pittsfield, Mass., 1865; one of the oldest practitioners in the Pawtucket Valley; a member of the American Medical Association; for several years a member of the General Assembly; a surgeon during the Civil War; health officer of Coventry and medical examiner of the first district of Kent County, died at his home in Quindick, Anthony, R. I., February 1, after an illness of nearly a year, from pulmonary tuberculosis, aged 62.

William Edward Swan, M.D. College of Physicians and Surgeons in the City of New York, 1890; a member of the American Medical Association, New York State Medical Association, Medical Society of the County of New York, Medical Association of the Greater City of New York, and fellow of the New York Academy of Medicine, died at his home in New York City, February 3, aged 39.

Robert H. Rice, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1863; a member of the American Medical Association, president of the Sandusky County Medical Society and vice-president of the Northwestern Ohio Medical Society, the pioneer practitioner of Sandusky County, died at his home in Fremont, Ohio, February 4, aged 68.

John W. Baker, M.D. Medical College of Ohio, Cincinnati, 1883; a member of the American Medical Association, Illinois State Medical Society, Clark County Medical Society, and the Esculapian Society of the Wabash Valley, died at his home in West York, Ill., January 29, from cerebral hemorrhage, after a short illness, aged 54.

Daniel W. White, M.D. Louisville Medical College, 1878; a member of the American Medical Association, Medical Society of the State of California and San Bernardino County Medical Society, died at his home in Base Line, San Bernardino, Cal., January 23, after an illness of several years, from tuberculosis, aged 51.

James Widner, M.D. Medical Department of the University of Iowa at Keokuk, 1864; a surgeon in the Federal service during the Civil War; for twelve years county clerk of Adams County, Iowa, died at his home in Corning, Iowa, January 26, from senile debility, aged 80.

George Archie Stockwell, M.D. Albany (N. Y.) Medical College, 1866; formerly editor of the *Medical Age* and the *Detroit Medical Journal*, and later editor of *Forest and Stream*, died at Houston, Texas, January 28, from cerebral hemorrhage, after a short illness, aged 59.

William M. Hand, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1888, died at his home in Woodstock, New Brunswick, February 10, from streptococcus infection contracted while operating on a patient for puerperal sepsis, aged 42.

De Haven Sharp, M.D. University of Georgetown Medical Department, Washington, D. C., 1904, a member of the medical staff of the Washington Asylum Hospital, died from septicemia at that institution, February 3, after an illness of one month, aged 27.

Lorenzo S. Bartholomew, M.D. University of Buffalo (N. Y.) Medical Department, 1884, of Reading Centre, N. Y., died at the Buffalo Hospital, January 31, from disease of the spine, for which an operation was performed a few days before, aged 49.

Isaac Warren Sawin, M.D. Cleveland University of Medicine and Surgery, 1857, assistant surgeon in the Rhode Island militia during the Civil War, died at his home in Providence, R. I., February 1, after an illness of three weeks, aged 82.

George A. Gordon, M.D. Homeopathic Hospital College, Cleveland, 1870, of Chillicothe, Mo., died at the Women's and Children's Hospital, Kansas City, Mo., January 31, a few hours after an operation for a tumor of the abdomen.

William McKinsey, M.D. Curtis Physio-Medical Institute, Marion, Ind., 1889, a veteran of the Civil War, died at his home in Marion, Ind., January 28, from cerebral hemorrhage, after an illness of two weeks, aged 63.

James B. Littlewood, M.D. University of Georgetown Medical Department, Washington, D. C., 1868, chief of the division of chemistry in the Patent Office, died at his home in Washington, February 7, from heart disease.

Howard Halsey Young, M.D. Bellevue Hospital Medical College, New York City, 1884, died at his home in Riverhead, N. Y., January 17, after an illness of about three weeks, from nervous exhaustion, aged 44.

Joseph G. Grosscup, M.D. Hahnemann Medical College, Philadelphia, 1873, of Reading, Pa., died from cerebral hemorrhage, January 31, in St. Joseph's Hospital, Reading, after an illness of eight years, aged 58.

Reuben F. Parkhill, M.D. Albany (N. Y.) Medical College, 1870, one of the coroners of Steuben County, N. Y., died at his home in Howard, N. Y., January 26, from heart disease, after a long illness, aged 73.

John H. W. Mask, M.D. Leonard Medical School, Raleigh, N. C., 1898, a highly respected colored physician of Wilmington, N. C., died at his home in that city, February 4, after a long illness, aged 32.

Francis A. Payan, M.D. Dartmouth Medical School, Hanover, N. H., 1884, died at his home in Woonsocket, Providence, R. I., January 30, from influenza, after an illness of two weeks, aged 52.

James G. Robison, M.D. Bellevue Hospital Medical College, New York City, 1884, died at his home in Rogers, Ark., from bronchial pneumonia, January 25, after an illness of three weeks, aged 46.

Edwin F. Yohn, M.D. University of Louisville Medical Department, 1895, died at his home in Valparaiso, Ind., from septicemia contracted from a patient, after an illness of three days, aged 42.

John P. Devereux, M.D. Department of Medicine of the University of Pennsylvania, 1896, of Philadelphia, died in the Polyclinic Hospital in that city from tuberculosis, February 9, aged 35.

Isaac Jackson, M.D. Jefferson Medical College, Philadelphia, 1847, for more than sixty years a practitioner of Brownsville, Pa., died at the home of his daughter in Pittsburgh, February 6.

Charles H. Pierson, M.D. Pennsylvania Medical University, Philadelphia, 1876, died at his home in Avon, Ill., January 25, from pneumonia, after a short illness, aged more than 80.

Fred H. Hunter, M.D. Philadelphia College of Medicine and Surgery, 1869, died at his home in Emmetsburg, Iowa, January 24, from heart disease, after a short illness, aged 57.

Francis Hamilton Hill, M.D. Medical Department of Columbian University, Washington, D. C., 1849, died at his home in Washington, January 30, after an illness of three weeks, aged 80.

Joel K. Van Kirk, M.D. Jefferson Medical College, Philadelphia, 1854, of Elizabeth, Pa., formerly a school director of that place, died at his winter home in Eustis, Fla., February 3, aged 80.

George A. Tower, M.D. Boston University School of Medicine, 1877, of Watertown, Mass., died suddenly in Cambridge, Mass., from cerebral hemorrhage, February 3, aged 60.

W. H. Miller, M.D. College of Physicians and Surgeons, Chicago, 1893, died at his home in Chadwick, Ill., January 31, from pneumonia, after an illness of one week, aged 45.

Isaac S. Meeks, M.D. Medical College of Ohio, Cincinnati, 1850, one of the oldest residents of Troy, Ohio, died at his home in that city, January 31, from senile debility.

Caroline A. Risdon, M.D. Hahnemann Medical College and Hospital, Chicago, 1884, died at the home of her daughter in Oakland, Cal., February 1, from pneumonia, aged 68.

Benjamin A. Allison, M.D. Jefferson Medical College, Philadelphia, 1844, died at his home in Decatur, Ill., from paralysis, February 6, after an illness of four months, aged 89.

John H. Fulbright, M.D. Louisville (Ky.) Medical College, 1880, of Springfield, Mo., died in Los Angeles, Cal., from tuberculosis, after an illness of several months, aged 48.

Edward C. Jungbluth, M.D. Omaha (Neb.) Medical College, 1903, coroner of Colfax County, Neb., was killed in a runaway accident near Leigh, Neb., February 9, aged 27.

Harry Stites, M.D. Medical Department of the University of Pennsylvania, Philadelphia, 1876, of Harrisburg, died in Havana, Cuba, January 25, after a short illness.

Edward S. Dalrymple, M.D. New York University, New York City, 1885, died suddenly at his home in Branchville, N. J., February 3, from heart disease, aged 43.

Hiram A. Reid, M.D. Iowa Medical College, Des Moines, 1883, died at his home in Pasadena, Cal., January 28, from pneumonia, after an illness of one week, aged 71.

Elmer Fuller, M.D. Rush Medical College, Chicago, 1902, died at his home in Adrian, Mich., from influenza, January 25, after an illness of about one month, aged 43.

Walter Wells, M. D. University of Louisville Medical Department, 1905, died at his home in Willisburg, Ky., from typhoid fever, February 5, after a long illness.

Donn V. Herren, M.D. Missouri Medical College, St. Louis, 1887, of Bloekton, Iowa, died at Corning, Cal., February 1, from cerebral hemorrhage, aged 46.

E. H. Pocock, M.D. Starling Medical College, Columbus, Ohio, formerly of Marshall County, Ind., died in Oklahoma City, Okla., January 10, aged 73.

Daniel L. Robey, M.D. (Years of Practice, Illinois, 1878), died at his home in Stewardson, Shelby County, Ill., January 20, from senile debility, aged 77.

George W. T. Hannah, M.D. Vanderbilt University Medical Department, Nashville, Tenn., 1876, died suddenly at his home in Thomaston, Ga., February 1.

Robert S. Engler, M.D. Medico-Chirurgical College of Philadelphia, 1901, died at his home in Philadelphia, February 6, from typhoid fever, aged 31.

George W. Carpenter, M.D. Eclectic Medical College of the City of New York, 1887, of Minneapolis, died at St. Paul, January 28.

D. Dalton Jacobs, M.D. New York University, New York City, 1871, died at his home in Willimantic, Conn., January 31, aged 66.

Vincent Zolnowski, M.D. New York University, New York City, 1891, died at his home in New York City, January 21.

S. T. Brothers, M.D. twice a member of the Iowa legislature, died at his home in Malvern, Iowa, January 27, aged 79.

The Heart of Neurasthenia.—Dereum says that in neurasthenia the disturbances of the circulatory apparatus consist in modification of the force and rhythm of the heart's action and in the character and frequency of the pulse; more or less marked alterations of vasomotor tonus; and perhaps the most striking, if not the most common symptom of circulatory disturbances is palpitation of the heart.

Miscellany

A Problem in Practical Ethics.—The local profession of probably every city in the United States, says *American Medicine*, faces a problem in practical ethics, and in the larger cities this problem is multiplied a number of times. For example: Before his sins—at least before his fellow practitioners have "found him out"—a man gets into the local medical societies and establishes a fair reputation and practice. Soon are told stories, both by patients and physicians, and dark hints, or sorry evidences of trickery appear about the man. It is found that he is playing all sorts of fraudulent games with his patients to make money; he demands visits not medically required so long as the patience of the patient and his pocket-book will endure it. He smuggles in an unnecessary operation or two. If the bill is not paid there is a legal suit or a threat of it, until the poor doctor settles as best he or she may, usually paying in full to avoid trouble and to be done with the sharper. Expensive medicines of a peculiar character, or even instruments have, perhaps, also been ordered. There has been little or no cure of the disease and, when possible, there has been only an imagined, or encouraged, sometimes even a diabolically created disease present. The scamp intimidates his patients, gets new ones, heaven knows how, and while growing from bad to worse, covers up his deviltries so dextrously that legal proof of unprofessionalism can not be got. His ways become known to censors and colleagues; each shrinks from the danger and odium of exposing him, and so the infamy goes on. The local and the general professional reputation suffers, and the good name of medicine is degraded, while disgusted patients go over to quackery, saying, "These doctors must be much alike, or they'd run such fellows out of their medical societies, or 'show them up' in some way."

Postgraduate Work at Glasgow Royal Infirmary.—The provision for postgraduate clinical teaching his hitherto been very unsatisfactory in Glasgow, says the *British Medical Journal*. That there is a distinct demand for such tuition has been amply demonstrated by the success which has attended numerous courses on ophthalmology during the past few years. These courses are held during the winter months. A further attempt to organize postgraduate courses on a large scale has been decided on by the staff of the Royal Infirmary. With the approval of the managers, the following scheme has been adopted: There will be three courses of instruction in the year; one in winter during February and March; the second in spring in May, and the third in autumn during October and November. The winter course will include special instruction in the following subjects: Diseases of the ear, diseases of the nose and throat; diseases of the skin; diseases of the bladder and kidneys; diseases of women; clinical medicine; clinical surgery; surgical technic; surgical bacteriology; electrotherapeutics and bacteriology. The spring and autumn courses will be on similar lines, and from time to time such other subjects will be introduced as may be found desirable. It is intended to make the teaching as far as possible practical and clinical. There is no doubt that the Royal Infirmary will be an excellent field for postgraduate work. There will be ample clinical material at the disposal of the staff, as, in addition to a very large outdoor department, 600 resident patients are available.

Success and Failure.—Each year hundreds of young men receive their diplomas and are supposed to be ready to attend to the ailments that afflict poor suffering humanity. The *Medico-Chirurgical Journal* says that each of these young men should ask himself what he is going to do with his life. "There are many doctors, who have achieved a high reputation in their profession, who have still made a failure of their lives. Their aims have been low. They have not had a high ideal of their profession, and as a consequence they have missed the better part of life. Mere skill in diagnosis or with the knife does not mean success in the highest sense. It is in the moral sphere that the doctor, like every other man, gains his greatest success. It is the duty of every man to make the best of what is in him. Unless he works, from a sense of duty, in this direction his successes will be merely of a tem-

pupal nature. He may make a discovery or two in the practice of medicine which are of use to mankind, but he will have left no lasting impression on the world. In fact, the world would have been as well off if he had never lived, for some other man would soon have made the same little technical discovery."

Chloroform Death Without Chloroform.—Professor Raymond of Paris relates in the *Progrès Médical* for January 13 that when he was a student his professor was lecturing one day on the danger of death from chloroform and how to avoid it, talking over a patient who evidently understood little of the lecture except the words danger and death. When Raymond approached to begin to administer the chloroform the patient passed into syncope before a whiff of chloroform had been given, and it was a long time before he could be resuscitated. In a recent suit for damages for a death during chloroform administration, it was proved that the patient had been much afraid of the anesthetic and had said to one of the assistants: "You will come to my funeral, won't you?" Raymond concludes that death may occur from sheer dread of the chloroform, and that the witnesses of such an accident are not responsible for the fatality.

State Boards of Registration

COMING EXAMINATIONS.

MAINE State Board of Registration of Medicine, City Building, Portland, March 13. Secretary, Wm. J. Maybury, Saco.

CONNECTICUT Medical Examining Board, City Hall, New Haven, March 13-14. Secretary, Charles A. Tuttle, New Haven.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, March 13-14. Secretary, Edwin B. Harvey, Boston.

Kansas October Report.—Dr. T. E. Raines, secretary of the Kansas State Board of Registration and Examination, reports the written examination held at Topeka, Oct. 10-12, 1905. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 28, of whom 21 passed and 7 failed. The following colleges were represented:

| College. | PASSED. | Year. | Per Cent. |
|------------------------------------|---------|-------|-----------|
| University of Nashville | (1905) | 85 | |
| Northwestern University | (1905) | 84 | |
| Missouri Med. Coll. | (1890) | 77 | |
| University of St. Louis | (1905) | 80 | |
| University Med. Coll., Kansas City | (1902) | 88 | |
| Keokuk Med. Coll., Louisville | (1905) | 75 | |
| Tennessee Med. Coll. | (1899) | 76 | |
| Denver and Gross Med. Coll. | (1905) | 88 | |
| Hahnemann Med. Coll., Kansas City | (1905) | 75 | |
| Central Med. Coll. | (1905) | 84 | |
| Illinois Med. Coll. | (1905) | 85 | |
| Meharry Med. Coll. | (1904) | 76 | |
| Barnes Med. Coll. | (1903) | 81 | |
| Denver Homeo. Med. Coll. | (1902) | 82 | |
| Hospital Coll. of Med., Louisville | (1905) | 82 | |
| Kentucky School of Med. | (1902) | 75 | |
| American Med. Coll., Chicago | (1905) | 85 | |
| Laval University, Quebec | (1904) | 78 | |
| University of Colorado | (1904) | 85 | |

PASSED.

| College. | PASSED. | Year. | Per Cent. |
|-------------------------------|---------|-------|-----------|
| Hahnemann Med. Coll., Chicago | (1885) | 70 | |
| Meharry Med. Coll. | (1902) | 60 | |
| Central Med. Coll. | (1905) | 65 | |
| Ensworth Med. Coll. | (1905) | 65 | |
| College of P. and S., Boston | (1904) | 65 | |
| Starling Med. Coll. | (1881) | 58 | |
| Resnik Med. Coll. | (1897) | 68 | |

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Feb. 10, 1906:

Wilson, William H., asst.-surgeon, ordered to proceed from New York City to Schuykill Arsenal, Pa., on official business.

Fauntleroy, P. C., asst.-surgeon, ordered to proceed from Fort Porter, N. Y., to New York City, and report for duty as surgeon on the transport *Sumner* during its voyage to the West Indies, and on return of transport to New York City, will rejoin proper command.

Scott, Geo. H., asst.-surgeon, leave of absence extended 20 days. Hoff, John Van R., asst.-surgeon general, relieved from duty in the office of the chief of staff, to take effect Feb. 15, 1906.

Morse, Arthur W., asst.-surgeon, Baker, Frank C., asst.-surgeon, Kierstead, Henry S., asst.-surgeon, advanced from the grade of first lieutenant to that of captain, to date from Feb. 4, 1906.

The following named officers of the Medical Department, having reported their arrival at San Francisco, Cal., in compliance with orders heretofore issued, are assigned to duty and stations as follows:

Corbuser, Wm. H., deputy surgeon-general, will proceed to Vancouver Barracks, Washington, for duty as chief surgeon, Department of the Columbia.

Edmondbergh, H. D., asst.-surgeon, will proceed to Fort Leavenworth, Kans.

Furnell, Harry S., asst.-surgeon, will proceed to Fort Mackenzie, Wyoming.

Morris, Samuel J., asst.-surgeon, will proceed to Fort Schuyler, New York.

Le Wald, Leon T., asst.-surgeon, will proceed to Fort Slocum, New York.

Swezey, Verge E., asst.-surgeon, will proceed to Washington Barracks, D. C., and report to the commanding officer of the General Hospital at that post, for observation and treatment.

McCaw, W. D., surgeon, left Washington, D. C., on 16 days' leave of absence.

Steady, Cary A., asst.-surgeon, ordered to report in person to the commanding officer, Fort Entrancas, Fla., for duty.

Smith, L. L., asst.-surgeon, assigned to duty in the Army Transport Service, and will report to the superintendent of that service at San Francisco, Cal., for duty.

Chapman, Wm. H., deputy surgeon-general, granted three months' leave of absence.

Hoff, John Van R., asst.-surgeon general, granted fourteen days' leave of absence.

Keynolds, F. P., surgeon, leave of absence extended fourteen days. Furnell, Harry S., asst.-surgeon, granted twenty-one days' leave of absence.

Hathaway, L. M., asst.-surgeon, ordered to Jeffersonville, Ind., to examine male clerks and stenographers at quartermaster's depot, to determine whether they are mentally and physically qualified for service in the Philippine Islands.

Le Wald, Leon T., asst.-surgeon, granted seven days' leave of absence.

Brechmin, Louis, deputy surgeon-general, granted leave of absence for one month, on account of sickness.

Murtagh, John A., asst.-surgeon, in addition to present duties, will take charge of the medical supply depot, San Francisco, Cal., during the absence of Lieut.-Col. Brechmin, deputy surgeon general. Mason, George L., dental surgeon, left Fort Moultrie, S. C., and arrived at Fort Oglethorpe, Ga., for duty.

Carpenter, Alden, dental surgeon, returned to Vancouver Barracks, Washington, from leave of absence.

White, J. Samuel, contract surgeon, left New York on transport *Kilpatrick* for Philippine service.

Carson, Samuel K., contract surgeon, left New York on transport *McClellan* for Philippine service.

Newlove, George, contract surgeon, left New York as transport surgeon on the *McClellan*, en route to Philippine service.

Long, Stephen M., contract surgeon, when relieved at Fort Duchesne, Utah, ordered to San Francisco, Cal., for Philippine service.

Leifer, John F., contract surgeon, relieved from further duty in the Philippines Division, and ordered at the expiration of his present leave of absence, to duty at Fort Duchesne, Utah.

Helford, John R., contract surgeon, arrived at Fort Moultrie, S. C., for duty.

Tuley, William H., contract surgeon, left Boise Barracks, Idaho, on leave of absence for two months.

Stuckey, Harrison W., contract surgeon, arrived at Fort Assiniboine, Mont., for temporary duty.

Shivers, J. E., contract surgeon, returned to duty at Fort Missoula, Montana, from leave of absence.

Dillon, G. Parker, contract surgeon, left Army General Hospital, Presidio of San Francisco, Cal., for treatment at Hot Springs, Ark.

Hall, Henry M., contract surgeon, arrived home, Cedartown, Ga., for two months' leave of absence.

Waddell, Ralph W., dental surgeon, left Fort Leavenworth, Kans., en route to San Francisco, Cal., for Philippine service.

Navy Changes.

Changes in the Medical Corps U. S. Navy for the week ending Feb. 10, 1906:

Bertollette, D. N., medical director, commissioned medical director, with rank of captain, from April 5, 1905.

Beyer, H. G., medical inspector, commissioned medical inspector, with rank of captain, from April 5, 1905.

Gardiner, J. E., medical inspector, commissioned medical inspector with rank of commander, from Dec. 17, 1905.

De Vallin, C. M., Thompson, J. C., and Benton, F. L., surgeons, commissioned surgeons, with rank of lieutenant-commanders, from March 2, 1905.

Garton, W. M., surgeon, commissioned surgeon, with rank of lieutenant-commander, from March 12, 1905.

McCullough, F. E., surgeon, commissioned surgeon, with rank of lieutenant commander, from April 9, 1905.

Furlong, F. M., surgeon, commissioned surgeon with rank of lieutenant commander, from June 20, 1905.

Guthrie, J. A., surgeon, commissioned surgeon, with rank of lieutenant commander, from December 15, 1904.

Orvis, B. T., surgeon, commissioned surgeon, with rank of lieutenant commander, from March 1, 1905.

Kerr, D. B., surgeon, commissioned surgeon, with rank of lieutenant commander, from April 2, 1905.

Hoyt, E. E., P. A. surgeon, commissioned P. A. surgeon, with rank of lieutenant, from May 8, 1905.

Calvin, P. L., and ordered to the *El Cano*.

Dykes, J. R., asst.-surgeon, detached from the *Baltimore* and ordered to the *Oregon*.

Beltraler, J. C., asst.-surgeon, detached from the *El Cano* and ordered to the *Oregon*.

Dean, F. W. S., asst.-surgeon, detached from the *Prole* and ordered to the *Oregon*.

Grieve, C. C., asst.-surgeon, detached from the *Oregon* and ordered to the *Prole*.

Steele, J. M., medical inspector, commissioned medical inspector, with rank of commander, from Dec. 16, 1905.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending February 7, 1906:

Kallich, P. C., surgeon, to proceed to Boston and New Bedford, Mass., on special temporary duty, on completion thereof to rejoin station at Portland, Me.

Nydegger, J. A., P. A. surgeon, granted seven days' leave of absence from February 6, under Paragraph 191 of the Regulations.

Grubbs, S. B., P. A. surgeon, bureau letter granting him twenty-one days' leave from February 2, amended to read twenty-one days from February 7.

Holt, J. M., P. A. surgeon, leave of absence granted for two months, from January 15, on account of sickness, amended so as to be effective from January 23.

Wightman, W. M., asst.-surgeon, granted seven days' leave of absence from January 26, under Paragraph 191 of the Regulations.

Monoure, J. A., acting asst.-surgeon, granted leave of absence for three days, from February 15.

Watkley, W. S., acting asst.-surgeon, granted twenty-five days' leave of absence from February 6.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended February 9, 1906:

SMALLPOX—UNITED STATES.

California: San Francisco, Jan. 20-27, 8 cases.
Florida: Barberville, Jan. 27-Feb. 3, 4 cases; Lakeland, 3 cases; St. Petersburg, 3 cases; Seuffer, 1 case.
Georgia: Augusta, Jan. 22-29, 1 case.
Kansas: In 23 counties, Dec. 1-31, 145 cases.
Kentucky: Covington, Jan. 27-Feb. 3, 1 case.
Louisiana: New Orleans, Jan. 27-Feb. 3, 9 cases.
Michigan: Ann Arbor, Jan. 27-Feb. 3, 1 case; Detroit, 1 case.
Missouri: St. Louis, Jan. 27-Feb. 3, 1 case.
Nebraska: South Omaha, Jan. 27-Feb. 3, 1 case.
Ohio: Cincinnati, Jan. 26-Feb. 2, 5 cases.
Pennsylvania: Altoona, Jan. 27-Feb. 3, 1 case (imported); Lancaster, Dec. 30-Jan. 6, 1 case.
Utah: In 8 counties, Dec. 1-31, 111 cases.
Virginia: Norfolk, Feb. 2, 10 cases (at Crane Island Hospital, 138 cases).
Wisconsin: Appleton, Jan. 27-Feb. 3, 7 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, Dec. 9-16, 1 case.
Argentina: Buenos Ayres, Nov. 1-30, 41 deaths.
Brazil: Pernambuco, Dec. 1-13, 42 deaths; Rio de Janeiro, Dec. 24-Jan. 7, 3 cases, 3 deaths.
Canada: New Brunswick: Kings County, Jan. 29, present; Queen's County, present; Sunbury County, present; Toronto, Jan. 13-27, 3 cases.
Chile: Antofagasta, Jan. 4, 26 cases, 12 deaths; Iquique, Dec. 24-Jan. 6, 6 cases, 6 deaths.
China: Hong Kong, Dec. 16-29, 3 cases, 3 deaths; Shanghai, Dec. 27, present.
Ecuador: Guayaquil, Dec. 31-Jan. 14, 9 deaths.
Great Britain: Bristol, Jan. 15-20, 1 case, 1 death; Liverpool, 2 cases (imported).
India: Bombay, Jan. 2-9, 6 deaths; Calcutta, Dec. 16-30, 55 deaths; Madras, Dec. 16-Jan. 5, 36 deaths; Rangoon, Dec. 16-30, 17 deaths.
Italy: General, Jan. 11-18, 10 cases.
Mexico: Tuxmap, Jan. 23-30, 3 deaths (55 cases and 12 deaths in suburbs to date).
Russia: Moscow, Dec. 31-Jan. 6, 10 cases, 1 death; Odessa, Jan. 6-13, 11 cases, 4 deaths.
Spain: Barcelona, Jan. 10-20, 6 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, Dec. 24-Jan. 7, 6 cases, 2 deaths.
Cuba: Habana, Feb. 2, 1 case; Matanzas Province, Feb. 5, 1 case, 1 death.
Ecuador: Guayaquil, Dec. 31-Jan. 14, 13 deaths.
Mexico: Vera Cruz, Jan. 13-20, 2 cases, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, Dec. 9-23, 3 cases, 3 deaths; Bulacan Province, Jan. 4, present.

CHOLERA—FOREIGN.

India: Calcutta, Dec. 16-30, 129 deaths; Madras, Dec. 16-Jan. 5, 13 deaths; Rangoon, Dec. 23-30, 16 deaths.

PLAQUE—INSULAR.

Philippine Islands: Manila, Dec. 16-23, 1 case, 1 death.

PLAQUE—FOREIGN.

Brazil: Rio de Janeiro, Dec. 23-Jan. 7, 18 cases, 4 deaths.
Chile: Antofagasta, Dec. 20-27, 3 cases.
China: Hong Kong, Dec. 16-23, 3 cases, 3 deaths.
India: Bombay, Jan. 2-9, 17 deaths; Calcutta, Dec. 16-30, 23 deaths; Madras, Dec. 16-Jan. 5, 6 deaths; Rangoon, Dec. 16-30, 20 deaths.
Japan: Formosa, Nov. 24-Dec. 31, 15 cases, 14 deaths.
Peru: Callao, Dec. 21-Jan. 11, 1 case, 1 death; Chiclayo, Jan. 6, present; Lima, Dec. 21-Jan. 11, 10 cases, 5 deaths; Niteroi, Dec. 21-Jan. 11, 1 death; Salaverry, Jan. 6, present; San Pedro, Dec. 21-Jan. 11, 2 cases, 1 death; Trujillo, Dec. 21-Jan. 11, 17 cases, 1 death.

Medical Organization

What Can the County Society Do?

XI. MEDICAL EDUCATION.

Such a topic at first sight appears foreign to the purview of a county medical society, but such is far from being the case. It is generally admitted that there are too many medical colleges, too many medical students, and especially too many physicians whose educational attainments add no luster to the profession of medicine. In great part the remedy for these evils that are so loudly decried by the average medical man is in the hands of the organized profession. Through the Council on Medical Education the American Medical Association is endeavoring by pressure at the top to force all the medical schools to do every part of their duty at a high plane.

While this good work is progressing, the members of county societies have much they can do. In states that have high entrance requirements to medical schools the societies can see to it that they are maintained and enforced. When, as in most states, this stage in evolution has not yet been reached, the societies should work hard to have such a law enacted. After all, few men decide to study medicine who do not consult one or more physicians. In the past it has been the custom of the average doctor to feel flattered that someone else wants to be a doctor, and very often a man ill equipped for medicine has been encouraged into it, only later to fall in defeat before the hard conditions, or else to remain in the guild while lowering its average of ability. That just this phase of the subject is a proper subject for medical society discussion and action is shown by the experience of one county medical society in Ohio—Shelby. For some 25 to 30 years no young man from that county has studied medicine without his qualifications being considered by the society. The result has been few students for the schools, but those few have good educations and have given evidence of possessing some at least of the necessary qualifications. In one generation in a county with no large cities this method of supervision will work a revolution in the character and standing of the profession. As with so many other ill conditions of medical life, a powerful remedy is right within the grasp of the local organized profession—the county medical society.

Material Benefits from Work in County Society.

If the energy that is being wasted by physicians in attacking, belittling, slandering and fighting one another were devoted to work, and association in work, we should have a vastly better educated profession, and the public would receive its medical attention from gentlemen very much better qualified to give it. And they would all be better off, financially. Where one finds a small city or town in which the medical men are devoting their superfluous energies to belittling each other, there, as a rule, one finds a community with medical men below the average in ability and in financial standing; patients are being referred to some surgeon or specialist in the nearest large city, instead of being attended by some local man who is quite as good as the city specialist, or might be if he would devote his energies to his own betterment and work in harmony with his fellows.

On the other hand, where we see a similar town in which is a good, active medical society, with all the physicians in the vicinity members of it, where the men are working in harmony, where they are helping each other, where they feel that they may safely leave home from time to time and do systematic postgraduate work, there we find that patients are being referred to local physicians; that different men are taking up different lines of work and are being aided and helped by their fellow physicians. Unfortunately there are too few communi-

ties that have the benefit of a medical profession of this sort; but they do exist, and a few may be found in almost every state in the country. Why are there not more?

Association in Work.

The salutary influence of the county medical society can not be overestimated. It is here that association which is lacking in the ordinary course of the day's work may be enjoyed, and acquaintance with the other physicians of the vicinity which is so vital to an honest understanding of one another and to friendly relations may be made. The broadening influence of association, with the exchange of ideas and experiences that follows, is the most potent factor in the progress of medicine. To each we may give a little; from each we may learn something. Probably one of the truest words ever spoken was Osler's axiom, "The master word in medicine is work." Without work there is no advancement in educational equipment, in professional ability. Without work, constant, steady, never-ending work, we stagnate or drop back; and not only are we distanced in the race, but the community—or so much of it as comes under our professional care—suffers; we can not give that; ade of professional service which we should give; we become ignorant.

Just as work is essential to progress, so association is essential to work. Few men have the courage or the ability to work and study by themselves and without the stimulus of association with others similarly engaged. We do not appreciate our own limitations, our own ignorance, actual or relative, until we come into contact with others better educated or better qualified than we are. It should be considered his first and most important duty, by every physician who would deal honestly with himself and with his patients, to attend his county society and to work with his fellow-physicians for the betterment and improvement of all. The plan of making each county society a practical postgraduate medical school, as advocated by the Committee on Organization and so ably preached all over this country by Dr. McCormack, is a most valuable suggestion. It embodies the two things absolutely essential to progressive medical education and individual improvement, association and work.

Association Achievements Remarkable.

Dr. D. L. Wilkinson, Montevallo, Ala., writes: "I was a delegate at the Atlantic City session at which were passed the resolutions of reorganization. I was apprehensive. It is with extreme gratification that I now wish to say that I believe we have the best organization in the world. It has already achieved marvelous results and its possibilities are limitless. What it is accomplishing for the physician in a business way, what it is doing through its Committee on Legislation, what it is doing and has done through its Council on Pharmacy and Chemistry, what it is doing to lessen preventable diseases and to protect the public, certainly entitle it to the everlasting gratitude and the unflinching support of every regular physician throughout the length and breadth of these United States."

Society Proceedings

CHICAGO UROLOGICAL AND CHICAGO MEDICAL SOCIETIES.

Joint Meeting, held Jan. 24, 1906.

DR. WILLIAM L. BAUM, President of the Chicago Urological Society, in the Chair.

Syphilis of the Male Genitourinary Tract.

DR. HENRY G. ANTHONY referred to the discovery of the *Spirochæta pallida* as the probable cause of syphilis, and said that syphilis is a great imitator of other diseases. As to chancre, physicians are too prone to depend exclusively on the presence of induration in the diagnosis of chancre. They do not

consider other points sufficiently, such as outline, color, smoothness of the base, varnished appearance, etc. For years it has been recognized that it is at times impossible to differentiate between chancre and chancreoid. In Paris doubtful cases are admitted to the hospital and secretion taken from the sore is inoculated into the arm of the patient and covered with a watch crystal. If the ulcer is a chancreoid, a pustule will form in twenty-four or forty-eight hours, and microscopic examination will reveal the presence of the Ducey bacillus. This, he thinks, is a dangerous method and should only be employed on patients confined in hospitals. The base of the pustule should be cauterized immediately.

The diagnosis of a chancre from epithelioma of the penis is at times difficult. Cases have been observed of patients with lesions of the penis which have been diagnosed epithelioma. The penis was amputated, and shortly afterward the secondary eruption appeared. The sudden appearance and rapid development of the lesion should protect the surgeon from this serious blunder. One of the chief difficulties of diagnosis is the fact that epithelioma of the penis is apt to develop in those who have a syphilitic history. In all cases he advises that tissue be excised and examined microscopically before the penis is amputated.

When lichen planus occurs on the integument of the genitals it is apt to assume a circinate form, when it is almost certain to be mistaken for syphilis by the general practitioner.

Syphilis of the testicle in infancy frequently terminates in atrophy. There are two forms of syphilis of the testicle in adult life—sclerosis and gumma. Sclerosis is a hyperplasia of connective tissue which may affect one or both testicles. The organs enlarge to two or three times their normal size; they are very firm and hard; they annoy the patient through their size and weight. Under treatment they subside, but frequently a recurrence takes place if the treatment is discontinued, and after several attacks the condition becomes permanent.

In gumma of the testicle, one or both organs may be affected, and there may be present a single gumma or a number. Traumatism may be the exciting cause. In one of the author's cases the patient fell downstairs and struck his testicle against the navel post. As to syphilis of the epididymis, in the early months of infection six or eight nodules may develop suddenly in the globus major of each side. Later in the disease it may assume the form of a simple inflammation with deposits of plastic material, and disappear under treatment, leaving fibrous tissue.

Cases of gumma of the cord have been reported by Campbell, Goldenberg and others. In a case observed by Verneuil, the tumor was the size of two fists and was diagnosed as carcinoma. Its specific nature was discovered on postmortem examination. Reclus reported a case in which the cord had attained the diameter of a lead pencil, and it was stiff and rigid like a glass rod. In most of the cases the lesion was an almond-sized tumor which had been mistaken for a cyst.

As to syphilis of the penis, a chancre of the meatus produces a ring of cartilaginous hardness surrounding the meatus, which, when seen before the tenth day, can only be detected by palpation. There is no change in the color of the mucous membrane; later the mucous membrane presents a whitish appearance. It is usually accompanied by a discharge from the urethra which contains the gonococcus. The author also discussed scleroderma of the meatus, papular syphilide of the meatus, gumma of the prepuce, cylindroid of the urethra (the rarest of all syphilitic lesions of the genitourinary organs), syphilis of the ureter, syphilis of the kidney, and syphilis hereditaria tarda.

Tuberculosis of the Male Genital Tract.

DR. ALEXANDER HUGH FERGUSON discussed tuberculosis of the male urethra, prostate gland, seminal vesicles, vasa deferentia, epididymes and testicles. He said that primary tubercular urethritis of penile and membranous urethra is very rare. It is almost invariably secondary, and is a part of urogenital tuberculosis, descending from the kidney, bladder, prostate, vesiculae seminales, vas deferens, epididymis and testicles; more rarely affecting the areas of physiologic dilata-

tion, e. g., the prostatic, bulbous and navicular portions of the urethra where urine stagnates. The prostatic urethra is most frequently involved, but the lesions may occur along the entire urethra. Tuberculosis here, as elsewhere, may appear in the form of a milary tuberculosis, diffuse or clustered; as indolent ulcers, or cheesy infiltrations. The surface often appears diphtheritic. According to Senn primary tuberculosis of the urethra is exceedingly rare, and when it does occur it takes place in a part of the urethral mucous membrane prepared for the reception and growth of the bacillus by some antecedent injury or disease. Secondary tubercular lesions of the male urethra comprise 1 per cent. of all forms of tuberculosis and 17 per cent. of all cases of urogenital tuberculosis. Young male adults, subject to or affected with tuberculosis, are prone to tubercular urethritis. Baumgarten's experiments on rabbits are rather convincing that primary urethritis, tubercular in character, may occur by inoculation. In either primary or secondary urethritis of this nature the diagnosis is not scientifically complete without demonstrating the presence of the bacillus of tuberculosis.

In over 100 cases of prostatectomy Ferguson has observed tubercular foci in five cases where tuberculosis was not diagnosed before operation, and only suspected in the last two, owing to their clinical history. The prognosis of the prostatic cases that are obviously tubercular, whether unilateral or bilateral, acute or chronic, primary or secondary, is very grave. The course may be very slow, and it usually is, but the termination is often fatal. The treatment should be constitutional mostly. He performed a prostatectomy on three patients suffering from tuberculosis of the prostate, in what he judged to be an early stage of the disease. Two died of general tuberculosis within a year; the other lived a year and a half, then died of bilateral kidney tuberculosis. A perineal fistula persisted in one case. Ferguson stated that when an abscess forms in the prostate it should be opened in the direction it is pointing, either via the rectum or perineum.

Tuberculosis of the Male Urinary Tract.

DR. ARTHUR DEAN BEVAN said there are three common foci of so-called primary tuberculosis of the genitourinary organs. The term primary must be qualified, although the possibility of a true primary tuberculosis of these organs must be admitted in the sense that the bacilli may gain entrance into the circulation without having lodged at a point where the primary focus is developed and are carried to the kidney or to the epididymis. But such a true primary involvement is rare. In almost all cases of tuberculosis of the genitourinary organs a bronchial or tracheal gland, or some lung or bone tuberculosis is the primary focus. From this focus the tubercle bacilli enter the circulation and then lodge in the kidney, prostate, epididymis, etc. An ascending tuberculosis from the urethra is possible. Bevan thinks that the majority of writers still maintain the view that the epididymis is the common point of infection, but he thinks this view is erroneous. So far as the order of frequency is concerned, he thinks the kidney is the most common point of involvement, the epididymis second, and the prostate third.

The recent work of Semon, Kronlein, Mayo, and the speaker's own has shown that tuberculosis of the kidney, in more than 90 per cent. of the cases, is unilateral, and if the diagnosis is made early, a nephrectomy will frequently clean up the entire picture. Kidney tuberculosis is not very commonly followed by genital tuberculosis. Genital tuberculosis leads to involvement of the vas deferens, the seminal vesicles, and the prostate and bladder. Tuberculosis of the kidney very often runs a silent course, without a symptom. He has operated on a patient with a distinct, definite history of lesion of the right kidney, who before the operation believed herself to be in very good general condition. Nephrotomy of the right kidney showed a large accumulation of pus. From the time the nephrotomy was made not a drop of urine passed through the bladder. There were no symptoms referable to the opposite side at any time, but within a week the patient died. Postmortem examination showed the opposite kidney, which had never given rise to any symptoms, to be a sausage-like structure composed of a dense fibrous capsule, filled with a caseating mass, without a vestige of kidney tissue.

Such a picture of silent tuberculosis occurs not infrequently. The ordinary symptoms are very similar to those found in several other conditions—stone, malignant tumor, polycystic degeneration of the kidney, pyelitis, and nephropylitis from other germ infections. Blood is a common sign and symptom; also pus. The pain is of two kinds—colicky pain, which simulates closely that caused by kidney stone; rather chronic tenderness and uneasiness; temperature; presence of a swelling. In the advanced cases, where there is present a tubercular pyonephrosis, or perinephritic process, there is no early evidence of swelling. In the advanced cases, again, there is a general picture of tuberculosis, with temperature. The presence of tubercle bacilli is discovered in about one-third of his cases. Where the presence of bacilli is not determined the symptoms frequently can not be differentiated from those of stone in the kidney. Here Bevan employs the x-ray. If the x-ray shows stone, well and good; if it does not, he believes he has to do either with tuberculosis or hypernephroma. If there is no swelling, no enlargement, but temperature, he says, tuberculosis. If there is enlargement and no temperature, with the absence of stone, absence of tubercle bacilli, he says, probable hypernephroma, so that the diagnosis is arrived at in a number of cases by exclusion. Where one kidney is involved and the other is healthy, a nephrectomy should be done, as nephrotomies and resections are not followed by satisfactory results.

DISCUSSION.

DR. F. KREISSL expressed himself a little more optimistically than Dr. Bevan relative to the treatment of tuberculosis of the bladder. In many cases he thinks the removal of the kidney, which is the primary focus, may effect a cure of the secondary lesion in the bladder without any other interference. In secondary lesions due to a descending infection he has noticed quite often that certain topical applications to the excoriated bladder cause these ulcers to heal. He does not think that a primary lesion of the bladder, however, can be favorably influenced by the application of iodoform or bichlorid solution.

DR. GUSTAV KOLISCHER said that tuberculous cystitis may exist. Around the ureteral opening there may be a few disseminated ulcers, with undermined edges, and a few gray tuberculous nodules. In such cases favorable results are obtained if the kidney, which caused the descending tuberculosis, is removed. Rosen has recommended the injection of a 5 per cent. carbolic acid solution into such a bladder after the kidney is removed. In the case of a young girl on whom Kolischer did a nephrectomy, he found three ulcers. These healed inside of three days after the operation, but whether the healing of them was due to the injection of the carbolic acid or to the removal of the kidney, he does not know. He called attention to the fact that quite often the first symptom of kidney tuberculosis is frequency of urination. These patients, often without further examination, are treated by different methods, the urine not being examined. In young women, where the bladder is extremely tolerant, tuberculosis may exist for any length of time without causing serious symptoms.

DR. FERGUSON said that he has done nephrotomy in 12 cases, but had to remove the kidney later.

DR. BEVAN emphasized the point that tuberculosis of the kidney very frequently is primarily unilateral; and that the lesser operations of nephrotomy and resection can not be relied on; that the weight of evidence would seem to be in favor of a radical operation where an early diagnosis is made and the existence of another healthy kidney is determined.

WEST PHILADELPHIA BRANCH PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting, held Jan. 12, 1906.

Acute Tetanus with Recovery.

DR. GEORGE ALEXANDER KNOWLES reported the case of a boy 9 years of age, who received an incised wound of the left leg below the knee. The wound was cleansed and dressed with a bichlorid dressing and closed with four sutures. The edges did not unite and suppuration appeared. After several days the stitches were removed, the wound cleansed with bichlorid and peroxid and a 50 per cent. solution of carbolic acid in

glycerin was applied. Eight days after the accident the boy complained of painful swallowing, and the corners of his mouth became depressed. Bromid and chloral were immediately administered, but the symptoms increased, and in addition there was a slight twitching of the muscles and the jaw almost became locked. Tetanus antitoxin in doses of 30 c.c. was given hypodermatically twice daily for eleven days, in conjunction with bromids and chloral, and when the pulse was high and irregular, 5 gtt. of tincture of digitalis were given per rectum. On the thirteenth day, muscular rigidity having become constant, with convulsive seizures, opisthotonus and pleurothotonus, a lumbar puncture was made and 1 dram of antitoxin in 1 dram of normal salt solution was injected. The temperature rose to 104 3/5, but after about four days returned to normal. Food and brandy were given per rectum during the progress of the disease, and saline solution was administered in the same way in order to supply the system with water, as any attempt at giving water by the mouth produced convulsions. The pulse and respirations during the course of the disease were as high as 160 and 52 per minute respectively. On the fourteenth day the convulsions became less and finally ceased, although the muscular twitchings continued for several weeks after the patient was out of bed. They have now ceased entirely and the patient has made a good recovery.

DISCUSSION.

DR. W. S. NEWCOMET stated that at one time he felt that some of the deaths from tetanus were due to overdugging, and he decided to make sure that this should not be the case with the next patient. The patient on whom treatment was undertaken with this theory in view seemed to be progressing very nicely for several days, and one morning on going to the ward before breakfast, Dr. Newcomet learned that the patient had not had a convulsion during the night, but on returning to the ward after breakfast, he was informed that the patient had suddenly had a convulsion and died.

DR. C. B. LONGENECKER said that a man who ran a splinter of wood into his hand was first seen in the early stages of tetanus, and was immediately sent to the hospital and large doses of tetanus antitoxin were administered. At the end of ten days the spasms ceased and he was thought to be on the road to speedy recovery, when shortly afterward he relapsed into unconsciousness and died.

DR. KNOWLES stated that 720 c.c. of antitoxin were given to his patient and that the child had entirely recovered.

Modern Treatment of Wounds of the Anterior Segment of the Eye.

DR. JAMES F. PRENDERGAST stated that one of the important features was asepsis. Careful examination, with a good light, should be made and if there is redness present, the character and situation should be noted, as these are important diagnostic aids. Injuries of the lids are usually marked by free extravasation of blood, and cold compresses should be applied, if the case is seen early. If these do not accomplish the desired result, hot compresses, massage and sometimes a leech are of value. Lacerated wounds should be cleansed carefully and the edges brought together accurately to prevent deformity. Puncture wounds should be examined with great care to ascertain if there is any injury of the deeper structures, and if there is much reaction, septic washes should be applied. Burns, if external, should be treated the same as burns of any other part of the body, and if there are granulating surfaces, they should be protected with rubber or other tissue to prevent their growing together. Lacerations of the conjunctiva should be brought together with fine sutures, the edges carefully cleansed, foreign bodies picked out with sterilized instruments, and if the lacerations are painful, a drop of cocaine solution may be instilled. In burns of the conjunctiva, especially time burns, he deems thorough flushing advisable. To alleviate pain, cocaine solution and cold compresses were advised, and for the stimulation of healing hot compresses were recommended. Foreign bodies should be removed from the cornea and in many cases a drop or two of atropin is of value. Burns of the cornea should be treated by thorough cleansing of the eye and the application of cold compresses for a short time.

Syphilitic Complications of the Nose and Throat.

DR. A. B. KIRKPATRICK stated that it is very difficult to make a diagnosis of syphilis of the nose and throat in the primary and early secondary stages without inspecting other parts of the body. Suspicious cases should receive a careful examination of the tongue, hard and soft palate and throat. In the early cases there may be no history and no scars, and the vagaries of the specific infection are so irregular that even the most astute clinician may be mistaken. The secondary lesions of the throat occur most frequently in the following localities: tongue, lips, soft palate, gums and uvula. In the tertiary stage the diagnosis is more easily made, a symptom that is absolutely diagnostic being an erythematous eruption. In the treatment of syphilis he urged securing the confidence and co-operation of the patient and the necessity for continuing treatment for a sufficiently long period.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Pneumonia.

In an article in the *St. Louis Medical Review*, L. Litchfield, in speaking of the treatment of pneumonia, states that the patient should be supplied with plenty of fresh air without draughts. All unnecessary persons should be excluded from the sickroom. At the onset of the disease the digestive tract should be thoroughly cleansed by calomel or a saline purge, and water should be given freely and forced, if necessary, in the delirious patients, by high saline enema and by hypodermoclysis. If the pain is very severe, codein or morphin combined with atropin may be used very sparingly hypodermically. If the blood pressure is high, with a hard, full, bounding pulse, bleeding may be resorted to. In other instances, aconite or veratrum viride with active catharsis and icebags to the head and chest may accomplish the same effects. When the patient is delirious, in order to guard against any possible accident he should never be left alone. As regards the diet, Litchfield recommends that the nourishment be very sparingly given during the initial stage, and states that it should be simple and easily digested, as fermentation is liable to occur in the intestine, and thus produce a very serious complication. For the reduction of temperature he recommends sponge baths or packs. The heart must be carefully examined, and with an exaggerated second pulmonic sound strychnin should be administered, and if the pulse becomes irregular or intermittent, digitalis should be used. Litchfield recommends alcohol in the form of whisky or brandy, both as a stimulant and as a food, taking the place of fats and carbohydrates. He prescribes it especially when the pulse reaches 120, and if the amount given should show its effect by being eliminated through the respiratory tract, he recommends that it be diminished. If a collapse is threatened, with accompanying cyanosis, a hot mustard bath or hot pack should be employed, with the free use of stimulants hypodermically. Hot baths and packs are used also when extreme nervousness is present. After the crisis has taken place, or in cases of delayed resolution, he increases the diet by giving eggs, chops and steaks, which may be continued steadily unless there is an evidence of the recurrence of temperature.

Mumps.

Mumps, as a rule, require but little treatment, especially in children. In grown individuals, however, considerable discomfort may arise, and occasionally the patient may suffer a great deal of pain. In some cases it is necessary to institute an active line of treatment, in order to keep down complications. The patient should be put to bed and placed on a restricted diet.

According to the *Medical Press*, an instillation of the following may be used locally for its disinfecting purposes:

R. Menthol gr. viii 50
Liquid petrolati 3i 30
M. Sig.: To be instilled into the nasal passages two or three times a day.

As a gargle the following combination is recommended:

R. Thymol 3ss 2
Menthol gr. xv 1
Alcoholis 3iv 120
M. Sig.: Ten to fifteen drops in half a glass of water as a mouth wash and as a gargle.

If the fever should be of any consequence, warm baths are recommended and a preparation of quinin given internally. The following combination may be given:

R. Quinine hydrochloratis 3i 4
Syrupi ideae 3i 30
Aque 3ii 60
M. Sig.: Two teaspoonfuls three or four times a day for an adult.

Otalgia and orchitis are the two most frequent complications of epidemic parotitis, consequently when severe earache is present the tincture of opium, a few drops on a small piece of cotton-wool, and applied locally in the external ear, will usually suffice. Locally over the infected glands the following combination is recommended to relieve the pain and to cause the swelling to subside:

R. Guaiacol 3ss 2
Spiritus chloroformi 3i 4
Lanolini 3ss 15

M. Ft. unguentum. Sig.: Apply to the parotid region, and cover with cotton and oil silk.

If orchitis should arise poultices are recommended, which should be changed every two hours, and when the pain has sufficiently subsided an ointment similar to the following may be applied:

R. Guaiacol 3ss 2
Extracti belladonnae gr. v 30
Lanolini 3i 30
M. Ft. unguentum. Sig.: Apply locally.

The Bromids.

In his experiments on animals, F. Carteris of Glasgow University, in an abstract in the *Critic and Guide*, states that ammonium bromid is more toxic than sodium bromid, and that with large doses the predominant action is due to the ammonia, and that with repeated non-toxic doses the effects of the bromid may be obtained. In the author's opinion, ammonium bromid is not an eligible compound, because the bromid action is only evident after prolonged administration, while the stimulating action of the ammonium is produced rapidly, but passes off within an hour. As regards the action of the potassium and sodium salts, which, according to general opinion, is about the same, with either, Bernard regards potassium as three times as toxic as sodium, and states that consequently it has a much more depressing effect on the heart. Distefano makes a statement which counteracts this general opinion, by saying that potassium salts, instead of weakening the heart, stimulate it, and according to this writer's opinion, the potassium salts are preferable to the sodium salts. The sodium salts remain in the plasma and tissue spaces, while the potassium salts penetrate into the tissue itself and into the protoplasm, and as a proof of the greater efficacy of the potassium salts, he mentions the universally admitted superiority of the iodid of potassium to that of sodium in the treatment of syphilis.

Rectal Atony.

In the treatment of defective muscular power of the rectum Bodenhamer, in the *New York Medical Journal*, states that the first consideration should be the observance of strict and regular habits regarding the daily evacuation. This may be assisted sometimes by the injection of from a half to a pint of cold water, at a regular time each day. As cold is tonic, stimulant and astringent, it acts somewhat similarly to nux vomica, by exciting the sensibility and contractility of this portion of the bowel. In more obstinate cases, however, Bodenhamer recommends nux vomica as the best remedy, given alone or combined with other preparations. Drastic purgatives should never be used, and the smallest dose of an

aperient should be given so as to arouse gently the normal peristaltic action, and this aperient should be continued only until the daily habit of evacuation is established.

With regard to the ingredients composing an astringent and tonic injection, to be used locally in the treatment of atony of the rectum, this author states that the amount should not be more than five or six ounces, and should never be administered until the rectum has been thoroughly emptied of its fecal contents by a proper enema or aperient. This astringent injection should be given once daily at least, and instructions should be given the patient to retain it for a few minutes, if possible. In obstinate cases, a half to a grain of nux vomica may be added to this injection. He recommends for injection the decoction of galls as well as a strong decoction of white oak bark and alum. The following combination is also recommended by him:

R. Acidi tannici gr. xxx 2
Vini rubri 3iv 120
M. Sig.: For one injection.

He quotes the following combination as being recommended by Trousseau, as one which not only restores the organ to its normal action, but which will also cure anal fissure, if present:

R. Extracti rhatany 3ii 8
Alcoholis 3v 20
Aque dest., aa. 3v 20
M. Sig.: For one enema.

In some cases the following pill or one with a similar combination is recommended, especially if the atony of the cecum exists with that of the rectum, in order to excite the peristaltic action in those parts which can not be properly reached by an enema:

R. Ext. aloes gr. xxx 2
Ext. nucis vomice gr. xx 130
Ext. hyoscyami gr. xv 1
Ferri sulphatis gr. x 65
Olei caryophylli m. v 30

M. Ft. pillule No. xxx. Sig.: One pill at bedtime.

In the treatment of ordinary cases of atony of the anal sphincters, the cold water douche is recommended, applied rather forcibly for four or five minutes directly after each evacuation of the bowels. The following ointment or lotion may be used with advantage in such cases:

R. Strychnina sulphatis gr. x 65
Ung. aquae rose 3i 30

M. Sig.: Apply a small amount locally. Or:

R. Ext. nucis vomice gr. viii 50
Alcoholis 3ii 60
Aque ammoniac 3i 4

M. Ft. lotio. Sig.: Apply locally.

Medicolegal

Court May Compel Re-exhibition of Person.

The Supreme Court of Texas has held that, where a party has not voluntarily exhibited his person to the jury, a court has no power to compel him to do so. But, in *Houston & Texas Central Railroad Co. vs. Anglin*, a personal injury case brought by the latter party, it reaffirms the rule that, where a party has once exhibited his person to the jury to show the extent of his injuries, he may be required during the course of the trial to re-exhibit them. In this case the trial judge refused to compel the plaintiff, who had given testimony in his own behalf, and during the course of his examination had voluntarily exhibited his breast to the jury, to again exhibit it to a physician who was a witness for the defendant. The physician had testified that he examined the plaintiff a short while after the accident, and that his breast was then deformed; and it was proposed to show by the witness, after examining the alleged injured part of the plaintiff, that the same condition which existed at the time of the trial existed immediately after the accident. The court holds that the ruling of the judge refusing to compel the re-exhibition constituted reversible error. It says that if the plaintiff had been compelled to exhibit again his breast in the presence of the physician, and the latter, after examining, had been enabled to say that he

saw no difference between its condition at such time and what it was at the time of the accident, the testimony would have been material.

Opinions as to Causes—Failure to Obtain Medical Aid.

The Supreme Court of Missouri, Division No. 1, says, in the personal injury case of Glasgow vs. Metropolitan Street Railway Co., that it was competent for the medical witnesses to state what cause or causes might produce such a result as that in question (apparently a displacement of the womb), and this both of them did without objection, stating that such a fall as claimed could produce it, and that there were many causes which would produce the same effect. But it was incompetent for them to say that in this case the plaintiff's condition was, in their opinion, the result of the alleged fall. It was competent for them, in giving their opinions, to speak of that which they knew from their scientific learning and experience. It was not competent for them to draw conclusions of facts from the evidence in the case. There are cases in which a physician or surgeon may give his opinion, not only as to what might produce a given result, but also as to what in fact did produce the particular result in hand. But such are cases where no other cause could reasonably have produced the effect. Instances of this kind are found in murder cases where the cause of death is the question. A dead body is found floating in the river. To the eye of the casual observer it is a case of drowning. But a man of science makes an examination and testifies that the condition that would result from drowning is absent, but the condition resulting in death from poison is present, and no other cause that could produce death appears. Therefore, he may say it was a case of death by poison. Perhaps even in such case it would be more correct to limit the expert testimony to a statement of the scientific facts, leaving the inevitable conclusion to be drawn by the jury. But when after the scientific facts are proven there is but one conclusion to be drawn, it is not harmful error to allow the witness to state his conclusion. But such is very different from the case at bar, where the witnesses said that many causes produced a like result, and they did not say that one was even more probable than another.

Then the defendant contended that, if the plaintiff suffered the fall she claimed she did, it was her duty to have exercised reasonable care in seeking medical or surgical aid, and that, if she neglected to do so and thereby her injury was aggravated, she was not entitled to recover for the aggravated injury. The court says that this was a correct proposition of law. The law on this subject is treated by the law writers under the head of contributory negligence, and the distinction is drawn between contributory negligence which defeats the action, which is negligence which contributes to the happening of the accident, and contributory negligence which occurs after the accident, but which increases the suffering. In either case, before the action can be defeated or the measure of damages curtailed, the plaintiff must be shown to have been guilty of negligence which contributed to the result. The law did not in this case unconditionally demand of the plaintiff that she obtain surgical aid, or charge on her the consequences of failure to obtain it, because that might have been beyond her power. But it demanded that she use reasonable care to obtain such aid, and it withheld from her the right to recover for what she may have suffered in consequence of her failure to use reasonable care. She did not seek medical aid until thirteen months had passed, and her physicians testified that the probable effect of failure to obtain such aid was an aggravation of the affliction. The reason she gave for her failure to call a physician was that she had no means to pay him, and that she did not apply to the defendant company in the trouble because she hoped all the while she would get better. Whether that was sufficient to acquit her of negligence was a question for the jury.

Practicing Without License—Statute Construed.

The Supreme Court of Minnesota holds, in the case of State vs. Oredson, that section 7896 of the General Statutes of Minnesota of 1894, imposing a fine or imprisonment, or both, on anyone practicing medicine without a license, is to be liberally construed, so as reasonably to effectuate its purpose, to

prevent frauds, and to conserve the public health. That an unlicensed person has practiced medicine is the gist of the misdemeanor, and not a gratuitous incident to it. That such person has for a fee prescribed any drug, medicine, or other agency for the treatment of disease is one kind of evidence of guilt, and not the exclusive substance of the offense. The mere fact of graduation from a medical college does not entitle to practice medicine in Minnesota. The offense defined by statute may be committed by a graduate of a medical college, as well as by any other person not licensed to practice medicine, who is not shown to be a medical student practicing under the direction of a preceptor, or not then and there being a physician or surgeon of the United States Army or Navy.

The definition of practicing medicine given on the trial of this case was in accordance with the statute, as follows: "Any person shall be regarded as practicing medicine within the meaning of this act, who shall append the letters 'M.D.' or 'M.B.' to his or her name, or for a fee prescribe, direct or recommend for the use of any person any drug or medicine or other agency for the treatment, cure or relief of any wound, fracture or bodily injury, infirmity or disease; and there is a provision that this shall not apply to dentistry." The act, the court says, is a beneficial one, and is entitled to a liberal construction. Its purpose was not, as the counsel for the defendant insisted, to merely make prescribing for a fee the offense; so that the defendant could have practiced medicine generally, could have held himself out to the world as a physician and surgeon, could have examined patients, and inferentially could have operated on them as a surgeon for pay, and yet would not have been guilty of a misdemeanor within the meaning of the act. On the contrary, its plain object was to prevent the public wrong of practicing medicine without a license.

The act, the court continues, was not enacted for the benefit of any profession or of any school or theory of medicine. It was designed to secure the public in whole and in every part from quacks, humbugs, and charlatans masquerading under the venerable and honorable titles of surgeons, physicians and doctors, and to protect the public in a just reliance on the one using these titles as a man of proper education and sufficiently trained in the sciences involved. A just enforcement of that act would tend to prevent the most deplorable swindling of the ignorant poor, who can least afford to pay for the luxury of deception, and who are the most likely to be the dupes of ostensible practitioners, whose competency has not been determined by law, and whose moral deficiencies are evidenced by their false pretenses. Its terms should be construed, so far as reasonably may be, so as to tend to eliminate the suffering of an individual from the misuse of inert drugs when potent ones are needed, and of powerful agencies productive of ill where proper ones might bring relief or effect a cure, so as to avoid many evils of malpractice, and so as to minimize the exposure of the community at large to the spread of avoidable pestilence. The act is at once a statute of frauds and a health ordinance.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

February 5.

- 1 *Readjustment of Education and Research in Hygiene and Sanitation. W. T. Sedgwick, Boston.
- 2 Problem of Psychiatry in the Functional Psychoses. E. Cowles, Boston.
- 3 *Observations on Albumos in Urine. W. P. Elmer, St. Louis, Mo.
- 4 Roentgen Rays in External Treatment. M. B. Hutchins, Atlanta, Ga.
- 5 *Influence on Native Population of the Event of the Tuberculous. C. F. Gardiner, Colorado Springs, Colo.

1. Hygiene and Sanitation.—Sedgwick would have sanitation mean the care of the environment (streets, water, milk supplies, sewerage, etc.), and hygiene chiefly the care of the persons or groups of persons (feeding, vaccination, personal hygiene, etc.). The latter would then belong largely to medical men or physiologists, the former to sanitary biologists, chem-

ists and engineers. He laments the small attention paid to hygiene and sanitation, alike in medical schools and in schools of engineering, and looks for a remedy partly in the better definition and separation of these subjects, and partly in the establishment of permanent well-paid positions for trained men in the public health service—which should at the same time be made more general and less local. Sedgwick concludes his paper as follows: Politics must also be wholly eliminated from our boards of health, both state and municipal. There is no republican method of vaccination, no democratic plan of street cleaning. Places on boards of health must not be used as rewards of political activity. The time—if it ever existed—has gone by when a good board of health can be made up of a political doctor, a political saloon-keeper and a political nobody; for no well-trained and self-respecting expert in hygiene or sanitation can or will remain in the dubious and uncertain service of weak, incompetent or shifty characters.

3. Albumoses in Urine.—Elmer mentions the following as the diseases in which albumosuria occurs most frequently. Multiple myeloma of bones, tuberculosis, especially pulmonary, croupous pneumonia in the stage of resolution, septicemia, pyemia, abscess, carcinoma and sarcoma when undergoing rapid retrograde changes, and the leukemias and Hodgkin's disease after treatment with Roentgen rays. He recommends the following test for albumose as being the most practical: The reagent consists of a 50 per cent. solution of sulphosalicylic acid in distilled water. This reagent precipitates on contact all proteids found in the urine, but the albumoses redissolve on warming the urine, while albumins, globulins, etc., do not, so that when any or all of the albumin group are present with albumoses filtered the warmed urine will separate them, and the albumoses be determined by cooling the filtrate. Care must be taken to avoid prolonged boiling, for if mucins be present they may be broken down, one of the products being an albumose. A very small quantity of albumoses may be detected by dividing the urine after adding the reagent and warming one part while cooling the other and comparing the tubes before a dark surface.

5. Event of Tuberculous on Native Population.—Gardiner claims to have made a thorough study of this question and states that his records show that the natives of open resorts for the tuberculous are in a better physiologic condition to resist tuberculous infection than the average inhabitants of other towns and cities. All the facts seem to prove that it is better to be exposed daily for years to the germs from the tuberculous in a superior climate than not to be so frequently exposed, but to be under the influence of bad air and overcrowding in an unfavorable climate. The event of the tuberculous among the dwellers in our resorts is not so dangerous a factor as it has been supposed to be. The lesson to be drawn from this is to increase human resistance by proper ventilation day and night, for then the tubercle bacillus will lose its power to infect mankind or to destroy life.

Boston Medical and Surgical Journal.

February 1.

6 Sanitary Importance of Clean Milk. C. Harrington, Boston.
7 Results of Operation for the Removal of Cerebral Tumors. P. C. Knapp, Boston.
8 *Two Cases of Erythema Multiforme Desquamativum. P. K. Brown, San Francisco.
8. Erythema Multiforme Desquamativum.—The two cases reported by Brown are interesting for several reasons. One of the patients had gastrointestinal crises, fever, joint, heart and kidney complications. The other had intestinal disturbances, fever, slight kidney disturbance, angioneurotic edema and purpura with hemorrhages from the mucous membranes. Digestive manifestations preceded all the attacks in one case and preceded the single attack in the other. For ten days the first patient suffered from epigastric pain, cramp-like in character. When first seen there was a diffuse, tiny, regular eruption all over the trunk, shoulders and thighs, which had not appeared on the face, neck, arms or legs. It was perfectly discrete. It had no crescentic appearance and consisted of tiny reddened areas, slightly raised in the center, each one about the size of a pinhead. There was no pain anywhere. There had been

slight throat symptoms forty-eight hours before, but there was no eruption on the cheeks or throat, and no coryza or eye symptoms. The glands were slightly enlarged everywhere. There was no evidence of any skin infection. Temperature was 99.5 the following day, and the eruption had covered the entire body and the face except about the mouth. Where the itching had caused the patient to scratch it a good deal, it was diffusely red between the patches, looking more like scarlet fever. There was a shoty feel to the eruption on the trunk and extremities. The palms and soles were also affected. Desquamation was complete six weeks after the attack was over. The second case was diagnosed at first as one of German measles. There was no eruption on the face at all, but marked pallor. The papillae on the tongue were prominent and the tongue itself coated. The tonsils were slightly large and red, but there was no membrane. There was no tenderness behind the ears, but the glands in the neck were slightly enlarged. The axillary and inguinal glands were tender and markedly enlarged, some of them being as large as very large beans. There was some swelling of the tissue under the angle of the right side of the jaw. There were some mottled red blotches, one nearly 1 cm. broad, on both ears. Over the chest and particularly over the back there was a slightly mottled but diffuse bluish. It was particularly marked over the neck and buttocks, around the genital organs and slightly down the inner side of the thighs. Toward the extremities it became much more mottled, certain of the blotches being quite discrete. On the dependent parts the pressure of the clothes in folds had caused linear ecchymoses, looking very much like long scratches, particularly marked over the buttocks and shoulders. There was a marked absence of eruption or bluish in the axillary spaces. This patient had several such attacks, in the last of which the eruption was distinctly purpuric.

New York Medical Journal.

February 8.

- 9** *Medical Management of Nephritis. J. Tyson, Philadelphia.
- 10** *Hereditary Syphilis. R. W. Taylor, New York.
- 11** State Medicine. E. C. Carter, Manila.
- 12** Case of Tumor of Brain, with Autopsy. W. M. Leszynsky, New York.
- 13** Trials at the Trial Case. T. J. Shastid, Marion, Ill.
- 14** Athletics for Young Women. W. L. Howard, Baltimore.
- 15** *Gonococcus Vaginitis in Little Girl. W. D. Trenwith, New York.
- 16** *Tuberculosis of the Appendix Vermiformis. H. A. Haubold, New York.

9. Medical Treatment of Nephritis.—In this paper Tyson repeats the statements made by him in previous papers.

10. Hereditary Syphilis.—Taylor attempts to prove, by cases, that third infection in syphilis is an established fact. A synopsis of the first case is as follows: First.—Grandmother infected with syphilis in 1869, had secondary and tertiary lesions of much severity. She was careless of treatment. She was the first genitor. Second.—In 1872 this woman gave birth to a girl baby which presented classical hereditary syphilitic symptoms. After many vicissitudes this child (the second genitor) grew up seemingly healthy and strong, and never having been infected with acquired syphilis, she in two years gave birth to a baby daughter. Third.—In 1890 this second genitor gave birth to a miserable weakling girl, atrophic, marasmic, with very little strength and vitality, who at birth gave no distinct evidence of hereditary syphilis (third generation), but who in five years developed true dystrophic symptoms; Hutchinson's teeth, keratitis, ear troubles, and osseous swellings, and later showed unmistakable evidence of a virulent form of late syphilitic infection (third) in characteristic gummatous tumors and ulcers. This third syphilitic by inheritance is now growing up a victim of infantilism and general atrophy. A synopsis of the second case is as follows: First.—A healthy woman, married to a man, syphilitic two years, contracted syphilis two years later coincidentally with the development of pregnancy. Second.—She gave birth to a male child who, soon after birth, was characteristically heredito-syphilitic and later developed typical undoubted evidences of inherited taint, which showed themselves for several years. He never was infected with acquired syphilis. He married a healthy girl. Third.—Three years after the marriage of this second genitor, the wife gave birth to a thin, weakly girl, who

presented the appearances of infantilis. At 4 years many dystrophic symptoms of the bones and joints developed and were promptly cured by active antisyphilitic treatment. This case, therefore, was a clearly marked illustration of the development of syphilis in three generations. In the first, active syphilis; in the second, virulent hereditary syphilis; and, in the third, a dyscrasic condition attended with well-marked dystrophic changes.

15. *Gonococcus Vaginitis*.—Trendelenburg emphasizes the following points: 1. The great need for early diagnosis and treatment. 2. The necessity for frequent douching with large quantities of the solution. 3. The use of absorbent cotton as a dressing for the parts. 4. The need for care and gentleness in the treatment. 5. That a case should not be considered as cured until not only the discharge has stopped, but until it is no longer possible to find the gonococcus in the vaginal secretions microscopically. 6. The need of impressing the mother with the serious nature of the disease and the necessity for treatment until the gonococci have entirely disappeared. 7. The greater dissemination of knowledge among men and women who suffer from gonorrhea, as to its infectiousness to others, and its power to do, at times, great harm, at a period remote from the time of primary infection when the disease remains uncured. 8. The great necessity for care in keeping cases of gonococcus vaginitis out of day nurseries and babies' hospitals, because of the epidemic character which it assumes among the inmates once it has gained a foothold.

16. *Tuberculosis of the Appendix*.—The diagnosis of Haubold's case was confirmed microscopically. No tuberculous foci were noted in the peritoneum and a careful examination of the lungs did not reveal any indication of pulmonary tuberculosis. There was no cough and no expectoration. The patient died about nine weeks after the operation.

Medical Record, New York.

February 3.

- 17 *Clean Air. T. M. Prudden, New York.
- 18 *What Constitutes Pneumonia? A. H. Smith, New York.
- 19 *Danger and Protection in X-Ray Work. W. Lehmann, San Francisco.
- 20 Trachoma in Children. C. C. Bradley, New York.
- 21 *Two Cases of Pseudoleukemic Anemia of Infancy. E. M. Sill, New York.
- 22 Air de Luxe. W. P. Northrup, New York.

17. *Clean Air*.—Prudden says that it is interesting to note from the careful experiments which have been made that ordinary ventilation, however effective it may be in supplying fresh air and in removing contaminated gases, has no noteworthy effect in the removal of dust, either floating or at rest. Experiments also prove that hanging garments out of doors merely, is not to be commended. Unless such articles are brushed, or beaten, or shaken, or unless they flap violently in the wind, bacteria are not removed in great numbers. The writer emphasizes the fact that a large part of so-called disinfection might be replaced to advantage with proper methods of sweeping, dusting and mopping, if all these were not so simple and commonplace, and if everyone could realize the significance of dust in the conveyance of infectious agents. He emphasizes the importance of the use of moist mops on the floors, and of moist dust cloths on the solid furniture. He denounces the employment of the feather duster. The sprinkling of damp sawdust on floors before sweeping is a great aid in getting rid of much dust. He declares that the infectious diseases of the respiratory organs are steadily increasing as people are more and more huddled together in offices, dwellings, traveling conveyances and places of public assemblage. A large number of these diseases are directly traceable to infectious material passed off in spitting, coughing and sneezing, by those suffering from various degrees of local disease. Promiscuous spitting should be stopped. The harmfulness of coughing and sneezing can in most instances be controlled by the use of the handkerchief.

18. *What Constitutes Pneumonia?*—Smith contends that a single pneumococcus lodged in an air cell and causing there its specific irritation and consequent exudation, presents all the essentials of the disease. He declares that it matters not if ten minutes later the organism is dislodged and swept away by the exudate, the patient even then has had a pneumonia, if

only a monococcal one. If later the bronchiole terminating in the lobule invaded becomes blocked, and the further spread of the infection is prevented, the patient may escape with a unilobular pneumonia, but it will be pneumonia nevertheless. Smith believes that such abortive attacks are very common.

19. *Danger and Protection in X-Ray Work*.—Lehmann emphasizes the necessity for shielding the operator not only from the Roentgen rays, but from the secondary rays as well. He says that the best means of protection is a gown of impermeable material. Complete suits have been made of material of different degrees of safety, the heavier and bulkier the better, and sheet lead is the only safe thing. In a suit of this sort described by the author, the apron of Roentgen-proof material reached from the neck to the knees; the cap covered the face and head and was provided with lead glasses. The gloves were also ray-proof, but neat enough to permit of handling screen and apparatus.

21. *Pseudoleukemic Anemia of Infancy*.—Sill reports two cases. One of his patients died six weeks after he was called in; the other is still alive after five months and is steadily improving. The treatment has been proper diet, cod-liver oil and Fowler's solution.

St. Louis Medical Review.

January 27.

- 23 *Appendicitis Complicated with Typhoid Fever. A. Avery, Sapulpa, I. T.
- 24 *Bacterial Inoculation as Guided by Wright's Opsonic Index Curve, with Special Reference to the use of Tuberculin. J. R. Clemens, St. Louis.
- 25 Present Position of the Surgery of Carcinoma of the Cecum. G. W. Broome, St. Louis.
- 26 *Materia Medica*. D. L. Field, Jeffersonville, Ind.

23. *Appendicitis Complicated with Typhoid*.—When first seen, Avery's patient was suffering acute pain in the abdomen. This pain was most intense over the hypochondrium, but the entire abdomen was tender to the touch, with severe local tenderness over McBurney's point. The right rectus was rigid; the patient was nauseated at times, had some headache, and was constipated. The temperature varied between 101 and 103.5 F. In spite of all medication the bowels did not move until about the fifth or sixth day. About the seventh day a slight wave made its appearance in the temperature chart, an evening rise and a morning fall. Rose-colored spots appeared on the abdomen three or four days later. The stools at this time were characteristic of typhoid. The disease ran the usual course and the patient made a complete recovery. A laparotomy was then done and the appendix was found completely wrapped up by the omentum to which it had become adherent, and showed distinct signs of recent inflammation.

24. *Wright's Opsonic Index*.—Attention is drawn by Clemens to the advantages of Wright's method as a means for diagnosing tuberculosis. He considers it harmless and practically infallible. It is especially valuable because the diagnosis is made outside the patient's body; it permits of the use of tuberculin to the patient's best advantage—curative; it removes the dangers of diagnosis by tuberculin.

American Journal of Medical Sciences, Philadelphia.

January.

- 27 *Influence of Light in the Production of Cancer of the Skin. J. N. Hyde, Chicago.
- 28 *New Method of Operating on Dupuytren's Contraction of the Palmar Fascia. W. W. Keen, Philadelphia.
- 29 Success which Attends Extraction of Catarrhal and the Causes that Contribute to It. S. Theobald, Baltimore.
- 30 Fever in Chronic Endocarditis. J. S. Thacher, New York.
- 31 *Opium in Myocarditis, Weak Heart, and Dilated Heart. J. H. Musser, Philadelphia.
- 32 Disease of the Heart Muscle Treated in the Bellevue Hospital Out-Patient Department from November, 1903 to June, 1905. T. B. Barringer, Jr.
- 33 Classification of Cases Heretofore Called Rheumatoid Arthritis. P. P. Nathan, New York.
- 34 *Rheumatism of the Stomach, with Incidental Hematemesis of Uncertain Origin. H. Hloway, New York.
- 35 *Extraordinary Case of Anthracosis Simulating Thoracic Aneurysm. H. Seavall, Denver, Colo.
- 36 Action of Various Substances on Pure Cultures of the Amoeba Dysenteriae. J. B. Thomas, Philippine Islands.
- 38 Pycnogenitis of Pregnancy Considered from the Obstetric and Surgical Standpoint. C. G. Cunnison, Boston.
- 40 *Tumor of the Cauda Equina. E. Schmoll, San Francisco, Cal.
- 40 *Sprochete Found in Syphilis. R. C. Rosenberger, Philadelphia.

27. **Light and Skin Cancer.**—According to Hyde, the skin of the human body, in a certain proportion of individuals, and in those only, is hypersensitive to the action of the actinic rays of the spectrum. This hypersensitiveness may be exhibited in the production of either hyperemia, pigmentation, telangiectasis, atrophy, hyperkeratosis or cancerosis of the skin; or by all, and at times in a determined order of succession. In the form of childhood cancerosis known as xeroderma pigmentosum, the pigmentation, telangiectasis, atrophy, hyperkeratosis, and cancerosis of the skin resulting from exposure to rays of light are exhibited early in life, instances of this disorder being exceedingly rare. Pigmentation, telangiectasis, atrophy, hyperkeratosis, and cancerosis of the skin occur in adults much more frequently than in childhood, reaction to the play of actinic rays of light on the surface being chiefly determined after the middle periods of life have been reached. Physiologic pigmentation of the skin in the colored races seems to furnish immunity against cancerosis of that organ. The colored races apparently suffer less than the whites from cancer of other organs than the skin. This relative immunity may be due to the protection from actinic rays of light furnished by the pigment of the integument.

28. **New Operation for Dupuytren's Contraction.**—Keen refers to a case of Dupuytren's contraction of the palmar fascia in which he performed a new operation, the parts being anesthetized by neural infiltration. He first infiltrated the skin just above the wrist, over the median and the ulnar nerves, with a solution of beta-eucain and adrenalin, of which the following is the formula:

| | | |
|--------------------------------|-------|-----|
| R. Sol. adrenalin chlorid..... | 3iiss | 10\| |
| Beta-eucain | 3ss | 2\| |
| Sodii chlorid | 3ii | 8\| |
| Aque dest. q. s. ad..... | 3vii | 210\| |

Having exposed these two nerves he then injected a few drops of this same solution into them. After waiting for a considerable time he attempted to begin the operation, but found that it was exceedingly painful. Scarcely any diminution of sensation had been produced by the infiltration, although the injection at the site of the operation on the two nerves had been entirely satisfactory. He then injected into each nerve four or five drops of a 4 per cent. solution of cocaine, and within three minutes was able to begin the operation without causing the slightest pain. In consequence of the very careful dissection in the palm, the operation lasted over half an hour. The local anesthesia at its end was quite as satisfactory as at the beginning. He began the incision at the hall of the thumb on a line with the interspace between the forefinger and middle finger, went down almost to the web between the forefinger and middle finger, then transversely to a point corresponding to the beginning of the incision on the other side of the hand. The dissection of the flap was begun at the transverse incision corresponding to the knuckles and went directly down to the sheaths of the tendons. He dissected back the entire flap, including on the under surface of the flap the entire palmar fascia. He then dissected away the palmar fascia from the under surface of the flap, the fingers of the assistant being on the palmar surface of the skin, so as to warn him if he got too close to the skin. In order to dissect out the fibers going to the index and the little fingers, he next undermined the skin overlying them, and was able to get at the beginning small bands of fibrous tissue which had not been turned back in the large flap. He tied half a dozen small vessels with catgut, so as to have as little danger from any effused blood as possible. Union took place by first intention throughout both of the small operation wounds over the nerves and that in the palm of the hand. No sloughing whatever took place; even a little nick that he made inadvertently in the skin of the palm was rather advantageous, as it allowed what little blood was effused under the flap to escape. The patient was discharged from the hospital with almost normal motion of the fingers.

31. **Opium in Heart Disease.**—According to Musser, there are sound clinical reasons for the belief that opium is a tonic in cardiac debility. He says that in cases of weak heart after exhausting disease, after prolonged mental and physical

pain, and without organic lesion of valves or muscle, opium is of advantage. In cases of failing compensation, with the onset of stasis, the heart is supported, especially if the unfortunate possessor is an impressionable subject who frets and fumes because of the ordinary irritations of life. In the gradual "engorgements from myocardial dilatation, in chronic parenchymatous nephritis, and in arteriosclerosis it is of value. If the patient is hypochondriacal or hypersensitive the second daily dose of opium invites sleep and induces a feeling of well-being. The dyspnea of myocarditis is relieved or prevented by continuous small doses of morphin for a very long time. Musser has seen a form or stage of myocarditis with restlessness, Cheyne-Stokes breathing, dyspnea and rapid pulse helped by continuous doses of opium. The tachycardia of Graves' disease is relieved and in three of his cases it appeared to contribute to the cure of the disease. In nervous and irritable patients opium is almost necessary to induce comfort.

34. **Rheumatism of Stomach.**—Ilfloway cites the case of a man, aged 67, of abstemious habits, who was troubled with dyspepsia for thirty years. He suffered from attacks of pain in his stomach, which usually came on about the fall of the year and continued, off and on, throughout the whole winter. He always felt well during the summer heat. The diagnosis was dyspepsia, and various dietary regimens and many medicines were prescribed, but the result was always a negative one. For a year past he suffered severely from cramps, coming on mostly in the night, and becoming more severe when the weather was about to change. After a careful study of the symptoms of this case and the results obtained from climatic treatment, Ilfloway is convinced that it was a case of rheumatism of the stomach.

35. **Anthraxis Simulating Thoracic Aneurism.**—Sewall's patient suffered from a mild degree of pulmonary tuberculosis. Besides this there could be heard a systolic bruit confined to an area represented by the lower half of the right scapula. This bruit was suspected to arise from a thoracic aneurism. The patient felt quite well except for some shortness of breath. After a six months' stay in bed she coughed up some bright blood and complained of intense pain over her heart, greatly aggravated by inspiration. These events were taken as evidence that an aneurism had ruptured by the section, the blood probably penetrating the pericardial cavity. Death ensued after twenty-four hours. At the autopsy no sign of aneurism was found. At the root of the right lung there was a hard, solid mass, pyriform in shape, four inches long, over three inches wide and two and a half inches deep. This mass, on section, was found to be black in color and gristly in resistance. At the root of the left lung, immediately posterior to the left bronchus, was a similar mass consisting of two portions. Numerous small black bodies, the size of grains of wheat, were scattered throughout the lung. An extraordinary degree of emphysema involved the margins of the lung. On chemical examination the pigmented masses were found to be coal dust. Hyperplasia of connective tissue also was present in the masses, and Sewall is of the opinion that this was due to the irritation of the coal dust, a true anthracosis.

40. **Spirochete in Syphilis.**—During the past four months Rosenberger has made studies of chancres, mucous patches, enlarged glands, condylomas, eruptions and cerebrospinal fluid with a view to finding the spirochete and establishing its causative relationship to syphilis. In every specimen examined, with the exception of the cerebrospinal fluid, the *Spirocheta pallida* was demonstrable.

41. **Floating Kidney.**—According to Longyear, the usual operation of nephropexy is inadequate because it fails to meet all the indications in the conditions present. To be effective the operation must certainly do one thing which the stitching of the stripped kidney, only, to the loin, can not accomplish, viz., the prevention of the descent of the ascending colon and cecum. The operation must have for its aim the attachment of both kidney and bowel; or the nephrocolic attachment may be severed—thus preventing traction on the kidney and duodenum—and the kidney fixed by simply stitching the

severed ligament into the wound at its appendage. The operation which Longyear has found the most easy of accomplishment, and which seems to meet the two indications mentioned, is the fixation of the nephrocolic ligament into the upper angle of the wound without severing it from the colon, and also fastening any redundant mesentery that may be present in the lower angle of the wound. The convergence of the framework of the fatty capsule into this ligament makes a structure of sufficient strength to be depended on to hold the displaced organs, if securely attached to the aponeurotic tissue, preferably where it is thick near the twelfth rib. The kidney fixed by this ligament is placed at nearly its normal position and is not held in an immovable position, as is the case when united to the muscles by the usual operation. The bowel is also held by the same attachment and undue descent of the cecum prevented, and it is possible that this will prove sufficient, but at present the writer deems the shortening of a redundant mesentery best, if for no other reason than that it will prevent traction on the other attachment while it is becoming firmly fixed. The opening into the peritoneal cavity has the added advantage of giving free access to the kidney and enabling the operator to handle the organ at will, through its close attachment to the colon, traction on the latter, brought through the wound, serving to bring the kidney close to the opening. Longyear says that the difficulty of handling the kidney when grasped by the sides of the fatty capsule has been experienced by all, as the tissue gives way readily and appears to have little resisting power. This is because the fine fibers forming the network of this capsule are spread out and the trabeculae widely separated by the fat deposited between them. As they converge below the lower pole of the kidney to become inserted into the posterior wall of the bowel, they lie parallel to each other, and by their aggregation form a strong band of a good deal of resisting power, so that the kidney can be readily held in firm fixation by means of a blunt hook passed around it, permitting complete control of the organ for examination or farther operation.

Detroit Medical Journal.

January.

- 41 Etiology of Floating Kidney, with Suggestions Changing the Operative Technic of Nephroexy. H. W. Longyear, Detroit.
- 42 Neurasthenia. C. W. Hitchcock, Detroit.
- 43 Anesthesia and Urethral Strictures. C. S. Oakman, Detroit.
- 44 Cost to the State of Those in Public Asylums Suffering from the Results of Venereal Diseases. C. B. Burr, Flint, Mich.
- 45 Venereal Disease in Ophthalmology. F. Carrow, Detroit.
- 46 Extradrural Abscess—Radical Operation. E. Amberg, Detroit.

Journal of the Association of Military Surgeons, Carlisle, Pa.

January.

- 47 Prevention of Disease in the Army and the Best Method of Accomplishing that Result. J. R. Kean, U. S. A.
- 48 *Proposed Regimental Medical Supply Table for the National Guard. S. C. Stanton, Chicago.
- 49 Stretchers Used on Warships. S. Suzuki, I. J. N.
- 50 Danger from Typhoid Urine in Military Camps. C. S. Butler.
- 51 Emergency Field Service Touriquet. H. S. Hansell, U. S. N.

48. Medical Supply Table for National Guard.—Stanton has prepared a list of fifty-four medicines which he believes contains all the medical supplies absolutely essential for an ordinary tour of duty of a regiment of the national guard. No quantities are specified, as it is intended that the state shall keep these supplies in store, and that requisitions shall be made from day to day as occasion may demand. This medical supply table has been adopted as the official supply table for the use of the Illinois National Guard and Naval Reserve. Included in this list are acetanilid compound, boric acid, borosalicylic acid, salicylic acid, alcohol, ammonium bromid, aromatic spirits of ammonia, amyl nitrite, bismuth subgallate, compound tincture of benzoin, chloroform, antiseptic bichlorid tablets, iodine, calomel, magnesium sulphate, morphine, Dover's powder, nitroglycerin, castor oil, peptonizing tablets, petrolatum spissum, all compound pills.

Brooklyn Medical Journal.

January.

- 52 Pus in the Pelvis. G. McNaughton.
- 53 *Surgery of the Female Pelvic Floor. C. Jewett, New York.
- 54 Plea for the Early Operative Diagnosis of Carcinoma of the Stomach. G. R. Fowler, New York.
- 55 Postoperative Paralysis. R. S. Fowler, New York.
- 56 The Medical Side of Surgery. W. S. Hubbard.

53. Surgery of Pelvic Floor.—Jewett summarizes his paper as follows: The pelvic floor is essentially a muscular diaphragm. The muscles of the floor are disposed in two distinct layers. These layers are separated by the plane of the hymen. The upper layer is the levator ani. The general trend of the levator fibers is toward the coccyx. The rectum and the perineal body are in relation with the median borders of the levator muscles. The tubular viscera are slung in the pelvis mainly by the levator attachments to the rectum and to the bridge of fibrous elements in the perineal body. The most essential part of the obstetric injury is the rupture of these fascial attachments behind the vaginal sulcus and alongside the rectum. The reparative operation should be addressed, in the main, to the restoration of these fascial attachments. Jewett believes that restoration *ad integrum* is best effected by the technic of Emmet, and that Holden's operation is the simplest and most definite of the procedures yet devised which attempts support by substituting an artificial for the natural relations of the pubic bands of the levator muscles.

American Journal of Surgery, New York.

January.

- 57 Technic of Uteral Dilatations. F. C. Valentine and T. M. Townsend, New York.
- 58 Diagnosis and Differentiation of Cervical Tumors and Enlargements. M. A. Austin, Anderson, Ind.
- 59 Plaster of Paris, and How to Use It. (To be continued.) M. W. Ware, New York.
- 60 Relation of Malposition of the Uterus to Endometritis. B. Müller, Hamburg, Germany.
- 61 *Reflections on Inguinal Hernia. C. A. Butler, Hohenwald, Tenn.
- 62 Insanity a Symptom of Old Fracture of Skull; Operation; Recovery. J. E. Chambers, St. Louis.

61. Inguinal Hernia.—For the radical cure of inguinal hernia Butler employs a modification of Halstead's operation: A skin incision is made parallel to Poupart's ligament and three-fourths of an inch internal to it, extending from a point slightly beyond the internal abdominal ring to the spine of the pubes. The subcutaneous tissues are divided in their turn the full length of the skin incision. The external oblique is first incised parallel to the direction of its own fibers, then the internal oblique and transversalis are cut, and finally the transversalis fascia having been divided, the spermatic canal is fully exposed from the internal to the external abdominal ring, thus bringing into view the cord. The vas deferens is isolated and if there is any tendency to enlargement of its accompanying veins all but two or three are ligated, above and below, and dissected out. The subcutaneous incision is extended five-eighths of an inch or more beyond the internal ring, in order to release the constriction and to get firm, fresh tissue from which to build the new exit for the cord. Following this the sac is opened, its contents carefully examined and replaced within the abdomen. A ligature of catgut is now passed around the neck of the sac close to the internal ring and the sac is cut away. The ends of the ligature which have been left long are threaded separately through long curved needles, passed eye-end first through the abdominal opening alongside of the stump of the sac and brought out a quarter of an inch apart through the internal oblique at a point one and one-half inches internal to the upper angle of the incision, where gentle traction is made to draw the stump of the sac away from the field of operation, when, by tying the ligature, the stump is held in a permanently displaced position. Any cicatricial mass or tissue of questionable vitality is dissected away from about the old internal abdominal ring. Each muscular layer is sutured separately, allowing the edges to overlap as much as the tension will allow, until the external oblique is reached. Instead of suturing the aponeurosis of the external oblique in a direct line, as in case of the other layers, a strip of one-half inch wide and one and one-half inches long is cut from the internal border of the external oblique at a point directly opposite the site of the new ring, leaving the upper end of the strip fast and passing the loose end under the cord and suturing it to the superior surface of Poupart's ligament. This gives a firm ring with the fibers running crosswise to the direction of greatest strain. The remainder of the aponeurosis is sutured behind this loop in the same manner as the underlying structures, using silk or fine silver wire. Butler says that this portion of the method was employed by

the late W. V. Morgan of Indianapolis, for two years prior to his death and since that time by himself, together in more than fifty cases, with uniformly good results. The hernia now having been reduced, the stump of sac displaced, away from the operative field, the cord located on its new bed and the hernial opening obliterated, all that remains to be done is to suture the skin firmly with kangaroo tendon and to apply a dry dressing.

Archives of Ophthalmology, New York. November.

- 63 Extraction of Cataract in the Capsule. H. Smith, Jullundur, Punjab, India.
- 64 Two Cases of Subperiosteal Hemorrhage of the Orbit from Scurvy. C. B. Meding, New York.
- 65 Melanoma of the Iris. E. Anargyros, Athens.
- 66 Examination for Central Scotoma. C. Hess, Würzburg.
- 67 Tenotomy and Advancement. C. Froelich.
- 68 Tetany-Cataract. Ed. Zirm, Olmutz.

St. Louis Courier of Medicine. December.

- 69 Albuminuric Iridocyclitis. N. M. Semple, St. Louis.
- 70 Stab Wound of the Heart. R. H. Campbell, St. Louis.
- 71 Anatomic and Pathologic Observations on the Formation of Hernia at Rossbach's Triangle. W. T. Coughlin, St. Louis.
- 72 Formation of Hernial Sac by the Obliterated Hypogastric Artery. W. C. G. Kirchner, St. Louis.
- 73 Tumors of the Cerebellum. E. A. Babler, St. Louis.
- 74 Alkalies in Infant Feeding. J. Zahorsky, St. Louis.

Journal of Medicine and Science, Portland, Maine. December.

- 75 Silver Salts in Ocular Therapeutics. G. F. Libby, Denver.
- 76 Some of the Methods for the Treatment of Cancer of the Rectum. L. H. Adler, Jr.
- 77 A Physician's Pilgrimage. H. F. Twitchell, Portland.
- 78 Complications of Pregnancy, Treated Surgically. F. D. Donoghue, Boston.
- 79 How to Buy Life Insurance, a Reply to the Critics of the Life Insurance Companies. B. G. March, Portland, Me.

Vermont Medical Monthly, Burlington. January.

- 80 Intencephalus. M. S. Abbott and F. Lockhart, McGill.
- 80½ General Principles of Alkaloidal Medicine. W. C. Abbott, Chicago.
- 81 Acute Diarrheas of Children. J. H. Buffum, Wallingford, Vt.

Woman's Medical Journal, Toledo, Ohio. December.

- 82 Prevention of Tuberculosis. G. W. Webster, Chicago.
- 83 Psychology of Disease. M. M. S. Johnstone, Chicago.

Bulletin of the American Academy of Medicine, Easton, Pa. December.

- 84 Altruism in the Medical Profession. W. S. Hall, Chicago.
- 85 Report of Committee on Laws Regulating the Practice of Medicine. C. McIntire, Easton, Pa.

Journal of Cutaneous Diseases, New York. January.

- 86 Case of Undetermined Tropical Ulceration Involving the Nose, Pharynx and Larynx. J. A. Fordyce, New York, and W. F. Arnold, H. S. N.
- 87 Acute Septic Pemphigus. G. W. Crary, New York.
- 88 Tuberculous Verrucosa Cutis. J. B. Shielmeir, Dallas, Texas.

American Practitioner and News, Louisville. January.

- 89 Relation of Gynecology to Cystoscopy and Urethral Catheterization. R. Robinson, Chicago.
- 90 How to Study the Heart. E. Marshall, Louisville.
- 91 Gastroptosis. J. J. Moran, Louisville.
- 92 *Vapor Method of Anesthesia. J. T. Gwathmey, New York.

92.—See abstract in THE JOURNAL, Oct. 28, 1905, page 1359.

Denver Medical Times. January.

- 93 Intestinal Obstruction. T. H. Hawkins, Denver.
- 94 Id. F. L. Dixon, Denver.
- 95 Intestinal Obstruction from Carcinoma of the Cecum. C. B. Lyman, Denver.
- 96 Death of Hannah Greener, the First Victim of Chloroform. C. G. Parsons, Denver.
- 97 Radiology and Electrotherapeutics. G. H. Stover, Denver.
- 98 Experiences During the Russo-Japanese Naval War. S. Suzuki, I. J. N.

Kentucky Medical Journal, Louisville. January.

- 99 Present Status of Gastric Surgery, with Special Reference to the Treatment of Chronic Ulcer. L. Frank, Louisville.
- 100 *Gastric Ulcer—Its Causes—The Pre-Ulcer Stage. C. G. Lucas, Louisville.
- 101 *Gastric Ulcer—Its Diagnosis and Treatment. S. E. Woody, Louisville.
- 101½ Surgical Aspects of Gastric Diseases. A. Schachner, Louisville.

100 and 101. Id.—Nov. 4, 1905, page 1430.

St. Paul Medical Journal. January.

- 102 Injuries in the Vicinity of the Elbow Joint. J. E. Moore, Minneapolis.
- 103 Trachoma and Its Treatment. C. Williams, St. Paul.
- 104 Management of Acute Suppurative Otitis Media. L. A. Nelson, St. Paul.
- 105 Spastic Constipation. T. W. Stamm, St. Paul.

Albany Medical Annals. January.

- 106 Organization, Methods and Responsibilities in the Study of Medicine. A. Vander Veer, Albany.
- 107 Iridocyclitis. F. T. Clark, Westfield, Mass.
- 108 Malignant Ovarian Tumors in Children. J. L. Donbauer, Albany, N. Y.

Washington Medical Annals. January.

- 109 Eye Lesions of Syphilis from Standpoint of the General Practitioner. W. K. Butler, Washington, D. C.
- 110 Cheesy Tubercular Mesenteric and Retroperitoneal Glands in an Adult. D. S. Lamb, Washington, D. C.
- 111 Sarcoma of the Tibia. E. M. Hasbrouck, Washington, D. C.
- 112 Tuberculous Meningitis in an Adult. D. S. Lamb, Washington, D. C.
- 113 Lobar Pneumonia Followed by Meningitis. S. S. Adams, Washington, D. C.
- 114 Acute Yellow Atrophy of the Liver. D. S. Lamb, Washington, D. C.
- 115 Cases of Gastric Ulcer. T. N. Vincent, Washington, D. C.
- 116 Diphtheria of the Air Passages; Death by Asphyxia. D. S. Lamb, Washington, D. C.
- 117 Historical Account of the Installation of Slow Sand Filtration of the Potomac River Water for the City of Washington. G. W. Cook, Washington, D. C.
- 118 Diseases of the Indians, More Especially of the Southwest United States and Northern Mexico. A. Hrdlicka, U. S. National Museum.

Medical Herald, St. Joseph, Mo. January.

- 119 Points on the Management of Labor. C. B. Hardin, Kansas City.
- 120 Treatment of Patients After Abdominal Operations. D. Morton, St. Joseph.

St. Louis Courier of Medicine. January.

- 121 Tuberculosis in the Mississippi Valley. W. Porter, St. Louis.
- 122 Juvenile Glaucoma Simpler Associated with Myasthenia Grastica et Intestinalis. J. Green, Jr., St. Louis.
- 123 Treatment of Empyema. R. Hill, St. Louis.
- 124 Tumors of the Cerebellum. (Continued.) E. A. Babler, St. Louis.

Annals of Gynecology and Pediatrics, Boston. January.

- 125 Tubal Abortion. H. C. Conner, New York.
- 126 Hydatid Disease of the Ovary. W. T. Gibb, New York.

Colorado Medicine, Denver. January.

- 127 Loose Bodies in the Knee Joint. F. G. Connell, Salida, Colo.
- 128 Cases of Morphimism. J. E. Courtney, Denver.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal. January 20.

- 1 Treatment of Arteriosclerosis. J. Barr.
- 2 *Significance of Small Quantities of Sugar and of Albumin in the Urine. R. W. Burnet.
- 3 Clinical Estimations of Purin Bodies in Gouty Urines. I. Walker.
- 4 *Chenolaxis. J. O. W. Barratt.
- 5 Diagnostic Value of X-Rays. J. M. Davidson.
- 6 Lead Poisoning from Electrolysis of Water Pipes. G. A. E. Roberts.
- 7 *Action of Trypsin on the Living Cells of Jensen's Mouse-Tumor. J. Beard.

2. Significance of Sugar and Albumin in Urine.—Burnet thinks that it may be said that the presence of albumin in any appreciable amount in the urine is not normal nor physiologic, but that it does not necessarily imply coarse pathologic change, and that it does not necessarily mean that the existing disturbance of function is permanent or progressive. At the same time, it can not be denied that a certain number of patients who at first are rightly placed in the above category do later show signs of definite organic kidney disease. The presence of sugar in the urine in any appreciable quantity is abnormal; in the young it is of serious import, and, if persistent, is likely to lead to diabetes; in people past middle life, and especially in those of gouty type, it is of less consequence and usually yields to treatment more or less speedily, to recur,

however, in some cases, under conditions similar to those under which it first appeared. The presence of both albumin and of sugar in the urine indicates serious disturbance in the metabolic processes, calling for relief to the nervous strain which the patient may have been undergoing, and an adjustment as far as can be of his environment, but Burnett thinks that under favorable conditions these patients may continue in at least fair average health for many years.

4. **Chemiotaxis.**—Barratt summarizes his observations as follows:

1. Paramoecia pass readily into tubes containing acid and alkaline solutions of sublethal concentration, but pass still more readily into control tubes containing the same liquid as that in which the paramoecia are immersed.

2. Only negative chemiotaxis appears to be exerted by acids and alkalies on paramoecia. This negative chemiotaxis is marked in alkaline solutions of lethal concentration, and is slighter in acid solutions of lethal concentration.

3. There is no parallelism between (a) the lethal concentration of acids and alkalies for paramoecia, and (b) the chemiotaxis of paramoecia in respect of acids and alkalies.

4. The taxis of paramoecia is modified when these organisms are transferred from hay infusion to distilled water.

5. Chemiotaxis is not to be explained simply by reference to the acidity or alkalinity of the solutions employed. Mere change of concentration is an important factor in its production.

6. Negative chemiotaxis does not necessarily indicate that the liquid tested acts injuriously on the organisms employed.

7. **Action of Trypsin on Living Cells.**—Beard tested the action of trypsin on the living cells of a Jensen's mouse-tumor. Two minims of a 1.5 per cent. solution of trypsin in sterilized distilled water were injected on four different occasions in the course of ten days. One of the mice was then found dead and a postmortem examination failed to reveal any cause of death. The microscopic examination demonstrated that every cell of the tumor was degenerated, fully half of the cells being represented by shapeless masses of particles, probably the remains of nuclei, and all the rest were mere skeletons of cells. The somatic tissues of the mouth, as represented by the leucocytes and connective tissue cells, were quite normal. The second mouse received nine injections in twenty-two days. The mouse was then killed and the tumor was exposed. The growth was about the size of a lentil and the cells were all degenerated. Beard believes that at the time this mouse was killed its cure from the cancer was not far distant, and that even without further treatment the tumor would in all probability have been absorbed shortly. A control mouse died at the same time that the second mouse was killed. The tumor in this control mouse was as large as the terminal phalanx of a man's thumb. Beard says that no matter how often this experiment is repeated, even with smaller doses of trypsin, the like results will be obtained. He is convinced that the action of trypsin on the cancer cell is to pull down the cancer albumin and the cancer ferment (malignin) produced by this.

The Lancet, London.

January 20.

- 8 Practical Diagnosis of the Diseases of the Skin. W. Evans.
- 9 Bradycardia and Cardiac Arrhythmia Produced by Depression of Certain of the Functions of the Heart. J. Hay.
- 10 Relief of Certain Headaches by the Administration of One of the Salts of Calcium. G. W. Ross.
- 11 Surgery of the Common Bile Duct. B. G. A. Moynihan.
- 12 Primary Pneumococcus Peritonitis. W. C. G. Ashdowne.
- 13 Necrosis of the Entire Renal Cortex of Both Kidneys. H. C. Lloyd.
- 14 Acute Hemorrhagic Pancreatitis. G. R. Jeffrey.
- 15 Volvulus of the Ascending and Transverse Colon, with Unusual Complication. J. Phillips.

9. **Bradycardia and Cardiac Arrhythmia.**—Hay reports a case of bradycardia due to heart block. When the patient was first seen the block was caused by depression of conductivity; later the conductivity became practically normal and the block which persisted was found to be caused by depression of excitability. Atropin increased the frequency of the stimulus production, but had no influence on the power of conductivity. Sounds were heard during the diastolic phase of the ventricles; they were synchronous with the wave in the jugular vein caused by the systole of the right auricle. Hay thinks the assumption justifiable that the sounds were produced by the auricle in its systole, and that the depression of the conductivity and excitability of the myocardium was probably due to impaired metabolism, secondary to an insufficient blood supply, the result of arteriosclerotic changes in the coronary arteries. The excitability of the musculature was unstable,

possibly as a result of nervous influences such as mental excitement.

10. **Calcium Salts as a Headache Cure.**—Ross believes that we have in the salts of calcium a rational and effectual means of relieving headaches which are due to a deficient coagulability of the blood. He prefers the lactate of calcium to the chlorid because the latter is unpalatable, often nauseating, and occasionally not absorbed. The following has proved a satisfactory mixture:

| | | |
|-----------------------|--------|----|
| Calcium lactatis..... | gr. xv | 1 |
| Tinct. capsici..... | m. ½ | 30 |
| Aque chloroformi..... | 3i | |

Sig.: To be taken three times a day before noon.

If more convenient, fifteen grains of lactate of calcium dissolved in one-third of a tumbler of water may be given in place of the mixture. If the lactate of calcium is not obtainable, fifteen grains of the chlorid and one ounce of camphor water may be substituted. The ingestion of one or two pints of milk a day is advisable though not essential. Ross says that in a number of cases, usually of the less severe type, considerable relief is felt in from half to one and a half hour after the administration of the calcium salt. In others the relief comes during the first twenty-four hours of treatment, while in almost all the cases the headaches disappear after the fourth day. He reiterates that it is advisable to continue the administration of calcium for three weeks in the milder type of headaches, and for six weeks in the more severe types. Ross has treated 48 patients according to this method.

12. **Primary Pneumococcus Peritonitis.**—Ashdowne reports a case of acute peritonitis due to a primary infection by the diplococcus pneumoniae. With the exception of pain after meals for the past six months she had been quite well until fourteen days previously, when she was seized with abdominal pain, accompanied by diarrhea and vomiting. This she attributed to an error of diet and took some brandy, which relieved the pain. She remained in bed for two days, taking no solid food, and on the third day had recovered sufficiently to resume her household duties. Two days before admission to the hospital she was again seized with acute abdominal pain and diarrhea; she felt sick but did not vomit. She again treated herself, but as the symptoms continued on the following day she consulted her medical man, who gave her medicine which stopped the pain and diarrhea for the time. In the evening the pain returned and the abdomen commenced to swell. The abdomen was distended, more so above the umbilicus than below it. Movement was impaired, but there was no muscular rigidity. There was some tenderness over the right iliac region, but no evidence of a tumor. The abdomen was resonant except over the hypogastrium. Liver dullness was present. Rectal examination revealed nothing abnormal. The patient's menstrual periods were regular and one was then in progress. The heart and lungs were normal. Her temperature was 103.6 F., the pulse was 128, and the respirations were 32. The distension was most marked in the upper part of the abdomen and there was tenderness on pressure in this region, but the lower segment was less distended and there was no tenderness. The iliac fossæ were quite free from swelling or tenderness. On opening the abdomen in the middle line above the umbilicus, the stomach, which was greatly distended, presented. A quantity of pus was found between the stomach and the liver with thick fibrinous deposits on the surface of the viscera in the vicinity. The pus was odorless, creamy, and of a greenish-yellow color, with numerous flocculi floating in it. Some of this was collected and set aside for bacteriologic examination. The fibrinous deposits adhered to that membrane was seen to be lusterless, reddened, and in places inclined to bleed. No lesion of the stomach, duodenum or gall bladder could be found. A second opening was made below the umbilicus and a similar condition was found there. The appendix, intestines and uterine appendages were each in turn examined, but without finding anything to account for the onset of the condition. The peritoneal cavity was then sponged out and well flushed with sterilized water. A Keith's tube was placed in the pelvis and the rest of the incisions were closed. The patient recovered from the anesthetic, but in the evening be-

came very restless and later delirious, and died early the following morning. The pus removed at the time of the operation contained encapsulated diplococci and a pure culture of diplococci was obtained from it. There were no other organisms present.

Journal of Tropical Medicine, London.

January 15.

- 16 Fit and Unfit Persons for Residence in Warm Climates. W. Hartigan.
- 17 Mode of Infection in Malta Fever. E. H. Ross.
- 18 The Mosquito Worms of Trinidad and Their Real Nature. A. J. B. Duprey.
- 19 Is Malta Fever Peculiar to Malta? La P. Phillips.

Semaine Médicale, Paris.

- 20 (XXVI, No. 2.) Les mesures sanitaires appliquées dans l'Afrique occidentale française. (See also item, page 444.)
- 21 La lithiase du cholédoque. A. Chauffard.
- 22 Les réflexes de la pupille. E. Venneman.
- 23 (No. 3.) L'exercice illégal de la médecine devant les tribunaux français depuis la mise en vigueur de la loi du 30 Novembre, 1892.
- 24 Le soufflet systolique de l'insuffisance aortique pure. M. Couto (Rio de Janeiro).

21. Lithiasis of the Common Bile Duct.—Chauffard gives an illustration of a calculus weighing 9 gm. (nearly 140 grains) extracted from the common bile duct of a man of 48; there was no trace of inflammation or disturbance in the other biliary passages. He has also had occasion to observe a second case of pure lithiasis of the common bile duct, and discusses the symptomatology, which is characteristic. Both his patients were permanently cured by surgical removal of the stone. In 50 out of the 72 cases on record the calculus was a large single stone, forming a cast of the dilated duct. The one illustrated was two inches long by more than three-fourths of an inch in width. It develops like thrombosis in a vein, suggesting, he says, "an actual choledochal biliary thrombosis." When the obstruction from the stone induces expulsive colic and fever from retention of bile, the pancreas is liable to become inflamed in turn. It reacts with progressive sclerosis or more acute lesions. Chauffard urges the necessity for diagnosing these cases of lithiasis of the bile duct before it reaches this stage. Prompt removal of the stone without wasting time in medical measures will save the patient these disturbances and dangers. The icterus in his two cases was very slight and intermittent, and the stools were only occasionally clay-colored. These fluctuations are due to the conditions of the walls of the duct. If they are swollen with inflammation there is more or less complete obstruction, but when they are not inflamed they stretch and allow bile to trickle through. The pain is not characteristic, but localized tenderness in what he calls the "pancreas-choledochus zone" may be instructive. This zone is the space between a line perpendicular to the umbilicus and a second line drawn from the umbilicus at an angle of 45 degrees to the first line. The zone in this angle does not reach quite to the umbilicus below and does not extend for more than 5 cm. along the slanting line. Experiments on the cadaver have shown that this zone corresponds to the head of the pancreas, traversed or skirted by the bile duct. The gall bladder is above and to the right, the distance between the gall bladder region and the zone being the length of the bile duct. Systematic exploration of this zone will generally reveal a point of extreme tenderness, referable either to the bile duct or to the pancreas. The fever in case of lithiasis of the bile duct occurs in spurts of high temperature, brief but frequent, suggesting the fever of icterus, and paralleled by hyperleucocytosis. His patient had lost 36 kilos (nearly 80 pounds) in ten months, suggesting the possibility of cancer. This decline in weight is probably due to the involvement of the pancreas in the process, interfering with pancreatic digestion. Secondary pancreatitis is especially liable to occur in lithiasis of the bile duct. This involvement of the pancreas can be determined by examination of the feces, revealing the lack of utilization of the fats ingested.

24. The Systolic Souffle of Pure Aortic Insufficiency.—Couto's article is based on personal experience and study of what has been written on the subject in Italy, Russia, South America and elsewhere. He argues that none of the explanations to date are correct, and gives diagrams which explain his concep-

tion of the phenomenon. He regards the two souffles heard in auscultation, one presystolic and the other diastolic, as the essential characteristics of pure aortic insufficiency. The organic cause of the first of these souffles resides in the alteration itself, which prevents the perfect closure of the semilunar valves during diastole. This presystolic souffle is due to the passage of a retrograde wave from the aorta into the ventricle, through the orifice of the aorta, during the occlusive phase of the systole.

Archiv f. Gynäkologie, Berlin.

- 25 (LXXVI, No. 3.) *Ueber das Zusammentreffen von Gravidität mit appendicitis und Typhlitis. H. Füh (Leipzig).
- 26 Ueber die Verlagerung des Coecums während der Gravidität in Rücksicht auf das Zusammentreffen derselben mit Appendicitis (displacement of caecum in pregnancy, in regard to coincidence of latter with appendicitis). Id.
- 27 Zur Aufklärung der Eklampsie. Zweifel.
- 28 Histologisches über das endometrium hypoplastischer Uteri. O. Schaefer.
- 29 Zur Therapie der Uterus-Ruptur. J. Eversmann.
- 30 Bakteriologische Verhältnisse in weiblichen Genitalsekreten. H. Natvig (Helsingfors).

25. Pregnancy Plus Appendicitis.—Füh has had occasion to observe 5 cases of this kind. From this experience and from study of the literature he concludes that appendicitis is a serious complication of pregnancy, especially on account of the tendency to recurrence. Recurrence was noted in 21 per cent. of the cases recorded. Monod and others advise removal of the appendix, as a rule, even when there are no symptoms, at the third or fourth month of pregnancy if the patient has ever had appendicitis. In case of incipient appendicitis in a pregnant woman, all agree that immediate appendectomy offers the only chance of cure. An important aid in differentiating appendicitis, he states, is the great difference between the temperature in the axilla and that in the rectum. In one of Füh's patients this difference amounted to from 1.9 to 2.6 Centigrade degrees. The anatomic conditions in pregnancy favor the evacuation through the vagina of an appendiceal abscess in the Douglas pouch. If there is too much danger of interrupting the pregnancy, the abscess can be opened through the rectum.

27. Eclampsia.—Zweifel found crystals of zinc paracetate in the urine of 17 eclamptic women. Lactic acid is a constant constituent of the urine in eclampsia. It is probably derived from the meat ingested, and he considers it responsible for the eclampsia. Everything seems to indicate that eclampsia is an acid intoxication. Lactic acid is a product of deficient oxidation. It was found both in the blood and in the urine of his eclamptic patients. Its appearance in the blood or urine is always an indication of morbid conditions. In one of the eclamptic women a large proportion of lactic acid was found in the blood during the attacks, but five hours after the last attack there was no longer a trace of it. In some cases a larger proportion of lactic acid was found in the blood of the fetus than in the mother's blood. Zweifel regards this as an argument in favor of immediate delivery at the first signs of eclampsia. The children, as a rule, do not seem to suffer from the maternal eclampsia. None of the children with lactic acid in the blood was born dead in his experience. The bag of waters should be emptied at once and delivery carried out under chloroform. It should not be forgotten that morphin in experimental research induces the appearance of lactic acid in the urine. Venesection is indicated and saline alkaline infusion (5 gm. salt and 5 gm. sodium bicarbonate to the liter of water) to neutralize the lactic acid in the blood and favor its elimination. Lemonade with sodium or alkaline citrates is also beneficial. The stomach should be emptied before pouring in the lemonade. The tube can be introduced through the nose at need. Diuretics are also useful, 40 drops of a saturated solution of acetum scillae or the like. He thinks the trouble is due to an excessive consumption of the oxygen in the body by the demands of the growing fetus. To supply oxygen is, therefore, the main indication. The shallow respiration of eclampsia does not allow of adequate intake of oxygen, and to insure deep breathing Zweifel applied electric stimuli (faradic) to the phrenic nerves. This transformed the type of respiration and the oxygen thus abundantly inhaled seemed to have a favorable action on the eclampsia. Restriction of meat during

pregnancy might reduce the formation of lactic acid. A vegetable diet seems more rational on this account. If pregnant women had their urine examined every two weeks for albumin, nephritis might be detected earlier. Some cases of eclampsia, however, develop without preceding albuminuria.

29. **Treatment of Rupture of Uterus.**—Eversmann summarizes the results of his own and others' experience in the statement that tamponing, with a compressing bandage, gives the best results. This should be regarded as the standard treatment under general circumstances. If operative treatment becomes necessary, total removal of the uterus by a laparotomy with suture of the serosa offers the best chances. His statistics embrace 170 cases.

30. **Bacteriology of Female Genital Secretions.**—Natvig's monograph fills 159 pages. It presents evidence in favor of the assumption that streptococci, living as saprophytes in the vulva, are liable to make their way into the uterus and to acquire virulence under these conditions. He knows of no instance of puerperal infection from this source, although he admits its possibility.

Archiv f. Verdauungs-Krankheiten, Boas', Berlin.

Last indexed page 163.

- 31 (XI, No. 6). ***Determination of Lower Outline of Stomach.**—Bestimmung der unteren Magengrenzen, mit bes. Berücksichtigung der Radiographie, Schille (Freiburg).
- 32 ***Magenschleim (stomach mucus).** E. Schütz (Vienna). (Concluded.)
- 33 ***Ueber die Sensibilität im Abdomen und über den MacBurney'schen Druck-Punkt.** G. Kellinz (Dresden).
- 34 ***Zur Kenntnis der Rectum-Carcinome nebst Bemerkungen zur Früh-Diagnose.** I. Boas.
- 35 **Comparison of Sedentary and Active Occupations in Respect to Effect on the Fastening of the Bowels and the Körperbewegung auf die Darmfunktion.** J. Merzbach (Brooklyn, N. Y.)

31. **Determination of Outlines of Stomach.**—Schille calls attention to the sources of error in determining the outlines of the stomach by inflation of the empty and percussion of the distended organ. All writers concur in stating that the normal stomach lies entirely above the umbilicus. When the stomach is distended with artificially induced gas it is forced downward, sometimes as much as 2 cm. below its normal outline when the person stands. Another source of error is when the transverse colon lies in front of the stomach. The colon is forced forward as the stomach becomes distended by the formation of gas. Rieder has recently published, in the *Fortschritte a. d. Gebiete der Röntgenstrahlen*, viii, No. 3, a fine collection of radiograms of the stomach and intestines. Schille's findings confirm them and Rieder's conclusions in every particular. Radiograms in case of not too corpulent persons throw light not only on the topography but also on the motor functions of the stomach to a surprising degree. In conclusion Schille warns that the repeated giving of bismuth should not be regarded as so innocent a matter as is generally assumed. To date no injury has been reported from its internal administration, but instances are on record of harm from its external use. In his tests he found that the findings of percussion, the patient standing, after a test meal, always coincided with the Röntgen findings.

32. **The Mucus in the Stomach.**—Schütz has been studying the pathologic variations in the secretion of mucus in the stomach. His observations were made one hour after a test breakfast, examining the stomach content obtained by expression. He also examined the rinsing water obtained after the stomach has been emptied and rinsed clean, and the stomach contents obtained by rinsing and expression of the fasting stomach. He tabulates the findings in 110 patients with various stomach affections on whom these three tests were made. In 52 per cent. of the cases the mucus was found in excessive amounts, while in the rest it was scanty or lacking altogether. The latter group included 9 cases of achylia, 8 of motor insufficiency, 7 of gastralgia, 9 of gastric neurosis, 4 of anacidity, 3 of hyperacidity, 1 of ectasia, 2 of chronic catarrh and 1 each of ulcer, subacidity, cicatricial stenosis of the pylorus, gastroscorrrhea, obstipation, nephrolithiasis, acute dyspepsia and icterus. In 28 cases of chronic gastric catarrh the mucus was found excessive at all three tests, as also in 6 cases of cancer of the stomach, in 1 of cancer of the liver and in 1 of ulcer.

The mucus was found excessive in the second and third tests alone in 10 patients, including 1 case of ectasia, 2 of motor insufficiency, 1 of gastroscorrrhea, 1 of chronic nephritis with dyspepsia, and in 3 of gastric neurosis. The mucus was found excessive only in the second test in 2 cases of motor insufficiency and in 1 of a gastric neurosis, and only in the third test in 7 cases, including 2 of subacidity and 1 each of subacidity, enteroptosis, hyperacidity, ulcer, neurosis and cicatricial stenosis. He reviews in detail the groups of these various affections, and believes that his research will establish the conception of catarrh of the stomach on a more solid foundation, although he does not attempt to draw any general conclusions at present.

33. **Sensibility of Abdomen.**—Kelling summarizes the conclusions of his extensive study of the subject as follows: It is necessary to investigate much more closely than has yet been done the conditions of sensibility in the region of the cecum. The sensibility of the skin must be distinguished from the tender points in the musculature and the latter from the tender points in the sacral hollow of the pelvis, and each and all should be compared with the symmetrical points on the other side of the abdomen. The tenderness at McBurney's point is purely nervous. At this point the nerves of the appendix correspond with those of the abdominal wall above, so that the condition of irritation in the sympathetic plexus of the region of the cecum induces hyperesthesia in the intercostal nerves and also at the places where the cutaneous nerves pass through the fascia. There is another tender spot in the sacral hollow of the pelvis, the ileocolic plexus, which may be hypersensitive and tender in case of essential irritative conditions, such as hysteria, neurasthenia, etc., or by radiation, as in case of appendicitis, colitis, cholelithiasis, etc. Hence tenderness in this region can not alone serve to diagnose appendicitis. Palpable anatomic findings are the only reliable basis for the diagnosis. For the differential diagnosis between appendicitis and cholecystitis, even icterus is not decisive except when it occurs without fever. Bacteria may be carried from the appendix into the liver and thence into the bile, and may thus induce cholangitis and cholecystitis. This is why icterus is not a rare accompaniment of appendicitis. It also explains the frequent combination of appendicitis and of subsequent cholelithiasis. When there is a striking lack of tenderness in the pathologic resistance and its vicinity, it is safe to assume that the sensation of pain, if it exists, is falsely located, and that it should be referred to the more centripetal sympathetic plexus or to the skin, and in the latter event to the symmetrical point opposite. In attacks suggesting appendicitis and requiring operation, special attention should be paid to the gall-bladder, particularly when the findings in the appendix are comparatively trifling. On the other hand, the appendix should always be investigated during an operation for gallstones. In cases suggesting appendicitis or a gallstone affection, without decided palpable findings, the diagnosis should be left in suspense, but the treatment should be that of the more serious affection, namely, of appendicitis. The article is illustrated and the various points of special sensitiveness in the abdomen are described and the anatomic conditions explained.

34. **Early Diagnosis of Rectal Cancer.**—Boas addresses this article to the general practitioner, expatiating on the latter's responsibility for the disaster sure to follow the overlooking of malignant disease in the rectum until the time for operation has passed. In 80 per cent. of his 83 cases of carcinoma of the rectum the growth was inoperable when first seen. In several cases some physician had made a supposed careful examination of the rectum and yet had failed to discover it. In other cases the physician had detected the growth, but had not insisted on immediate operation, and the patients had wavered long before consenting to an operation, possibly wasting time with quacks in the interim. Boas does not have much hope of effectually influencing the public by newspaper articles, lectures, etc., along the lines of Winter's anticancer campaign (mentioned in the news columns of the last volume). When people are well they pay slight attention to warnings or admonitions and soon forget them. He suggests as a more effectual measure that physicians should have printed on the backs of their prescrip-

tions a series of warnings in regard to the first signs of cancer, and what should be done, similar to Winter's warning in regard to cancer of the uterus. Patients getting the prescriptions would read the warnings on the back. When people need prescriptions their minds are turned to thoughts regarding disease, consequently the warnings would make more impression than at other times and places. He says that if a hundred physicians would take this step, others would soon follow, and the constant reiteration of the warnings at an impressionable period could not fail to impress the public in time. Cancer of the rectum occurs, according to his experience, in about a third as many cases as cancer of the stomach (245), and nearly as often as cancer of the esophagus (100). As the food has been digested and assimilated in the upper part of the digestive tract, persons with cancer of the rectum do not grow thin and weak but may present a blooming aspect and gain in weight. Habitual constipation was noted in the history of 15 and hemorrhoids in 22 of his patients. The classic triad of symptoms, tenesmus, obstruction or diarrhea and blood and mucus in the stools, are not observed at first in every case. In some of his patients the first symptoms were violent colic pains recurring at intervals in the abdomen or stomach, and in other cases pains in the region of the sacrum or coccyx. Such cases suggest the necessity for examination of the rectum, even when the symptoms point to other organs. In certain cases bleeding from the rectum was the first symptom to attract attention. The bleeding simulated hemorrhoidal hemorrhages, especially as it so frequently affects persons already subject to hemorrhoids. The same applies to tenesmus, which is supposed to be frequent in case of hemorrhoids. His experience has been rather against this assumption. Tenesmus with hemorrhoids is more intermittent than that accompanying cancer of the rectum. In every case of tenesmus it is the physician's first duty to determine its cause. In at least 25 out of his total of 83 cases the tenesmus was not observed until from one to twenty-four months after the appearance of other symptoms, thus being a tardy symptom in two-thirds of the cases. The course of rectal cancer may be long or short. In 24 cases in which the first symptoms had been noted only from three to twelve weeks before, he found 6 in which the growth was already inoperable, and only 2 of the patients survived the operation for any length of time. On the other hand, he encountered cases in which the symptoms dated from months and even two or three years before, and yet the growth could be successfully removed. Five of his 83 cases of rectal cancer were in diabetics, which he regards as more than a mere coincidence. In diagnosing this condition he calls attention to the odor of the underclothing in cases of rectal cancer, and it may be possible to detect spots on the underclothing with the same fetid, not fecal, odor. Another important sign is the stools. The patients complain of several watery discharges during the day, sometimes containing hard lumps of feces. In case of ordinary enteritis or nervous diarrhea, the amount passed is comparatively large, but with rectal cancer the amounts are remarkably small, mere spurts. Boas never fails to inquire as to the character of the passages in every case of diarrhea that he encounters. Another diagnostic point is that the diarrhea in these cases persists unmodified by dietetic or vigorous medicinal measures. When he learns this fact in regard to a patient, he never wastes a moment before examining the rectum for cancer. Still another sign of this "false diarrhea" is that the intestines are not empty, but contain lumps of feces, especially in the descending colon and the sigmoid flexure. This confirms the diagnosis of primary obstipation. Simple chronic diarrhea empties the intestines, but does not cause an increase in the indican in the urine. In the false diarrhea from obstruction, indican is found abundantly. Examination of the urine may therefore prove suggestive. Even if nothing suspicious can be found in the rectum after digital and ocular examination, the search should not be abandoned until after the sigmoid flexure has been investigated also. The prognosis may vary with the variety of the cancer, and hence microscopic examination is advisable. If the growth is inoperable, palliative treatment gives more gratifying results in these cases than with cancer elsewhere. The physician should aim to keep the general health good, to keep the passage open and to avoid everything that might irritate the carcinoma.

Ordinary diet, including beans, peas, etc., is appropriate; only irritating hulls, skins, etc., must be avoided, the articles of food being prepared universally in the form of purées. Sugar, acids, salts, fats and oils should predominate as in any anti-constipation diet. Mild laxatives are also required. The tenesmus must be kept under control by these measures, with opiates as the last resort. He refers to one patient kept in comparative health for four years by these means.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

- 36 (XXXI, No. 51, December 21.) •Therapie der Psoriasis. E. v. Düring.
- 37 Ueber Typhus-Kulturen die sich den Immunitäts-Reaktionen gegenüber atypisch verhalten. A. Besserer und J. Jaffe.
- 38 Die Methylin-Tyrosin-Methode für elektive Färbung der Bakterien im Schnitt (staining of bacteria in sections). Saarhoff.
- 39 Ueber die Anwendung von Neutuberculin (Bacillenemulsion). Krause.
- 40 Die Priorität in der Tuberculin-Herstellung und Anwendung. C. Spengler (Davos).
- 41 Ueber die Anwendung der Basteinseln und Kocherschen Operation in der Lelstenbruchtherapie (inguinal hernia). Hartynski.
- 42 Advantages of Dry, Iodized Catgut.—Trockenes Iod-Catgut. Herbold.
- 43 Ueber Goldscheiders Methode der Herz-Perkussion (Orthoperkussion). H. Curschmann und Schlayer (Concluded).
- 44 Apparat für Clinical Tests of Taste.—Zur Untersuchung des Geschmackssinnes für klinische Zwecke. W. Sternberg.
- 45 New Inventions of Interest to Physicians.—Erfindungen aus dem Gebiete der Medizin und der öffentlichen Gesundheitspflege. G. Just.
- 46 •Dangers from Cheap Metal Spoons.—Anfechtbares Essgeschirr. H. Steinhell.
- 47 With the German Red Cross in Manchuria.—Das Lazarett der Deutschen Vereine vom Roten Kreuz in Charlbin. A. Brentano. (Concluded).
- 48 (No. 52.) •Die Behandlung der Herz-Neurosen (of heart). T. Rumpf (Bonn).
- 49 Serum Treatment of Scarlet Fever.—Serum-Behandlung des Scharlach. E. Schick (Feierich's clinic, Vienna).
- 50 Negative Influence of Chlorin on Utilization of Lime in Infants.—Einfluss des Chlors auf die Kalkausnützung beim Säugling. A. Schütz.
- 51 Ueber Primär-Effekt am Lid mit Demonstration von Spirochaeten. Kowalewski.
- 52 Invaliden-Versicherung und Tuberculose (insurance against sickness). M. Wagner. (See news items, page 442.)
- 53 Statistics in regard to Physicians in Germany.—Die Aerzte Deutschlands im Jahre 1905. G. Helmman.

36. Treatment of Psoriasis.—Düring thinks that not enough attention is paid to hydrotherapy in the treatment of psoriasis, especially sweat baths with dry heat. Douches, alternating hot water for two minutes and then cold water for two seconds, are another useful measure. The sensitiveness of the skin must be carefully determined for each individual case to gauge treatment. As a rule, he prefers oil of cade to chrysarobin and pyrogallol. The patients should be moderate in the use of alcohol, coffee and tobacco, and should avoid a "too nourishing" diet in general as tending to favor eruptions. Internal treatment of psoriasis he considers uncertain, useless and even harmful in some instances. Arsenic sometimes aggravates the symptoms or induces others. The salicylates and iodine internally have proved ineffectual in his experience, although he acquired the impression in some cases that potassium iodid internally promoted the action of external medication. He warns against thyroid treatment. In regard to prognosis he is quite pessimistic. The treatment which may cure one patient may have no effect on another; in a third, the old eruption may subside, but another follow close, and in a fourth it may transform a torpid process without subjective symptoms into an annoying and generalized affection, disturbing the general health.

43. Ortho-percussion.—Curschmann has found Goldscheider's technique of ortho-percussion extremely reliable, the results coinciding invariably with the findings of ortho-radiography. He has the patient recline and percusses during shallow respiration. The results have proved so reliable that he recommends this method of percussion as a valuable aid in diagnosis. In combination with the determination of the absolute dullness it allows a more complete oversight of the heart and main arteries than has hitherto been attainable in any way.

46. Dangers from Cheap Metal Spoons.—Steinhell gives an illustration of five spoons which he found used daily in cooking. The cheap alloy of which the spoons was made easily crumbled or melted off, so that fragments of the spoons dropped into the food and were probably eaten with it.

48. **Cardiac Neuroses.**—In this clinical lecture Rumpf describes the various neuroses affecting the heart and the means of relieving them. In all forms the entire mode of life must be regulated; eating, drinking, sleep, exercise and gymnastics as well as mental activity must all be supervised. Injurious influences in the daily life must be eliminated after careful study of the anamnesis. He thinks a moderate altitude is better for heart neuroses than the seashore. In attacks of tachycardia, deep breathing while reclining may be found useful, both in curing and in preventing an attack. Ice to the heart has also done good service in some cases of heart neurosis on a hysterical or neurasthenic basis. One group of heart neuroses which prove especially obstinate to treatment are those that follow over-exertion or trauma, especially excess in sports. The most essential symptom in this class is the great acceleration of the heart action at the slightest exertion, perhaps at the slightest movement. There is also weakness, with pallor and sometimes loss of weight. These cases require rest in bed for weeks or months, with care as to nourishment, avoidance of alcohol, coffee, tea and tobacco. Carbonated saline baths and cautious respiratory exercises while reclining, vibration massage and electricity may be tried. The psychic treatment is of great importance. The trouble may last for months, if not for years, and frequently entails arteriosclerosis. There may have been dilatation of the heart, but it has subsided by the time the physician sees the patient, and foci of degeneration may have been left which escape diagnosis. Sometimes a heart neurosis of this kind follows an injury of the skull. In several cases of this kind he has observed consecutive arteriosclerosis develop in a few years in young persons who never had used tobacco or alcohol to excess. So long as no organic affection can be detected in these traumatic cases they must be classed as neuroses. Cardiac neuroses may be induced from the digestive tract by direct mechanical influences, and further by reflex phenomena from the most varied points in the abdomen. The false angina pectoris and tachycardia that may result should be treated by emptying the stomach and intestines. Lavage of the stomach will relieve or possibly a glass of warm water in the morning before eating, followed by shaking the stomach through the abdominal wall. Drinking tepid water and putting the finger in the throat will induce a desire to vomit, which empties the stomach as the pylorus opens at the same time. The diet should be regulated. Coffee, especially after meals, is liable to interfere with digestion, prolonging the stay of the food in the stomach and favoring abnormal putrefaction. Tea may be allowed, but not in sufficient amounts to distend the stomach. Another form of neurosis is observed in obese patients whose weight has been rapidly reduced, allowing undue movability of the heart.

Wiener klinische Wochenschrift, Vienna.

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- 54 (XVIII, No. 37.) Ueber das konstante Vorkommen der Sprochta pallida im syphilitischen Gewebe bei Menschen und Affen (in man and monkeys). R. Kraus and A. Prantschhoff.
- 55 Ueber Komplikationen der Uterus-Myome speziell Uterus-Stiel-torsion mit schwerer innerer Blutung. R. v. Steinbüchel.
- 56 (No. 38.) Der klimatische Kur-Ort Meran (health resort). E. Rochelt.
- 57 *Zur Behandlung des inoperablen Uterus-Karzinoms. R. Chrobak.
- 58 Zur Aetiologie der Tetanie. F. Chvostek.
- 59 Zur Frage der Kontinenz nach sakraler Rektum-Exstirpation. v. Elschberg.
- 60 *Schädeldefekt und Epilepsie (from defect in skull). A. Fraenkel.
- 61 Ueber kleine Rupturen an der Corneo-Skleralgrenze (junction). E. Fuchs.
- 62 Technik der Exstirpation Part of Heart Adjacent to Sternum.—Ueber die Bedeutung der Hunden Stoffe der roten Blutkörperchen für den Mechanismus der Agglutination (lipoid substance of red corpuscles). E. Lazar.
- 63 (No. 40.) Zur Färbung von Exsudat-Zellen (stainlog). N. Jacle.
- 64 2 Fälle von Meningitis Cerebrospinalis epidemica, nebst einer Reihe von Nasensekret Untersuchungen gesunder Personen (J. Horcicka and W. Poldoe).

- 70 Place of Formation of Antibodies.—Zur Frage der Bildungs-stätte der Antikörper. R. Kraus and J. Schiffmann.
- 71 (No. 41.) *Importance of Lymph Glands as Protecting Organs Against Tuberculosis.—Die Bedeutung der Lymphdrüsen als Schutz-Organ gegen die Tuberkuloseinfektion. J. Bartel.
- 72 *Zur Aetiology, Pathologie und experimentellen Therapie der Syphilis. R. Kraus.
- 73 Ueber den Cytorhytes Iodis. L. Waelisch.
- 74 Ueber die Spezifität der Erythro-trizipuline. A. Klein.
- 75 (No. 42.) Ueber experimentelle Therapie der Dysenterie. R. Kraus.
- 76 Untersuchungen ueber die sekretorischen Vorgänge am weiblichen Harnen („soft palate“). L. Retzl.
- 77 Zur Frage der Tuben-Menstruation. R. v. Steinbüchel.
- 78 Zur Pathologie der Plazental-Gefäße und des Amnion. J. Hofbauer.
- 79 Welche Rolle spielen die Lipide bei der Sublimithämolyse? L. Dietze and J. Sella.
- 80 Ueber das sogenannte Dysenterie-Aggressin. R. Dörr.
- 81 (No. 43.) *Zur Pathogenese des „Diabetes insipidus.“ R. Schmidt.
- 82 *Symptomatologie der sekundären Parotitis. K. Piehler.
- 83 (No. 44.) Tuberkulose-Infektion im Stützungsalters des Meer-schweinchens und Kaninchens (in suckling guinea-pigs and rabbits). J. Bartel.
- 84 Auftreten der Diphtherie im letzten Dezennium und ihre Sterblichkeitsverhältnisse (diphtheria in last decade). K. Zucker (Graz).
- 85 *Effekt des Diphtherie-Heilserums bei wiederholter Erkrankung und Infektion (recurring diphtheria). Id.
- 86 Zur Prophylaxis bei Diphtheritis. A. Scheiber.
- 87 Zur Serum-Behandlung des Scharlach. C. Zippenker.
- 88 (No. 45.) *Zur etiologischen Therapie der Syphilis. L. Spitzner.
- 89 Ueber Spirochäten Befunde in syphilitischen und anderen Krankheits-Produkten. M. Oppenheimer and O. Sachs.
- 90 The New „Infant Protection Station“ in Vienna.—Schutz-stelle des Vereins „Schnellungsschutz.“—B. Sperk.
- 91 *Death from Electric Accidents.—Der Tod durch Elektrizität. S. Jeilnek. (Commenced in No. 44.)
- 92 (No. 46.) Asthma bronchiale. Pleuritis.
- 93 Toxice Action of Tubercle Bacilli in Guinea-pigs.—Gifftwirk-ung von Tub.-Bazillen beim Meerschweinchen. O. Ball.
- 94 Erweichung bronchialer Lymph-Drüsen und ihre Folgen (soft-ening of glands). E. Kerner.
- 95 Simulation of Defective Vision.—Entlarvung einseitig simu-lierter Sehschwäche. L. Schmelchler.
- 96 (No. 47.) Meningitis carcinomatosa. W. Scholz (Graz). Two cases.
- 97 Sprochtrufen-Befunde bei Nosocomial-Gangrän in Unterschen-ken-Schneidwunden (leg ulcers). R. Polland (Graz).
- 98 4 Fälle von Fleck-Typhus (spotted typhus). A. Marcovitch (Triest).
- 99 Ueber interne Trethrotomie. G. Oesterreicher.
- 100 *Die Bedeutung der in der gräulologischen Praxis (passive hyperemia). R. Bauer.
- 101 Fall von Veronal-Vergiftung (poisoning). J. Geringer.
- 102 Active Immunization in Syphilis. R. Kraus (Reply to A. Braodweiner's „Versuche über aktive Immunisierung bei Lues“ in No. 45. See paragraph 72 above.)

57. **Treatment of Inoperable Cancer of the Uterus.**—Chrobak remarks that in inoperable cases of cancer of the uterus the condition can be relieved by a partial operation to a greater extent than is generally recognized. He has had a patient gain 77 pounds after a palliative operation on an ovarian cancer. He does not believe in telling the patient that she has malignant disease, preferring to persuade her to submit to an operation, possibly adding that treatment by other measures is not so sure of results and that if intervention be postponed it may come too late. He regards it as a greater satisfaction than the most brilliant operation when he has succeeded in winning the confidence of a cancer patient and has been able to keep her during the entire course of the disease unaware of its true nature and full of hope until death brought release. The physician should strive to ward off injurious influences and should vary the therapeutic measures, keeping hope alive. Curetting and canterizing the growth will frequently hold it long in check. His experience has confirmed Lomer's to the effect that the results are more favorable when there is fever afterward. There is certainly, he is convinced, a difference in the course of an open and a covered cancer. When he has covered the growth after an operation with a shield of mucosa, local recurrence was tardier than when it was left uncovered. Even when a palliative operation merely promotes cleanliness and rests the patient it is surely worth while. Martin had a patient live 54 months after curetting an inoperable cancer, Gebauer one who lived over five years, and Eyring had one who lived over three years. Chrobak performed 408 such palliative operations in his clinic between 1890 and 1900. In 1903, 7 of the women were still living, 2 after an interval of two or three years, 4 after three or four years and in 1 case of epithelioma of the cervix the patient lived eleven years after the palliative operation. Nine of the patients lived for three years, 4 for three or four, 2 for five or six, 1 for ten

and 1 for eleven years. In his private practice he had a patient survive for five years who required curretting of recurrences several times and was then lost to sight. In another case he curreted, in 1884, a carcinoma of the vaginal portion of the cervix encroaching on the vagina, in a woman of 32. The growth proved to be a soft, unusually vascular canceroid. Hemorrhage recurred a few months later, indicating a new scraping, and a recurring growth was curreted away in 1884. Since that date the growth has healed over completely, the patient is still in perfect health and has married a second time, although sterile in this latter marriage. In another case a carcinoma of the body of the uterus was curreted in 1888; there has been no recurrence to date. He has repeatedly kept patients in good health for six years by curretting at the first recurrence of symptoms, sometimes repeating the procedure eight or ten times on the same patient. These results are possible only in private practice. In the public hospitals the patients seldom return often enough, and if they learn the true nature of their trouble they are liable to resort to swindlers and quacks. He lays great stress on refraining from calling the scraping an "operation." The patient should be told that it is merely a harmless intervention which the family physician or the surgeon will possibly or probably have to repeat several times. The term "operation" frightens the patient too much, and she shrinks from a repetition of an operation. The family should always be fully informed in regard to the circumstances. In curretting he uses a large sharp spoon under general anesthesia, after careful disinfection, proceeding as rapidly as possible on account of the bleeding, which generally ceases when sound tissue is reached. He then takes a small sharp spoon and scrapes out the rest of the cancer in its remotest nooks, supporting the growth with the finger introduced in the rectum. When everything accessible has been scraped away he rinses and sponges the tissues dry and then cauterizes. He has used the actual cautery, but thinks that it does not penetrate into the crevices as well as a fluid caustic. The cancers which remained free from recurrence the longest were all cauterized with crude fuming nitric acid. He applies it on a stick or roll of asbestos, the asbestos fibers forming a brush, or with a cotton-wool stick. He never sprays the fluid, as it is liable to burn the sound skin or the physician's hands. Even the fumes are caustic and must be blown away. The seab is thrown off in two or three weeks, and granulating surface is left, whose healing can be promoted with iodine or silver nitrate solutions. Suspicious points can be treated again with the nitric acid or otherwise. There is always danger during curretting of perforating into the bladder, rectum or peritoneal cavity, and the operation should not be undertaken until visual inspection of the bladder or rectum has shown that there is no extensive cancerous infiltration of the dividing wall. Perforation into the peritoneal cavity is not so dangerous as is generally supposed if it is recognized at once and further intervention suspended. After the cauterization, dry powder scattered in the vagina or applied on gauze will help to dry up the discharge better than attempting to keep the vagina clean by injections of astringents or disinfectants. They tend to keep up the discharge. In his experience the best powder for such local use is a combination of iodoform with tannin or charcoal. In conclusion he urges that in such a case the physician should conquer his personal diffidence and strive to keep the patient in his charge. In changing her physician she is liable to learn the true nature of her trouble, which may nullify all the previous efforts to save the doomed woman from despair.

60. Bullet Wound of Skull and Epilepsy.—A young man witnessed the burning of his parents and in his grief seized a revolver and shot himself in the head. Splinters of bone were removed on several occasions afterward, as symptoms of transient paralysis and epilepsy developed, but two years after the accident a box fell from a height on the defect in the skull and severe chronic cortical epilepsy developed at once. The two places where there were gaps in the skull were closed with celluloid plates and the epilepsy vanished. The cure has been permanent for eight years to date.

63. Epidemic Cerebrospinal Meningitis. — Weichselbaum states that during an epidemic there is always a possibility

that a few cases may be encountered which do not belong to the epidemic class. It seems to be an established fact, however, that the great or protracted epidemics of cerebrospinal meningitis are always due to the *Diplococcus intracellularis*.

65. Cholera Vibrios Without Cholera.—The report of examination of cadavers of Mecca pilgrims has already been mentioned in these columns. In 6 out of 38 in which dysentery had been the cause of death, Prochnik found cholera vibrios without any evidences of cholera, past or present. Although harboring virulent cholera bacilli, the individuals had not become infected nor infected others, as not a case of cholera was known throughout the Mecca region during the season. The article is an interesting account by a medical man of the great Mecca pilgrimages. Prochnik is consul for the region and has charge of the sanitary regulations, with offices at Djeddah.

66. Fixation of Liver on Account of Cirrhosis.—Nikolic describes a case of alcoholic cirrhosis of the liver in which hepatoxy was done by Czerny. The patient succumbed almost immediately to hemorrhage from the stomach. The pressure of the heavy overhanging liver on the stomach had interfered with its circulation and compressed the pylorus. A patch of necrosis resulted with erosion of the gastroduodenal artery. A protruding portion of the cirrhotic liver lay over the patch of necrosis and acted like a plug for the eroded vessel. When the heavy liver was raised up and fastened to the abdominal wall this removed the stopper over the injured vessel and also removed the obstacle to the circulation. The result was the fatal hematemesis. In another case the postoperative diagnosis was round ulcer of the stomach, with incipient cirrhosis of the liver. Treatment was by posterior gastroenterostomy and hepatoxy, and the patient made a smooth recovery and was soon dismissed.

71. Lymph Gland as Protecting Organ Against Tuberculosis.—Bartel has been conducting researches to learn more about the incipient stages of tuberculosis infection and has arrived at various conclusions on the way. Among them is one to the effect that he can not be mistaken in assuming that the lymphocyte plays the principal part in the fight with the tubercle bacillus. The normal lymphocytes of an animal comparatively resistant to tuberculosis (sheep) are able to make virulent tubercle bacilli avirulent, which can then be injected into guinea-pigs without resulting infection. Long contact is required in the test tubes before the virulence is thus abolished, but this corresponds to the long period of incubation or latency of tuberculosis infection in general. The avirulent tubercle bacilli after contact with the lymphocytes lose their destructive and chemotactic properties, also the power of proliferating, and he believes that they will prove an effective vaccine material, inducing active immunity. He is convinced also that the lymphocyte-producing organs of animals thus actively immunized will elaborate a substance which will have an attenuating and inhibiting action on tuberculous affections in other animals. Further researches in this line are now under way.

72. Experimental Syphilis.—Kraus has been experimenting with syphilis in monkeys, treating it according to the technique of the Pasteur treatment of hydrophobia. His experiences have been limited, but the impressions derived were decidedly favorable.

81. Diabetes Insipidus.—Schmidt has been impressed with the constancy of constipation in the previous history of certain patients with diabetes insipidus and the remarkable subsidence of the polyuria when podophyllin was given. Defective skin functioning was another constant feature of the clinical picture. The artificial hyperemia induced by the drug in the intestines diverts the blood from the congested kidneys and gives the atonic kidney vessels a chance to recover their tone. Sweat baths may have the same kind of revulsive effect. Treatment of the cases of polyuria accompanied by diminished cutaneous function and constipation, should be directed to reducing the congestion in the kidneys resulting from loss of tone by the capillaries of the organ. Reduction of the intake of fluids will help, as also laxatives and diaphoretics. He prescribes 1 gm. (about 15 grains) of podophyllin in 40 pills,

ordering one or two pills a day, with physical measures to promote action of the skin, warm clothing, a southern climate, etc. He describes 3 cases in detail and reviews the literature.

82. Secondary Parotitis.—Pichler's 4 cases include 3 secondary to pneumonia and 1 following typhoid.

85. Recurring Diphtheria.—Zucker states that out of 2,323 diphtheria patients treated with serum, 21 returned after an interval of from one month to over five years with a second attack and 3 with a third. The course of the recurring disease was not essentially different from that of the first attack, and no difference could be observed in the effect of the serum treatment.

88. Etiologic Treatment of Syphilis.—Spitzer has applied on 15 syphilitic patients the technic advocated by Kraus above, treating them with a suspension of tissue from syphilitic sclerosis, diluted to .5 and 5 per cent. The technic was the same as for Pasteur injections in hydrophobia. Between eleven and twenty injections were made; 7 of the patients were apparently uninfluenced by them. Three others have presented no further manifestations of the syphilis during the ten and twelve months they have been under observation, and in the remainder the manifestations were very tardy in developing and were very slight. The injections were made from two to four weeks after infection. No inconveniences of any kind were observed from them, and the inguinal buboes in all subsided with striking promptness.

91. Death from Electric Accidents.—Jellinek concludes his monograph with the assertion that death from electric accidents in the majority of cases is merely apparent death. The menacing symptoms are frequently of a transient nature, tending to improvement, the vital functions in many cases being merely transiently disturbed or inhibited, and recovering if efforts at resuscitation are kept up long enough. The electricity has a double action. If the material changes are not too pronounced, the psychic phenomena may right themselves in time.

100. Passive Hyperemia in Gynecology.—Bauer gives an illustration of the speculum tube he uses for inducing passive hyperemia in the vagina. In one case of amenorrhea of two years' duration he succeeded in re-establishing menstruation by five applications of the speculum for five minutes at a time in the course of five days. A number of other patients were not benefited. The best results were obtained in chronic metritis. In one case an attempt to use the speculum before inducing abortion brought on an unusually severe hemorrhage.

101. Veronal Poisoning.—Geiringer states that since Kress published in the *Neue Therapie* for September, 1905, a list of cases of acute and chronic veronal intoxication he has had occasion to observe the following case: A woman of 30, who had twice been under treatment for neurasthenia, consulted her physician on account of a felon and asked for a hypnotic to enable her to sleep. He prescribed 1 gm. (about 152 grains) of veronal (diethylmalonylurea) in 20 powders, with instructions to take one powder on retiring. As she felt no effect from one powder, she took eight more, thus ingesting 4.5 gm. (about 68 grains) of the drug, and slept till morning. She awoke with nausea, vomiting, headache, somnolence and staggering gait, subnormal temperature, contracted pupils and sluggish pupil reaction. Twelve hours after taking the drug her stomach was washed out with a solution of 5 gm. of tannin in 5 liters of water (about 15 grains to the quart), the intestines were flushed high with water, and caffeine was injected and black coffee given as for morphin poisoning. Vomiting continued during the day, with some somnolence, but the patient rapidly recovered and was dismissed cured the fourth day. As at least twelve hours had elapsed before treatment was commenced, the veronal must have been very slowly absorbed. It is not very soluble in water. [In Hoppe's case of chronic veronal poisoning, reported in society proceedings in the *Deuts. med. Wochsft.* for June 15, and in the *Therap. Monatsh.* for August, 1905, a man, aged 23 years, under treatment for inebriety, was given occasionally 0.5 gm. (7.5 grains) of veronal to relieve insomnia. About seven weeks later the patient began to

sleep so soundly until midday that it was difficult to awaken him. He resorted to the use of 8 to 10 cups of strong coffee and tobacco smoking to keep active during the afternoon, and exhibited characteristics of drunkenness. It was ascertained that he had been taking daily from 2 to 3 gm. (31 to 46 grains) of veronal. In the discussion of this case Dr. Hoeffmann referred to 2 cases or the same form of chronic poisoning. One patient was a neurotic and showed marked psychic disturbance after comparatively moderate doses of the drug; among other symptoms, the speech was like that of a drunken man. The second patient, a former morphin-eater, used daily from 2 to 3 gm. (31 to 46 grains) of the veronal and showed marked excitement, with suicidal tendency, and the same peculiar speech. The diagnosis in this case was made principally from the appearance of drunkenness, especially in regard to the speech. Hoeffmann remarked that the condition was worse than that of the previous morphin addiction in so far as there were no free intervals.—Ed.]

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

MATERIA MEDICA, PHARMACY AND THERAPEUTICS, Including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, Mixture Directions for Prescription writing and Avoiding Incompatibility, also the Antidotal and Antagonistic Treatment of Poisoning. By S. O. L. Potter, A.M., M.D., M.R.C.P. Tenth Edition, Revised and in greater part Rewritten. Cloth. Pp. 914. Price, \$5.00 net. Philadelphia: P. Blakiston's Son Co., 1906.

AN ATLAS OF HUMAN ANATOMY. For Students and Physicians. By C. Toldt, M.D., assisted by A. D. Rosa, M.D. Translated from the Third German Edition and adapted to English and American and International Terminology by M. E. Paul, M.D., M.R.C.S., L.R.C.P. Sixth Section. G. Neurology; H. the Organs of the Senses. Cloth. Pp. 985. Price, \$4.75. New York: Reuban Company, 1904.

SQUIBB'S MATERIA MEDICA. A Complete Alphabetical List of all the Squibb products, embracing the articles in the U. S. Pharmacopoeia (8th revision), and the National Formulary, together with new and Old Chemicals, Pharmaceuticals and New Remedies in general use. 1906 edition. Part II. Cloth. Pp. 394. New York: E. R. Squibb & Sons.

THE PRACTICE OF MEDICINE. A Text-book for Practitioners and Students, with Special Reference to Diagnosis and Treatment. By J. Tyson, M.D. Fourth Edition, Revised and Enlarged. 240 illustrations, including colored plates. Cloth. Pp. 1305. Price, \$5.50 net. Philadelphia: P. Blakiston's Son & Co., 1906.

I. BIRDS FROM MINDORO AND SMALL ADJACENT ISLANDS. II. NOTES ON THREE RARE LUZON BIRDS. By R. C. McGregor. Publication of Department of the Interior Bureau of Government Laboratories. No. 34. October, 1905. Paper. Pp. 31. Manila: Bureau of Public Printing, 1905.

TRANSACTIONS OF THE MISSISSIPPI STATE MEDICAL ASSOCIATION. Thirty-eighth Annual Session held at Jackson, April 19-21, 1905, with Report on Medical Topics, Roll of Members, Constitution and By-laws. Cloth. Pp. 250. Mississippi: Journal of the Mississippi State Medical Association.

SURGICAL TREATMENT OF CHRONIC SEPARATION OF THE MIDDLE EAR AND MASTOID. By S. Oppenheimer, M.D. Illustrated by 46 half-tone plates, containing 64 figures and 27 key plates, etc. Cloth. Pp. 425. Price, \$6.00. Philadelphia: P. Blakiston's Son & Co., 1906.

RELATION OF PUBLIC SCHOOL TEACHERS TO CORRECTIVE GYMNASIUMS. By G. B. Affleck, Director of Physical Training State Normal School, Cedar Falls, Iowa. Paper. Pp. 16. Price, 10c. Boston: Published by the American Gymnasia Co.

PROCEEDINGS OF THE CONNECTICUT MEDICAL SOCIETY, 1905. One Hundred and Thirtieth Annual Convention held at Hartford, May 24-25. Published by the Society. Cloth. Pp. 588. Bridgeport, Conn.: Press of the Farmer Pub. Co., 1905.

TRANSACTIONS OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA. (The State Board of Health) Organized, 1847—Meeting of 1905; Montgomery, April 19-22. Cloth. Pp. 587. Montgomery, Ala.: Brown Printing Co., 1905.

TWENTY-THIRD ANNUAL REPORT OF THE State Board of Health of Indiana, for the Fiscal Year ending Oct. 31, 1904, and Statistical Year Ending Dec. 31, 1904. Cloth. Pp. 282. Indianapolis: W. R. Burford, 1905.

PATENT FOODS AND PATENT MEDICINES: Two Lectures by R. Hutchison, M.D., F.R.C.P. Second edition. Paper. Pp. 47. Price, 1s. net. London: J. Bale, Sons and Danielsson, Ltd., 1906.

AUGUSTUS'S MANUAL for the Settlement of Accident and Health Claims. By C. H. Harbaugh, M.D. Flexible Leather. Pp. 304. Price, \$2.00. New York: The Spectator Company.

A MANUAL OF PHARMACY for Medical Students. By M. F. De Lorme, M.D., Ph.D. Cloth. Pp. 206. Price, \$1.00 net. New York: The John C. Lindsay Co., 1905.

TRANSACTIONS OF THE LACKAWANNA COUNTY MEDICAL SOCIETY. Vol. I. Scranton, Pennsylvania: J. M. Wainwright, Editor, 1905.

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Original Articles

THE PHYSIOLOGIC AND LEGAL STATUS OF THE FETUS IN UTERO.*

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The two most important events connected with a life-history are its beginning and ending.

Embryology has persistently sought to discover and to interpret the earliest manifestations of the former, while pathology, with equal tenacity of purpose, has endeavored to ascertain the causes and incidents of the latter. So far as the beginning of a life-cycle is concerned, embryology has thoroughly established the doctrines of gamogenesis and agamogenesis, the former being the rule among the higher orders of plants and animals, the latter among the lower orders. Reproduction among human beings must, therefore, obey the law of gamogenesis; hence, two ancestors—male and female—contribute to the origin of every new member of the human race, the contributing elements being spermatozoon and ovum, respectively.

While these germ-cells possess inherent vitality and motor power, especially the spermatozoon, neither one can separately and alone evolve itself into a higher or more complex morphologic entity. Put the two together, however, under favorable conditions, and a new unit results, one capable, under proper environments, of evolving itself into a fully-developed human being, that is, the new unit represents all of the potentialities of which the future adult becomes the outward and visible expression.

In contributing the germs they respectively furnish, the male and female have done all they can do toward the creation of the new unit and toward its endowment with physiologic and psychologic functions similar to their own. From that time forth the new being, possessing all of the attributes of living bioplasm—motion, absorption, sensation, and fission, or multiplication—must be the architect and builder of its own body. True, for nine months the female performs the essential and hospitable function of hostess, and generously supplies the young, and presumably welcome, guest with oxygen, inhaled through her own lungs; with food, elaborated in her own digestive system, and with warmth supplied by her own blood, but in fulfilling these high functions she is simply furnishing the material, the brick and mortar, so to speak, out of which the young builder must erect its own corporeal superstructure.

In the work going on, the part played by the female corresponds with the office of brick and mortar carrier,

that by the young builder, with the office of skilled artisan, who takes hold of the materials brought and puts them together in the shape and form of a human body. The new being as it grows and develops is not the passive result of work done by the physiologic forces of the female, but is an autocbthon, using, however, very refined material furnished by the hostess. The principle is precisely the same as one that prevails in social life. A hostess places dishes, delicious and wholesome, before her guests, but is powerless to force them to partake thereof; they must, by their own volition, take hold of and appropriate the food brought within their reach.

Science does not forbid, on the contrary justifies, the belief that, could the fertilized ovum, before it has formed attachments to the womb in which it receives its fertilization, be transferred without violence to another womb in a similar condition to the first, its career of growth and development might proceed undisturbed. Indeed, could the transfer be made to an artificial womb, or incubator, in which the conditions were identical with those of the natural womb, its growth and development might still proceed undisturbed. The conjunction of spermatozoon and ovum must, therefore, be a great biologic event, one that endows the newly-formed unit with physiologic functions and psychologic attributes; indeed, makes it, in a qualified sense, an independent human being. Although the powers of this new being are feeble, its potentialities are great, the evolvment of which constitutes the growth, development, and achievements of its life-history.

The cardinal postulate I desire to emphasize is that the vitality, the life-force, and the physiologic functions of the new being reside within itself and not in the hostess. As has been said, the latter sends blood to the fetus, freighted with food and air, but she is powerless to force it to accept either; the new being eats because it is hungry and breathes because it feels the need of oxygen, both acts being vital efforts of its own. Soon after receiving its endowment of physiologic functions the new comer settles down in its velvety and temporary home, prepared by the proliferating lining of the maternal womb, and dominated by an instinct, yea, an intelligence, coeval with its own corporeal origin, proceeds to differentiate itself into bone, sinew, tendon, muscle, blood vessels, viscera, brain, and nerve, and with the skill of a consummate artist fashions these in miniature of an adult human being, the highest type of animal life. The fetus performs these physiologic functions by virtue of its own vitality and power, originally derived, it is true, from the two parental germs, but when these have been consolidated into a new unit—a tertium quid—a self-acting and, in a qualified sense, a self-sustaining human being has been created.

At the end of nine months the silent and unseen artist has filled his temporary home with his living self, whereon the hostess by means of forces marvelously

*Read in the Section on Obstetrics and Diseases of Women of the American Medical Association at the Fifty-sixth Annual Session, July, 1905.

scientific and practical ushers him into the outside world as a plump and rosy baby. When was that baby born, a few minutes ago or nine months ago? Science and logic give one and the same answer. If birth means the act of coming into life, as the dictionaries tell us, unquestionably the baby under discussion came into life nine months ago, and at the end of that period simply changed its domicile. Why not, then, abolish the term conception, which is liable to be more or less misleading and confusing, especially to the lay mind, and substitute for it the more scientific and correct term, birth? This done, then, the one term, delivery, either premature or at full term, would adequately express the transition of the child from intrauterine to extrauterine life. Besides, the adoption of this nomenclature would help to clarify the entire subject of fetal life and would lead to the enunciation of definite, inflexible, and absolutely correct principles of jurisdiction applying thereto. If the baby in question is a living human being when delivered, was it not a living human being the day before, the month before, six months before, eight months and twenty-seven days before? Can a point of time betwixt conjunction of the parental cells and the delivery of the child be fixed before which it did not possess the nature of a human being and after which it did possess the nature of a human being? Did its nature undergo any change between the time at which conjunction of the male and female germs occurred and that at which the baby appeared in the outside world? Was not the nature of the baby the same from the beginning to the ending of its uterine life? Was it not from first to last simply a question of the growth and development of one and the same being, and after the completion of the period of uterine life will it not continue to be a question of the growth and development of one and the same being up to physical maturity?

With these questions answered in the affirmative, as they must be, we are forced to concede that when in the red-hot furnace of congeniality two germs—male and female—are brought together that fuse themselves into one, a new being, crowned with humanity and mentality, comes into life. If this be true, does not the new being, from the first day of its uterine life, acquire a legal and moral status that entitles it to the same protection as that guaranteed to human beings in extrauterine life? Indeed, should it not receive greater protection, for the reason that to the nature of a human being it adds the condition of utter helplessness, a condition that should appeal in mute, but sublime eloquence to the manhood, the womanhood, and, above all, to the motherhood, of those who can shield and protect it? Lives there a man or woman who would assault and slay a little, laughing, prattling babe? If that be a crime from which the coldest-blooded villain would recoil, how much more a crime to assault and slay an innocent babe quietly sleeping in what should be an impregnable fortress—a babe whose voice is hushed and can not be raised in piteous cry for mercy or for help!

Objection to the use of the terms, birth and delivery, in the senses suggested, might be raised on several grounds: First, that it would involve the date of every birth in more or less uncertainty; secondly, that the fact of a birth could not be certainly known for four or five months after it had occurred; thirdly, that no practical benefit would result from the adoption of the proposed nomenclature. Admit that these objections are entitled to more or less weight, yet, when compared with the ad-

vantages that would accrue from the change of nomenclature proposed, the objections dwindle into insignificance. A simple formulation of the advantages will be sufficient to force conviction of the utility of the proposed nomenclature:

1. It would be essentially and scientifically correct to locate birth where and when it actually occurs, in spite of the fact that several months would usually elapse before it could be known that a birth had certainly taken place.

2. It would place a pregnancy, from the first day of its probable occurrence to its termination, on the high legal and moral grounds it deserves to occupy.

3. It would dignify the position of the *fetus in utero*, and would establish beyond all doubt or confusion the right of the fetus to the same protection, moral and legal, as is accorded to human beings who have completed the period of their uterine existences.

4. It would unify the terms, fluxion, abortion, and miscarriage, under the one term, premature delivery; then, two expressions, premature delivery and delivery at full term, would cover the entire subject.

5. It would enable lawmakers to enact clear and definite laws for the protection of the *fetus in utero*, which laws, jurists and juries could administer without doubt or confusion.

6. It would have a strong tendency to promote virtue and to prevent crime, and to build up in every community a positive demand for the protection of human life at its tenderest and most helpless period; it would tend to educate the people on a subject in reference to which they stand in great need of education and would thereby save the lives of many innocent and undelivered babes.

If the argument thus far be sound and tenable, does not the legal status of the fetus become clear and fixed? It is not strange that before science had ascertained the steps and stages of reproduction the law providing for the protection of the fetus should have been inadequate, but after these steps and stages became definitely established no inadequacy on this point should have prevailed. The common law is conspicuously defective in its provisions for the protection of the fetus. The following quotations on this point are made from the American and English Encyclopedia of law: "According to some authorities, it never was an act punishable at common law to commit abortion with the consent of the mother, provided it was done before the child became quick; but others are not disposed thus to restrict the criminal act, and hold that it may be committed at any stage of pregnancy. If the abortion was committed after quickening, it was punishable only as a misdemeanor. If done without the woman's consent, the act was held to constitute an aggravated assault."

Inasmuch as the common law was wholly inadequate for the protection of the fetus it became imperative that this defect should be supplied by statute law. Quoting from the same authority cited above, it is gratifying to find the following statement: "The statutes enacted on this subject in most of the states fail to draw any distinction between the commission of the offense, or attempt at commission, before and after the quickening of the child in the womb, making it a felony in either case. But some states still retain the distinction, punishing the act or attempt more severely when done after quickening. In Michigan it is essential that the child be quickened. The means denounced by the various statutes are the unlawful or malicious supplying, or ad-

ministering to a pregnant woman, or causing or procuring to be taken by her, any drug, poison, substance or noxious thing, or unlawfully using or causing to be used any instrument or other method whatsoever, with intent to procure or cause an abortion."

The statutes on this subject recognize the right of a physician to produce an abortion in the interest of the mother. The question arises: Should this right be exercised? Without undertaking to discuss the various conditions under which the exercise of this right might be considered, the broad proposition is laid down that the occasions on which it would become imperative to sacrifice the life of the child to save that of the mother are extremely rare. With the two great resources of rectal alimentation and Cesarean section at command, it is believed that practically every pregnancy can be safely carried to a point at which the life of the child may be saved. The methods and means of maintaining nutrition by rectal alimentation have been so perfected that the production of abortion, or of premature delivery, for gravid nausea should rarely or never be required. At all events, by this resource the woman ought to be carried to the point of certain viability of the child before premature delivery is resorted to. For deformed pelvis surgery, with its tremendous advances in skill and technique, offers in Cesarean section a resource for saving the life of the child, and at the same time of jeopardizing to such a small degree that of the mother, that it should be universally employed in such cases. Dr. L. L. Hill, a surgeon of distinction in my state, and fully informed on these questions, furnished me recently the following statistics applying to Cesarean section: "1. Zweifel performed 76 Cesarean sections with 1 death. (J. Whitridge Williams, professor of obstetrics in the Johns Hopkins University, 1903.) 2. In 1903 J. Whitridge Williams collected the reports of 335 cases of Cesarean section by various operators, with a mortality of 6.87 per cent. 3. Not a single death of a mother occurred in 11 Cesarean sections recently performed at Johns Hopkins Hospital. 4. The mortality in Cesarean section should be about the same as that resulting from operations for simple ovarian tumor."

Without pursuing this discussion further, I submit to this Section the following propositions, and invite an expression of judgment thereon, not only by the individual members, but by the body:

1. The conjunction of male and female germs constitutes, from a scientific standpoint, birth.
2. The term conception should be abolished and that of birth substituted therefor.
3. In dealing with all stages of pregnancy, even the earliest, physicians should realize the extreme gravity of the condition, and should never condemn to death a fetus, however young, without the maturest consideration, and without calling to their aid the highest professional authority within reach; in a word, without carrying the case to the nearest and wisest medical supreme court accessible.
4. The principles herein contended for should be impressed on the members of the profession, taught to medical students and promulgated widely among the people.
5. Medical men should interest themselves to see that the statutes of their respective states are ample for the protection of the *fetus in utero*.

DISCUSSION.

DR. H. O. MARCY, Boston, said that his opinions correspond with those of Dr. Sanders. He believes that the conclusions

should be emphasized most positively. A physician may induce an abortion because he believes that the life of the mother is more valuable than the life of the fetus, but he should try to conserve the life of both to the best of his ability.

DR. W. H. SANDERS declared that it was not stated in the paper that abortion should never be brought about, but that it should be the result of very mature consideration and after consultation with the highest and wisest and most experienced authorities within reach.

STUDIES IN ROENTGEN RAY DIAGNOSIS OF CHEST DISEASES.

JAMES E. TALLEY, M.D.

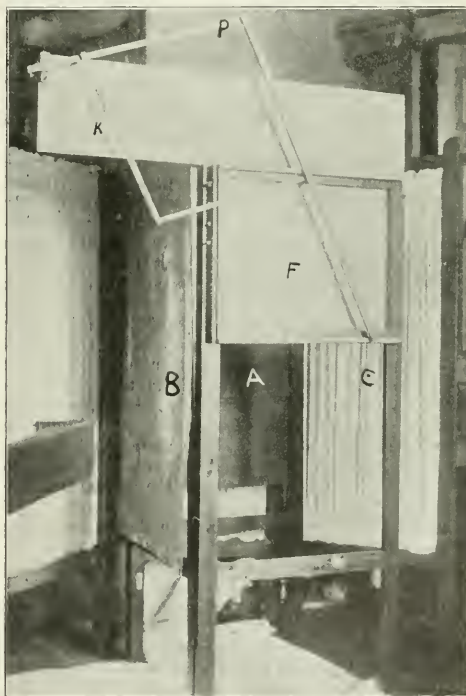
AND

WILLIAM S. NEWCOMET, M.D.

PHILADELPHIA.

I.

The use of the Roentgen ray as an aid in the diagnosis of chest diseases has by no means received the attention that it justly merits. No doubt its neglect has been principally due to the fact that the expense is still a factor, and at the same time the danger from burns, which lately has been so grossly magnified, has deterred many who would have otherwise given their sanction, if not direct co-operation.



When the x-ray first came to be used, it seemed as if it was to be generally adopted for routine examinations in diseases of the chest, mainly through the use of the fluoroscope, but during the excitement many methods of examination were advised that consisted of so much detail that it served more to repel than to at-

tract those who were only passively interested. For instance, methods were advised to measure the density of pulmonary consolidations by such means as graduated metal scales, of different sorts, i. e., one layer of metal superimposed on another, different thicknesses of wire, or different sized perforations in a sheet of metal, and it was soon found that the personal equation was such a great factor that, generally speaking, they were found to be useless, and we hear very little about them. Besides the element of personal equation, other facts entered into the cause of error by the use of such apparatus.

The fluoroscope itself was soon found to be a rather fickle instrument. This was caused in the most part by its degeneration, or variation in the salt from day to day. At the same time the variation of the x-ray tube, darkness of the room, the length of time the examiner has allowed his eyes to become accustomed to the darkness, etc., all enter into the cause of error, if not most minutely considered.

But as this field became more developed, it was found that the minute definitions were best studied from the radiograph, and these must be made by an exposure of a few seconds, or else the movements of the chest will destroy all that is to be gained. These are best made without the use of intensifying screens, as they also tend to destroy detail.

Previous to the introduction of these rapid plates it was found that we could study greater detail in the chest with the fluoroscope, and at the same time it was well known that it was an easy matter to overlook a fracture of a bone with this same instrument; this was easily explained by the fact that the fluoroscope lacks minute definition, and when it was necessary to expose a chest five or ten minutes for a picture we obtained even less detail. Yet the fluoroscope still has some use, for even from the best plates, with all possible technical imperfections eliminated, we are unable to study the movements of the different organs and their modifications in disease; at the same time we can not obtain a view of the parts from several different positions in rapid succession, and these points alone open up a field which give a great degree of usefulness.

The objection to the use of the fluoroscope is the risk of burn, and this must be carefully considered and the greatest precaution must be taken for both patient and physician. The former is likely to be given an acute burn, which is by no means agreeable, while the latter is more likely to suffer from what might be termed a chronic burn, which is more insidious and less active, though in the end the result is likely to last a lifetime, if not to terminate the existence of the individual.

To obviate this accident, we have devised a simple screen for the protection of the operator, and at the same time it is used as a recording apparatus. The screen is made of wood in three sections, each section about 24 inches wide and 6 feet high. These hinge together with the ordinary L hinges, so they can be taken apart for convenience and stored. Each section is made to hook rigidly at right angles with its fellow; thus if a fourth side was added it would form a square-shaped pyramid. By leaving one side open the patient can easily be placed in position or removed as desired. Two sides of the screen are covered with metal; thin sheet lead is best. In one is a movable window for the fluoroscope; and it might be here stated that the fluoroscope should be large enough to give a shadow of the whole chest without being moved. Small fluoroscopes

are useless and even dangerous. The third side is not covered with metal, but simply with black paper to enclose the x-ray tube and thereby lessen the light in the room, and at the same time to act as a frame for measurements and plumb lines used for centering the x-ray tube. The fact that no metal is on this side lessens the danger for puncture. The side directly opposite has the frame for the fluoroscope adjustable for different positions, depending on the patient's condition. Over the fluoroscope is placed a piece of plate glass, which is transparent to light rays, but blocks the x-ray to a great extent. At the same time it serves another purpose, in protecting the screen from being scratched by the point of the pantograph, which is used for recording the conditions as they exist. The pantograph is firmly attached to the same side of the screen on a soft piece of wood, so that paper can be easily placed under the pencil by a few thumb tacks. The tracing on the glass over the fluoroscope will be thus easily recorded, about one-sixth its natural size, which is very convenient for records. It is best to have this instrument attached to the side, not to the protecting connecting side, as it will lessen the danger of the operator's coming in the range of the active ray.

To minimize the amount of danger to the patient a cardinal rule must be adopted not to expose the body to the ray longer than is consistent with a thorough examination and not to re-examine at too close range; second, to use only enough energy to penetrate the body, which is much less in a dark room than in one only semi-dark, and at the same time the eye must be accustomed to the darkness; third, to keep the x-ray tube at least a foot from the body, and 18 inches is still better. Besides lessening the danger of burn, there is also less distortion of the shadows on the screen. Unfortunately, in heavy subjects it will be found that 18 inches is too far away for a good penetration. The use of a large fluoroscope that will cover the whole chest is here again explained.

II.

Though we have examined a considerable series of cases, a large proportion of which Dr. Musser has put at our disposal from both his ward and his private practice at the Presbyterian Hospital, we do not claim to add anything to the general principles and findings as set forth by others in the same field. We simply wish to add our testimony as to the usefulness of this means of diagnosis in thoracic diseases, to mention our simple means of securing records of fluoroscopic shadows, which Dr. Newcomet has described and pictured above, and to refer to a few cases where this method has shown its superiority either in point of time or precision, or both.

The drawbacks to the fluoroscopic work are the necessity of doing it at night to insure a sufficiently dark room, and the pavilion system of hospital construction, which renders difficult or impossible the examination of many acutely ill patients. The Roentgen examination must be considered a supplementary means of diagnosis and its findings interpreted solely in connection with the data obtained by the history and all other means at our disposal. For instance, a shadow showing involvement of a part of one lung may mean tuberculosis, pneumonia, pleurisy, loculated effusion or new growth, and only the history of the case and the other means of diagnosis enable us to say definitely which it is. Thus used, it will put inspection on a level at least with percussion in pulmonary disease. In fact, inspection.

as represented by both fluoroscope and skiagraph, when brought into direct contrast with percussion, in many conditions appears to us to have a decided advantage. It is but the outcome of the higher development of the sense of sight, as compared with the sense of touch, in the ordinary individual. A pneumonia or tuberculosis beginning deep in the chest may be revealed by the x-ray examination before other signs and symptoms are conclusive. A not infrequent type of case is like the following: A woman of 30, anemic looking, troubled with cough and recurring diarrhea, was examined by us. Her general appearance, the cough and the family history strongly suggested tuberculosis, but there was no sputum in which to seek tubercle bacilli and no evening fever. A systematic examination of the chest on two occasions by the ordinary means gave no satisfactory evidence of consolidation, and it seemed necessary to accept the enteritis as probably the only cause of the trouble so far; but it failed to explain the cough satisfactorily. The Roentgen examination with the screen at first showed only a suspicion of a darkening at the level of the inferior angle of the left scapula. Three weeks later, on her return from an outing, this area had increased and was now recognizable by compression and auscultation. In her case the x-ray gave a clue to the spot on which to center the attention before the examiner had been keen enough to light on it by other means.

About a year ago, when typhoid was rather prevalent, a girl of about 18, whose mother had a fibroid process in one lung and whose brother had had incipient tuberculosis, developed a moderate fever after feeling more or less ill for two weeks. A quick and definite decision was imperative, as a journey to the South Pacific had been arranged and the time for sailing was at hand. All known means of differential diagnosis were used except the Roentgen, which, in the light of later experience, would probably have been the most useful. Largely because of the strong family predisposition and the failure of any further typhoidal symptoms to develop, she was allowed to sail. On her return, as she had not gained, and as the right upper lobe now showed slight jerky inspiration, she was subjected to the Roentgen examination. The number of enlarged lymph glands lying beside the middle shadow, which were evident even on the screen, showed at once where the trouble was from the first, and had we used the x-rays at that time we should probably have sent her off with less misgiving. In fact, the detection of enlarged mediastinal glands has seemed to us one of the most useful provinces of the x-ray. In children it is specially applicable because of their thin chests, though we have used both skiagraph and skiagram successfully and frequently with adults. In no class of cases has it served us better than in making an early diagnosis of secondary involvement of the mediastinal glands coming on after the removal of the breast for carcinoma. Within a few weeks in two quite corpulent women, each of whom had a breast removed less than two years ago, by means of skiagrams, we have been able to give a positive diagnosis at a time when the only symptoms were apprehensive nervousness, some pain and slight dyspnea. That we were right the further history is unfolding. At present one case has some facial cyanosis, and the glands of the other are evident to percussion now that we know where to seek most carefully. In Hodgkin's disease we have been able to detect by both screen and skiagram the continuation of the enlarged glands of the neck into the thorax.

As said before, in acute diseases like pneumonia, we have not been able to examine cases as a routine measure. However, a method which presents to the eye both the shadow and the extent of consolidation both before and long after it is discernible by auscultation and percussion, and which alone shows the impaired movement of the diaphragm, is specially serviceable in atypical cases like central and senile pneumonia.

In pleurisy with effusion, the revelation to the eye of the dark shadow with its movable level, the displaced heart and the blotted-out diaphragm on the affected side, must add precision to the diagnosis.

Dr. John M. McLean has very kindly just furnished us a case of new growth of the thorax in a young man for examination. The case had been diagnosed by several physicians at first as pleurisy with effusion, as the signs were typical of that condition. The Roentgen examination gives a picture like a large effusion, with wide displacement of the heart. Two points differentiate it from diffusion. First, at rest the dark shadow at the right continuous with the heart gradually decreases in density toward the left. Second, on full inspiration the mass lights up irregularly, one or two areas being quite translucent.

As an example of the usefulness of this method in the exact location of pathologic lesions, we may cite a case of interlobar empyema following pneumonia, which we were able definitely to locate as lying posteriorly between the right upper and lower lobes.

Nowhere does the screen give livelier satisfaction than in the study of the heart and great vessels of the thorax. Here the fluoroscope shows the living, pulsating organ, while the skiagraph reminds one of a composite photograph, the sharpness of outline being lost because of the movement of pulsation. This is lessened in the instantaneous skiagraph, but the screen alone will show us the moving heart. The shape, size and position of the heart we have been able to determine by the skiagraph in at least two cases where the muscular development was so tremendous as to prevent entirely the casting of a sufficiently distinct image in the screen. In these cases, both men, the marked muscularity as well as fat, made percussion and even auscultation of comparatively little use. The absence of shadows suggestive of aneurism, and the normal position of the heart, with greatly increased transverse diameter, taken in connection with the history of the case, made dilatation due to excessive exercise the most probable explanation of the dyspnea and arrhythmia. The examination of the heart by the screen after outlining it by percussion shows the relative limitation of percussion and reveals the greater accuracy of the outline made by the pantographic arrangement above described. Since the heart lies comparatively near the screen, the shadow is relatively accurate, and any increase or decrease in size or change in position can easily be recorded by pantographic tracings at intervals, the technique being constant.

A neurotic young woman from Dr. Mitchell's service was referred to us for examination by Dr. Cornell. There was a history of spells of dyspnea at intervals, which seemed too genuine to be considered simply hysterical. The heart when examined by the usual methods showed only a pulmonic systolic murmur, which was considered functional. There was nothing in the pulmonary, cardiac, renal or blood examinations to explain the attacks. The fluoroscope showed the small-

est heart that we have ever seen in a woman of her weight and physique. Evidently it was a case of congenital hypoplasia. There was enough cardiac energy for existence, but no reserve for the requirements of an ordinarily active life. That anyone would have diagnosed the condition satisfactorily by percussion we doubt. The form of the heart in the organic lesion takes a certain type in one's mind. The wider transverse diameter of the mitral lesions and the elongated shadow of the aortic lesion are really reducible to definite diagrams. The constant darkening of the pulmonary reflex in mitral disease as compared with aortic disease is a diagnostic point between the two conditions. The obstructed pulmonary circulation is the cause. The distended right auricle would come into prominence more often were it not for the fact that in just the conditions where it is most overfilled (except emphysema) the pulmonary shadow is deepest and obscures the auricle. A rather thin boy of ten years afforded us the most prominent left auricle that we have seen. The lesion was evidently mitral insufficiency, but the fullness of the left auricle and the depth of the sulcus between auricle and ventricle we had never seen so marked before both in skiagraph and on the screen. A natural deviation of the heart, as well as an over-filled auricle must have been the explanation, as in mitral disease ordinarily no such marked auricular shadow was seen. Changes in position of the heart could not be better demonstrated than in some four cases of mitral diseases with secondary tricuspid insufficiency and enlarged left lobe of the liver. The lateral enlargement of the heart was conspicuous, but the wide change toward a horizontal position supported by the diaphragm and left lobe was remarkable. That the so-called apex could be so far displaced as to cause a diffuse pulsation well up toward the axilla and beyond the anterior axillary line could be understood when a goodly part of the left ventricle was seen to strike the thorax wall at each beat. With the recovery of compensation under rest and digitalis the heart assumed again more nearly the vertical position on full inspiration.

The number of aneurisms at our disposal has been small, but their fluoroscopic study helpful. In at least two cases we have noted an unusual projection to the left of the descending part of the arch of the aorta. They suggested dilatation of the aorta or small aneurisms, though there were no reasons for suspecting either. In one case the thorax was normal, in the other there was fibroid tuberculosis of the right upper lobe. A possible explanation is that the solidified lung offered less opportunity for the vessels to sink into its substance in inspiration. They interested us as illustrating that the part of the descending aorta visible on the screen varies, and one should not be misled into pronouncing such variations aneurisms. In a case of aneurism of the descending aorta there was enough enlargement of outline in pulsation to differentiate it from other possible consolidations, as enlarged glands. The skiagraph was better in detail, but of course could show no pulsation. In case of complete coagulation in the sac the simple movement due to pulsation without enlargement of outline in the shadow makes it difficult, if not impossible, to say decisively whether one is dealing with an aneurism or some other solid body, as an enlarged gland. In such cases the image is helpful, and the differential diagnosis, as before emphasized, must rest on the entire findings of the case.

An aneurism apparently beginning in the innominate

and involving the subclavian was shown by the skiagraph more conclusively than could have been done by percussion, to involve the aorta proper, thus putting operation out of the question.

In conclusion, we believe that a method that is rarely, if ever, inferior to other methods, usually at least equal to them and sometimes superior, is bound to have a wider recognition and use than at present.

THE EFFECTS OF OSMIC ACID INJECTIONS.

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Billroth and Neuber¹ were the first to employ osmic acid for neuralgia. They used repeated injections by puncture through the skin without exposure of the nerve; as many as twenty injections were given in some cases. Eulenburg² employing a similar method, had good results in only 3 out of 13 cases, which included neuralgias of the brachial, sciatic and trigeminal nerves. Schapiro,³ who used a 1 per cent. solution of osmic acid in glycerin and water, records 5 successes out of 8 cases at periods of two to six months after injection. Jacoby⁴ claims 8 cases of cure out of 18 sciaticas, and warns us that it is "dangerous to implicate a motor nerve." Cohen⁵ of Philadelphia used repeated injections (without exposure) into the sciatic nerve, using as much as 30 minims of a 1 per cent. solution. Ellis⁶ records the occurrence of some irritation after injection into a thumb in which pain followed a sprain. Mercer⁷ injected deeply and repeatedly into the sciatic region, with temporary relief and no ill effects. Franck⁸ obtained three successes by direct injection. Turner⁹ records a case of trigeminal neuralgia of two years' standing in which he injected into the infraorbital and after ten days relief followed, lasting six months, i. e., to the date when the patient was last seen.

Wright⁴ claims that most surgeons who have used osmic acid have injected it more or less at random without exposing the nerve trunk. He further states that such a method is quite sufficient to account for irregular and defective results and that it is also remarkable that so little is said of any ill effects, considering the very marked changes that osmic acid produces in the tissues, as shown experimentally by Frankel and as seen by himself in a case in which he used injections, and which, on removal of a portion of muscle which had been attacked by the acid, showed marked degenerative myositis. In all his cases Wright had exposed the nerve and had injected a 1.5 or 2 per cent. watery solution into the trunk or into branches; sometimes the injection had been both toward the periphery and toward the center, and the acid had generally escaped more or less freely into the tissues immediately around the nerve. Most of this author's cases were much too recent to justify any conclusion as to the permanent value of the method. He contends that it is impossible to eliminate the effect of the exposure and the mechanical results of manipulation and puncture of the nerve and of occasional unintentional section by the trephine.

He deems it clear that if this method is employed, the nerve should be fully exposed and not merely a

1. *Lancet*, 1885, vol. i, p. 1096.

2. *Lancet*, 1884, vol. i, p. 443.

3. *Lancet*, 1886, vol. ii.

4. *Practitioner*, 1889, vol. ii, p. 373.

5. *Lancet*, 1885, vol. i, p. 58.

6. *Year-Book of Treatment*, 1898, p. 76.

7. *Med. Soc. Trans.*, 1898, p. 357.

8. *Med. Chron.*, Manchester, 1903-1904, pp. 291 to 309.

chance injection made through the skin. Immediate results in his cases as regards both harmlessness and at least temporary relief quite justify the use of the plan before resorting to any such severe procedure as excision of the Gasserian ganglion. He preferred to expose and inject the trunk in some cases rather than to deal with the terminals only; and this is a matter that should be settled, since the severity of the one procedure is of course much greater than that of the other. It is also of importance to remember that delay in relief may occur; i. e., that pain may continue for some days or even longer after the injection and then pass off. So that it is not necessary to assume failure or to repeat the operation until time has been given to make sure that it is necessary.

Wright⁸ reports a case of a male, aged 33, who suffered for three years with pain in the testes. The right testis was removed, after which pain persisted in the left testis and cord. Osmic acid was injected into the tissues of the cord, with improvement. In another case, that of a male, aged 31, a postman, there was pain in the left heel, interfering with walking. The posterior tibial nerve was injected with osmic acid. The result was a failure. Wright several times injected the lingual and inferior dental nerve after trephining the lower jaw, with indifferent results. In the majority of these cases, there was return of pain after, at most, a few months. He secured temporary relief by injecting a 2 per cent. solution of osmic acid into the auriculotemporal nerve.

Up to November, 1899, W. H. Bennett⁹ had treated 12 cases of neuralgia, involving various nerve trunks, by injections of a 1 per cent. solution, using 10 to 12 minims for each nerve trunk. The symptoms were relieved in a few hours and in all cases the cure seemed to be complete. In Bennett's cases the median, popliteal, peroneal, and the branches of the trigeminal nerve were injected. Bennett believes that the results will be better if the injections of osmic acid be applied early in the course of the disease.

In a personal letter to Dr. J. B. Murphy,¹⁰ Bennett reviews 8 additional cases, making 20 in all. Of these 20 cases, 18 experienced complete relief. The time elapsing between operation and report, however, was, it should be noted, in several cases, very short.

Murphy¹¹ reported 14 cases in which osmic acid was injected, in a 1 to 2 per cent. solution, into nerve trunks for neuralgia. He found that the injections relieved the pain immediately and for a long period of time. He advised against injection into the superficial tissue for peripheral neuralgia, as the nerve trunks were easily located. He advised also against injection into a motor nerve or a motor nerve area and, therefore, never into a spinal nerve except in amputation stumps. Murphy found local necrosis of tissue about the injected nerve and even the wall of the foramen showed necrotic changes occasionally. The necrosis did not suppurate except in cases exposed to marked infection. In tic douloureux he advocates injection into all branches, including the palatine, lingual, mandibular, supra-orbital and infra-orbital. He calls attention to the fact that there may be two or three divisions of the supra-orbital and that each should be searched for and injected separately. He advises the use of a general anesthetic.

Judging theoretically from experience in resections

and ganglion operations, Murphy believes that the relief will not be permanent after the injection of osmic acid. Clinical experience up to date, however, particularly the experience of Mr. Bennett and himself, leads him to believe that many cases are really permanently cured. While he admits that time alone can determine the final results, he commends the injection of osmic acid because of its ease of application, its *nil* mortality and its immediate results. Murphy reports no injections of osmic acid for conditions other than tic douloureux. In these cases he injected osmic acid in a solution of 1 to 2 per cent., 10 minims into each trunk.

AUTHOR'S CASES.

I have injected osmic acid for neuralgia eleven times in nine patients, as follows:

CASE 1.—*History*.—Mrs. W., aged 71 years, was first seen on July 12, 1904. The case was one of typical intense tic douloureux involving the right side of the face. The first paroxysm occurred about ten years previously; subsequent attacks gradually becoming more frequent and more severe. Practically all of the many remedies recommended for the relief of this condition had been tried without benefit. For almost three months prior to the operation the pain had been excruciating, the attacks occurring with exhausting frequency. The whole right side of the face was exquisitely tender, particularly in the neighborhood of the infra-orbital and mental foramina. The tongue was sore and tender at all times, thus greatly interfering with speech. During attacks the pain most acute about the right angle of the mouth and the angle of the right jaw. Violent spasm of the buccinator was almost constantly present during the attacks.

Treatment.—A 2 per cent. solution of osmic acid was injected into the supra-orbital, infra-orbital and inferior dental nerves at the supra-orbital notch and the infra-orbital and mental foramina. The manner of operation was that practiced by Murphy. Ten drops of a 2 per cent. solution of the osmic acid were injected into each branch and two or three drops were forced into the perineurial fat of each foramen around the nerve. At the time of the injection of the osmic acid the nerves were drawn with very slight force from the foramina and held during the injection, but the trunks were not stretched as in the operation of neurectasy.

Result.—Up to the present time there has been no return of the pain since its abatement one week after the operation. During the first week several rather severe paroxysms occurred, these gradually decreasing in severity.

Urinalysis.—An interesting feature of the case was the nephritis occasioned by the elimination of the acid. The urine passed during the first twelve hours succeeding the operation showed nothing unusual; on the second day, however, nephritis resulted. There were no symptoms, either subjective or objective, pointing to its onset or presence, excepting the appearance of and findings in the urine. The patient did not complain of pain in the loins. Urine passed thirty-six hours after the operation showed the following: Reaction, very slightly acid; sp. gr. 1.036; color, dark claret. The specimen was centrifugated and the sediment composed a little over a quarter of the volume. The clear fluid above the sediment was light claret in color, the sediment being dark red. Examination of the fluid portion showed a small amount of albumin, with no sugar, bile or other abnormal substance present. Examination of the sediment showed it to be composed almost entirely of red blood cells. There were no casts, epithelial cells or pus cells. The red blood cells disappeared from the urine on the fourth day.

CASE 2.—*History*.—Miss L., aged 22, had suffered pain, paroxysmal in character, for four or five years. Only the area supplied by the inferior dental branch was involved. Paroxysms had increased in frequency during the last few weeks before operation until the pain was almost continuous, and the region of the lower jaw on the right side was very tender.

Treatment.—On Oct. 10, 1904, ten drops of a 2 per cent. solution of osmic acid were injected into the trunk of the

9. *Lancet*, Nov. 4, 1899.

10. *The Journal A. M. A.*, Oct. 8, 1904.

11. *Journal A. M. A.*, Oct. 8, 1904.

inferior dental nerve at the mental foramen, and a few drops were forced into the perineurial fat around the nerve.

Result.—Pain persisted for two weeks after injection and then abated and up to the present time has not returned.

CASE 3.—History.—Mr. B., aged 27, had had sharp pain for eighteen months in the area supplied by the supra-orbital and auriculotemporal branches. The superior maxillary and inferior dental trunks were not involved.

Treatment.—Open operation was refused and twenty drops of a 2 per cent. solution of osmic acid were injected subcutaneously along the course of the trunk and branches of the auriculotemporal nerve. Ten drops of a 2 per cent. solution were also injected at the supra-orbital notch.

Result.—There was almost complete relief from pain for a period of two months, after which the pain recurred, somewhat reduced in severity.

CASE 4.—History.—Mrs. S., aged 41, had had violent pain in the area supplied by the inferior dental and infra-orbital branches for eight years, the paroxysms gradually increasing in severity and in frequency.

Treatment.—On Feb. 15, 1905, ten drops of a 2 per cent. solution were injected into the involved trunks at their respective foramina.

Result.—Pain persisted in both regions without much abatement for ten days, after which it gradually disappeared and had not returned when patient died three months later of cerebral hemorrhage. There was no autopsy.

CASE 5.—History.—Mrs. H., aged 71 years, exhibited intense tic douloureux involving the right side of the face, the first attack having occurred twenty years previously, subsequent attacks gradually increasing in severity and in frequency.

Treatment.—On July 5, 1904, a 2 per cent. solution of osmic acid was injected into the supra-orbital, infra-orbital and inferior dental nerves at their respective superficial foramina of exit. Ten drops of a 2 per cent. solution were injected into each branch and a few drops spilled on the perineurial fat.

Result.—The pain persisted for two weeks, after which it abated and did not reappear until the following July one year later, at which time the pain appeared in the area supplied by the inferior dental branch only. Under cocaine anesthesia ten drops of a 2 per cent. solution of osmic acid were now introduced through a hypodermic needle directly into the large mental foramen, without incision, with the result that the pain disappeared for ten days, at the end of which time it reappeared in this branch. An incision was then made and the trunk injected, the pain continuing for one week, after which it practically ceased. The last operation in this case was done on July 25, 1905.

CASE 6.—History.—Mr. J., 55 years old, had suffered for about ten years with sciatic neuralgia and had tried all the more common medicinal methods of treatment of this disease.

Treatment.—Osmic acid in a 2 per cent. solution was injected subcutaneously at three points along the course of the sciatic nerve on two occasions, one month apart.

Result.—Each time there was slight temporary benefit. The effect was no more pronounced and no more lasting than that which had been produced by injections of them in two-grain doses in a similar manner in the same case.

CASE 7.—History.—Mrs. C., 35 years old, suffered with neuralgia, implicating the infra-orbital and auriculotemporal branches.

Treatment.—On March 12, 1904, osmic acid, 2 per cent. solution, was injected, ten drops over the infra-orbital foramen and ten drops subcutaneously in the area supplied by the auriculotemporal nerve.

Result.—Partial relief, lasting to the present time.

Cases 8 and 9 were simple subcutaneous injections of osmic acid, 2 per cent. solution, under cocaine anesthesia. The injection, in each instance, was into the infra-orbital and mental foramen. The results were unsatisfactory.

CHANGES PRODUCED IN THE TISSUES BY OSMIC ACID.

Frankel¹² of Hamburg found, experimentally in animals, destruction of axis cylinders and degeneration of

white substance with epineuritis and myositis as the result of his injections.

Murphy found, on microscopic examination, the most important changes at and distal to the point of injection. The degree of pathologic alteration varied to a considerable extent, dependent on the thoroughness of the injection and whether infection had resulted. At the point of injection there was always more or less staining of the perineurial and interstitial fat with the osmic acid. There was marked derangement of the fibers. The inflammatory reaction was always less extensive than might naturally be expected. An occasional area of focal necrosis, a few foci of round-cell infiltration, and here and there a leucocyte, attracted thither by the foreign substance, were all that was to be noted.

Distal to the point of injection the nerve trunk, in some cases, seemed atrophic, but there was no interstitial changes. Proximally, no changes were to be found except in the immediate vicinity of the injection. At and distal to the point of injection, there was more or less extensive fatty degeneration of the myelin sheath. This varied in amount from the involvement of all the fibers to degeneration of an occasional fiber only. Proximally, the myelin sheath was unaffected except immediately above the limit of blackening, which was the means of defining the extent of the injected area.

INVESTIGATION¹³ INTO THE NATURE OF THE TISSUE CHANGES PRODUCED BY OSMIC ACID.

EXPERIMENT 1.—Adult rabbit.

April 2, 1905.—Injected into deep tissues of left hind leg five drops of a 2 per cent. solution of osmic acid freshly prepared. Rabbit allowed to go free ten days. No paralysis developed. No clinical changes.

April 13.—Exposed left sciatic nerve and injected five drops of a 2 per cent. solution osmic acid directly into substance of nerve. Nerve and surrounding structures blackened. Skin incision closed with catgut sutures.

April 15.—Paralysis developed, which continued until rabbit was killed.

April 26.—Chloroformed.

EXPERIMENT 2.—Puppy, four months old.

August 13.—Injected left sciatic nerve with a 2 per cent. solution freshly prepared osmic acid. Five drops injected with very little loss of acid into surrounding structures. Nerve at once blackened by acid. Suture closed by catgut.

August 15.—Paralysis developed. Dog carried foot.

August 18.—Paralysis improved.

August 20.—Paralysis practically disappeared. Nutrition good.

August 20.—Dog killed by chloroform.

EXPERIMENT 3.—Small rabbit, three months old.

August 14.—Injected both sciatic nerves with a 2 per cent. solution of osmic acid, using five drops to each nerve. Some acid lost in surrounding tissues. Nerves and surrounding tissues blackened by acid at time of injection.

August 15.—Paralysis of both legs.

August 17.—Continued paralysis. Rabbit dragged legs. Nutrition poor.

August 18.—Rabbit died with paralysis persistent. Wounds not infected.

EXPERIMENT 4.—Adult rabbit.

August 14.—Left sciatic nerve injected with a 2 per cent. solution osmic acid. Nerve and surrounding tissues blackened.

August 16.—Paralysis developed.

August 18.—Paralysis continued. Sutures catgut still in situ. Wound infected.

August 20.—Rabbit killed by chloroform.

EXPERIMENT 5.—Large rabbit.

¹² Made, under the author's directions, by Dr. Everett E. Inglett.

¹³ Practitioner, 1885, vol. 1, p. 45.

August 13.—Injected both left sciatic nerves and cords of right brachial plexus with a 2 per cent. solution of osmic acid, using five drops in each injection. Skin sutured with catgut.

August 15.—Developed slight paralysis of left hind leg, which improved before rabbit was killed. No paralysis in fore leg.

August 20.—Rabbit killed by chloroform.

EXPERIMENT 6.—Large rabbit.

August 20.—Injected both sciatic nerves and also deep muscles of fore leg with a 2 per cent. solution of osmic acid. Wounds closed with catgut. Nerves blackened.

August 23.—Paralysis of both hind legs. No paralysis of fore legs. Wound on left hind leg infected.

POSTMORTEM, GROSS AND MICROSCOPIC EXAMINATIONS.—Parts of tissue were removed from the various organs, hardened in formalin, and stained after the following methods:

A. GENERAL STAINS.—1. Hematoxylin and eosin, the eosin being very heavy. 2. Borax carmine. 3. Van Gieson.

B. SPECIAL STAINS.—1. Nerves. a. Myelin sheath stains, aa. Paul Weigert's. b. Stain for neuroglia fibers. bb. Phosphotungstic-acid hematoxylin.

EXPERIMENT 1—GROSS ANATOMIC FINDINGS.

NERVE, LEFT SCIATIC.

| | At Site of Injection. | Proximal. | Distal. |
|------------------|-----------------------|----------------------------|----------------------------|
| Size..... | Diminished in caliber | Diminished..... | Diminished |
| Color..... | Very dark..... | Gradually becoming lighter | Gradually becoming lighter |
| Consistency..... | Softer than normal | Softer than normal | Softer than normal |

SURROUNDING TISSUES.

| | At Site of Injection. | Proximal. | Distal. |
|----------------------|-----------------------|-------------------|-------------------|
| Color..... | Dark brown..... | Shading to normal | Shading to normal |
| Infection..... | Absent..... | Absent..... | Absent |
| Inflammatory nodules | Present..... | Present..... | Present |

OTHER ORGANS.

The voluntary muscles were inflamed at the site of the injection and also proximally and distally. The heart, liver, lungs and spleen were normal.

MICROSCOPIC FINDINGS.

NERVE, LEFT SCIATIC.

| | At Site of Injection. | Proximal. | Distal. |
|-------------------------|-----------------------|--------------------|--------------------|
| Perineurial fat..... | Stained..... | Stained..... | Stained |
| Axis cylinder..... | Normal..... | Normal..... | Normal |
| Myelin sheath..... | Degenerated..... | Degenerated..... | Degenerated |
| Nodes of Ranvier..... | Stain less plainly | Stain less plainly | Stain less plainly |
| Caliber..... | Diminished..... | Diminished..... | Diminished |
| Focal necrosis..... | Present..... | Present..... | Present |
| Staining qualities..... | Less than normal | Less than normal | Less than normal |

OTHER ORGANS.

The heart showed myositis and round celled infiltration. The liver and spleen were normal; the muscles about the site of injection showed inflammatory changes.

EXPERIMENT 2.—GROSS ANATOMIC FINDINGS.

NERVE, LEFT SCIATIC.

| | At Site of Injection. | Proximal. | Distal. |
|------------------|-----------------------|-----------------------|------------------|
| Size..... | Diminished in caliber | Diminished..... | Diminished |
| Color..... | Very dark..... | Lighter in color..... | Lighter in color |
| Consistency..... | Softer than normal | Softer..... | Softer |

SURROUNDING TISSUES.

| | At Site of Injection. | Proximal. | Distal. |
|-------------------------|-----------------------|-------------------|-------------------|
| Color..... | Dark brown..... | Shading to normal | Shading to normal |
| Infection..... | Absent..... | Absent..... | Absent |
| Inflammatory thickening | Absent..... | Absent..... | Absent |

OTHER ORGANS.

The voluntary muscles were inflamed at all points; the heart showed myositis; the liver was normal.

MICROSCOPIC FINDINGS.

NERVE, LEFT SCIATIC.

| | At Site of Injection. | Proximal. | Distal. |
|-------------------------|-----------------------|-------------------|------------------|
| Perineurial fat..... | Stained..... | Stained..... | Stained |
| Fibers..... | Normal..... | Normal..... | Normal |
| Myelin sheath..... | Slight..... | Slight..... | Slight |
| degenerated..... | Very dark..... | Very dark..... | Very dark |
| Nodes of Ranvier..... | Stain poorly..... | Stain poorly..... | Stain poorly |
| Caliber..... | Diminished..... | Diminished..... | Diminished |
| Focal necrosis..... | Very slight..... | Very slight..... | Very slight |
| Staining qualities..... | Less than normal | Less than normal | Less than normal |

OTHER ORGANS.

The heart showed myositis; the liver was normal. Muscles at site of injection, showed inflammatory changes; striated muscle of opposite leg was normal.

EXPERIMENT 4.—GROSS AUTOMATIC FINDINGS.

NERVE, LEFT SCIATIC.

| | At Site of Injection. | Proximal. | Distal. |
|------------------|-----------------------|--------------------|--------------------|
| Size..... | Diminished..... | Diminished..... | Diminished |
| Color..... | Very dark..... | Lighter..... | Lighter |
| Consistency..... | Softer than normal | Softer than normal | Softer than normal |

SURROUNDING TISSUE.

| | At Site of Injection. | Proximal. | Distal. |
|----------------------|-----------------------|--------------|---------|
| Color..... | Dark brown..... | Lighter..... | Lighter |
| Infection..... | Present..... | Present..... | Present |
| Inflammatory exudate | Present..... | Absent..... | Absent |

OTHER ORGANS.

The heart, liver and spleen were normal.

MICROSCOPIC FINDINGS.

NERVE, LEFT SCIATIC.

| | At Site of Injection. | Proximal. | Distal. |
|-----------------------|-----------------------|--------------------|--------------------|
| Perineurial fat..... | Stained..... | Stained..... | Stained |
| Axis cylinder..... | Normal..... | Normal..... | Normal |
| Nodes of Ranvier..... | Stain less plainly | Stain less plainly | Stain less plainly |
| Caliber..... | Diminished..... | Diminished..... | Diminished |
| Focal necrosis..... | Absent..... | Absent..... | Absent |
| Staining quality..... | Less than normal | Less than normal | Less than normal |

OTHER ORGANS.

The heart showed myositis; the liver was normal; the muscle at site of injection was degenerated.

EXPERIMENT 5.—GROSS ANATOMIC FINDINGS.

NERVE, BRACHIAL PLEXUS.

| | At Site of Injection. | Proximal. | Distal. |
|------------------|-----------------------|--------------------|--------------------|
| Size..... | Diminished in caliber | Diminished..... | Diminished |
| Color..... | Very dark..... | Becoming lighter | Lighter |
| Consistency..... | Softer than normal | Softer than normal | Softer than normal |

SURROUNDING TISSUE.

| | At Site of Injection. | Proximal. | Distal. |
|----------------------|-----------------------|-------------------|--------------|
| Color..... | Dark brown..... | Disappearing..... | Disappearing |
| Infection..... | Absent..... | Absent..... | Absent |
| Inflammatory exudate | Present..... | Present..... | Present |

OTHER ORGANS.

The heart showed myositis; the liver, lungs and other muscles were normal.

MICROSCOPIC FINDINGS.

NERVE, BRACHIAL PLEXUS.

| | At Site of Injection. | Proximal. | Distal. |
|-------------------|-----------------------|--------------------|--------------------|
| Perineurial fat. | Stained..... | Stained..... | Stained..... |
| Axis cylinder. | Normal..... | Normal..... | Normal..... |
| Nodes of Ranvier. | Stain less plainly | Stain less plainly | Stain less plainly |
| Caliber. | Diminished. | Diminished. | Diminished. |
| Staining quality | Less than normal | Less than normal | Less than normal |

OTHER ORGANS.

The heart showed myositis; the liver was normal; the muscles about the site of injection showed inflammatory changes.

EXPERIMENT 6.—GROSS ANATOMICAL FINDINGS.

NERVE, BOTH SCIATICS.

| | At Site of Injection. | Proximal. | Distal. |
|--------------|-----------------------|-----------------|-----------------|
| Size. | Diminished in caliber | Diminished..... | Diminished..... |
| Color. | Very dark. | Lighter. | Lighter |
| Consistency. | Softer than normal | Soft. | Soft |

SURROUNDING TISSUES.

| | At Site of Injection. | Proximal. | Distal. |
|------------|-----------------------|-------------------|-------------------|
| Color. | Dark brown. | Disappearing..... | Disappearing..... |
| Infection. | Present. | Present. | Present |

OTHER ORGANS.

| | At Site of Injection. | Proximal. | Distal. |
|--------------------|-----------------------|-------------|-------------|
| Voluntary muscles. | Inflamed..... | Absent..... | Absent..... |

The heart showed myositis; the liver and spleen were normal. In the brain, examination of the corpora quadrigemina, the cerebral cortex and the medulla oblongata, showed them to be normal. The color of the deep structures of fore leg was very dark, involving muscle tissue, tendons, ligaments and periosteum, but infection and inflammatory changes were absent.

MICROSCOPIC FINDINGS.

NERVES, BOTH SCIATICS.

| | At Site of Injection. | Proximal. | Distal. |
|------------------|-----------------------|------------------|------------------|
| Perineurial fat. | Stained..... | Stained..... | Stained..... |
| Axis cylinder. | Normal..... | Normal..... | Normal..... |
| Myelin sheath. | Stains poorly. | Stains poorly. | Stains poorly. |
| Caliber. | Diminished. | Diminished. | Diminished. |
| Focal necrosis. | Focal necrosis. | Focal necrosis. | Focal necrosis. |
| Staining quality | Less than normal | Less than normal | Less than normal |

OTHER ORGANS.

In the brain the corpora quadrigemina; the medulla oblongata and the cerebral cortex were normal. The heart and liver were normal. In the muscles at the site of injection the tissues were dark; the nuclei, clearly visible; the sheath of muscle fibers, visible; the protoplasm, stained poorly, the different parts could not be made out; inflammatory changes were present. The tendons showed inflammatory changes.

CONCLUSIONS.

1. The injection of 10 drops of osmic acid in 2 per cent. solution into sensory nerve trunks is safe. The likelihood of irritation of the kidney, however, should not be forgotten in cases exhibiting kidney lesions. It is not probable that the death from cerebral hemorrhage three months after injection of the acid was due in any sense to the injection.

2. Injections into the inferior dental or other nerves should be made through the mouth, since infection of the wound and necrosis may result, with consequent failure in the action of the acid.

3. Immediate relief should not always be expected, notwithstanding the cases of Bennett and Murphy were all immediately relieved. No one of my cases, even those in which the acid was accurately injected into the nerve trunks and into the perineurial fat, was promptly relieved, relief coming in from one to two weeks. The observations on this point of Wright, who had a large experience with osmic acid injections, correspond to mine.

4. There is very little doubt that the stretching of the nerve trunk, necessarily incident to the injection, is productive of good, supplementing, as it must, the action of the acid. There is, therefore, no good reason why the stretching should be avoided intentionally, except perhaps for experimentation.

5. In the case of small nerves, it will be found exceedingly difficult to inject directly into the nerve trunk, that is, the needle eye will pass to the distal side of the thread-like nerve, or perhaps not enter the nerve substance at all. Or, notwithstanding the utmost care, the fibers may be so teased apart by the needle point that the fluid will simply be spilt about the nerve. In such a case, in order to bring the acid in contact with all of the fibers, it is wise to clip the nerve so that the end may be bathed in the fluid.

6. The effect of manipulation of the nerve, as by stretching, has not as yet been eliminated as a possible aid to the chemical action of the osmic acid; therefore, a general anesthetic should be administered so that neurotomy or section of the nerve may be done if desired.

7. My experiments have shown no changes in the nerve tissues as the result of injections of osmic acid other than the disintegration of fat and oil globules in the perineurial space and in the white matter of Schwann, such white matter of Schwann being simply fatty matter in a fluid state insulating and protecting the essential part of the nerve. The degenerations appearing in the nerve itself are only such as may be fairly attributed to nutritional changes and exposure, the indirect result of the selective action of osmic acid of destroying fat. There is no reason why this fat should not be restored and the nerve again become capable of transmitting sensation, that is, theoretically, the neuralgia may return after injections of osmic acid.

8. Osmic-acid injections are uncertain in effect as to the cure or relief of neuralgia.

9. A large percentage of cases of neuralgia will be relieved for months by osmic-acid injections.

10. The injection of osmic acid for the relief of tic douloureux is justifiable, even if it should become necessary to repeat the injections at intervals of a few months, particularly in view of the unfavorable results of the so-called radical operations.

11. The local irritation produced by the acid and the remote toxic and irritant effects are not serious in their consequences and have no meaning as to the effect of the osmic acid in relieving neuralgia.

12. The solution of osmic acid should be made fresh for each operation, as deterioration is rapid.

13. Pain persisting several days in a small circumscribed area means that the filaments supplying this area have not been acted on by the acid. The acid usually finally destroys such filaments. It may become necessary, however, to reopen a wound for the purpose of injecting such filaments.

14. Mere subcutaneous injections are of little or no value.

Value of Society Meetings.—The art of medicine is important, but in these days of scientific accuracy in diagnosis, the microscope and test-tube and x-ray, can not be ignored even by the busiest of men, as by their careful use mistakes are prevented and injustice to our clientele avoided. It is in journals and books and medical societies that knowledge and familiarity with what is now in medicine must be learned, and wise is the doctor who early discerns that a membership in an active medical association is one of the best means of keeping in touch with the best, both of science and of men, that is worth knowing in his profession.—A. W. Hurd, in *Buffalo Medical Journal*.

SOME STUDIES IN METABOLISM OF CANCER PATIENTS AS COMPARED WITH NORMAL INDIVIDUALS.

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In this paper it is proposed to review and summarize previous work on nitrogen and chlorin metabolism, and then to give in detail experiments carried out, at the suggestion and under the direction of Dr. Clowes, on a normal individual and on several cancer patients, and to compare the results of such experiments.

SUMMARY OF THE PREVIOUS WORK.

Much of the previous work loses in value because of the lack of accurate data recording quantities of nitrogenous food and chlorids ingested, quantity of nitrogen and chlorids excreted through the feces, body weight, etc. One very important source of error in the determination of chlorids is the change from solid to liquid food, especially the substitution of a milk diet for the normal solid food. The ratio of chlorids to proteid matter in milk is smaller than in solid food as usually consumed; hence, with milk one expects a reduced chlorid ingestion and reduced chlorid excretion.

The literature for the last twenty-five years shows divergent views on the equilibrium of nitrogenous bodies and chlorids in cases of impaired metabolism. Vogel,¹ Rommelaire,² Jacoby³ and others noted marked disturbances in excretion of urea and chlorids in cachectic cancer patients, but did not carry out exact experiments to determine the amount of food stuff consumed as compared with the waste products excreted. Müller⁴ and Klemperer⁵ concluded that, under the influence of the toxic excretions from tumors, the amount of nitrogen excreted was in excess of the amount ingested, while Moraczewski finds the converse to be true. Similar differences of opinion exist as to the retention and excretion of chlorids.

A paper⁶ published by Jacoby in 1887 is one of the first records of work of real value. He compared the daily nitrogen excretion of a normal individual with that of a patient suffering from carcinoma of the liver, and found that, while the normal individual gained weight with a nitrogen excretion of less than 12 gms. daily, the cancer patient lost weight with an excretion of 18 gms. daily. The next work of value was done by Müller,⁴ who studied the conditions of metabolism in 9 cancer patients. He concluded that there was a continued loss of nitrogen from the system in spite of the rapid growth of the tumor, that the loss of body weight corresponded to the loss of nitrogen when the influence of edematous fluids was considered, and that where nutritive processes were seriously affected by the tumor the ratio of the nitrogen in the excreta to the nitrogen in the food was similar to that in starving individuals.

G. Klemperer⁵ concludes, from a series of fairly exact metabolic experiments, that when cancer and normal individuals are subject to the same experimental conditions

the former will lose and the latter may gain in body proteid.

Laudenheimer⁷ took five cancer patients and found that two maintained equilibrium of chlorids, while in two the chlorids excreted were below the amount ingested; he concluded that this was the result of nephritic or circulatory retention of water and salt.

Schöpp⁸ says that, while both chlorid and nitrogen excretion frequently fall below the amount assimilated in cancer patients, the difference may be attributed to ulceration of the tumor, the secretion containing considerable quantities of chlorid.

Böhne⁹ found in a marked cachectic cancer patient a daily retention of 3 to 4 gms. of chlorid for a period of four weeks, and further claims that a chemical analysis revealed four times the amount of chlorid normally found in the liver.

Braunstein¹⁰ carried out a series of analyses of urine in ten cancer patients, in five of which an exact record had been kept of the chlorid and nitrogen content of the diet. In three of the five patients a loss of nitrogen was observed, being particularly marked in a patient suffering from cancer of the esophagus, where the loss reached as much as 10.6 grams per day for a period of four days. He failed to find any marked difference between the chlorid contained in the food and in the excreta.

A review of this literature will impress one with the great variations in the results obtained. Some have observed a gain in nitrogen on the part of the system, which they attribute to the rapid growth of the tumor; others have noted a distinct loss of nitrogen, which they have supposed was due to the action of toxic substances produced in and excreted from the tumor. In any case, the discrepancies observed would justify further investigation in this direction.

While a diminished excretion of chlorids has frequently been observed in cancer patients, few of the early writers noted the fact that in many of the experiments, milk having been substituted for solid food which could not be assimilated, the chlorid ingestion was necessarily reduced. Therefore, it would be a wrong deduction to say that chlorids were retained.

A complete review of the literature bearing on this subject may be found in the Fifth Annual Report of the New York State Cancer Laboratory.

OBJECTS OF THIS STUDY.

The main objects of our investigations have been as follows:

1. To determine whether the gain or loss in weight of a cancer patient was associated with a corresponding gain or loss of nitrogen from the system and to compare these results with those obtained from the study of a normal individual.
2. To determine whether chlorid is retained in the system, by comparing the amount assimilated with the amount excreted, and, if so retained, to what extent.
3. To determine whether the chlorid retained in the system has any direct relationship with the supposed increase of chlorid in the blood and with the formation of edematous deposits.
4. To study the effect of adding or totally excluding chlorid from the diet as compared with the effect of such treatment on a normal individual.

1. Vogel: *Zeitschr. f. ration. Med.*, vol. IV, 1854, p. 362.
2. Rommelaire: *Journ. de Med. de Chir. et de Pharm.* de Bruxelles, 1883-1886.
3. Jacoby: *Stoffwechsel bei Icterus*, Dissert. Würzburg, 1887.
4. Müller, Alb. and Paul Saxl: *Centralblatt f. Phys.*, 1903, vol. XVII, p. 497.
5. Klemperer: *Verhandl. d. physiol. Gesellsch. zu Berlin*, 1889, Verhandl. d. 8 Congresses. f. Innere Med., 1889, *Zeitschr. f. klin. Med.*, vol. XVI, 1889, *Berl. klin. Wochenschr.*, 1889, No. 40. *Charité Annalen*, vol. XVI, 1891.
6. Müller, Fr.: *Zeitschr. f. klin. Med.*, vol. XVI, p. 496.

7. Laudenheimer: *Zeitschr. f. klin. Med.*, vol. XXI, 1892, p. 513.
8. Schöpp: *Deutsch. med. Wochenschr.*, 1893, No. 46.
9. Böhne: *Fortschritte d. Med.*, 1897, No. 4.
10. Braunstein: *Revue de Med.*, vol. VII, 1891, Nos. 7 and 10.

METABOLISM EXPERIMENTS.

Case 1. Normal Individual.—In order to note the influence of varying quantities of chlorid on normal metabolism, it was determined to carry out a series of experiments on one of ourselves. For two periods of thirteen and nine days, respectively, experiments in feeding were carried out on Dr. G., physician, age 32, weight 66 kilo, health normal. During this time an accurate record was kept of all food and liquid consumed, and of all feces and urine passed and samples of food, liquid, feces and urine taken to the Gratwick Laboratory for accurate chemical analysis. Data were kept of daily weight and exercise. The first five days were devoted to determining the nitrogen equilibrium. It was found that body weight remained constant when the food ingested during twenty-four hours contained from 13 to 14 grams of nitrogen.

For the remainder of the period the amount of nitrogen was varied in quantity; this change, however, affected the body weight far less than the change in the quantity of chlorid. When the nitrogenous food was largely increased in quantity, a portion of the excess was passed by the bowel and the kidneys, the remainder being apparently retained by the system.

TABLE I.
First Period.

| Date. | N in Food. | N in Ur. and Fec. | N in Ur. and Fec. Food. | NaCl in Ur. and Feces. | Body weight in Kilo. | Uric Acid. | Ammonia. |
|-------------------|------------|-------------------|-------------------------|------------------------|----------------------|------------|----------|
| Jan. 24-25... | 14.0 | 14.1 | ... | ... | 65.9 | .58 | .. |
| Jan. 25-26... | 15.3 | 15.0 | ... | ... | 65.1 | .. | .. |
| Jan. 27-28... | 12.4 | 13.5 | 7.9 | 8.1 | 65.4 | .33 | .87 |
| Jan. 28-29... | 15.5 | 13.7 | 8.1 | 7.9 | 66.1 | .34 | .80 |
| Jan. 29-30... | 13.9 | 15.9 | 27.6 | 20.0 | 66.4 | .74 | .63 |
| Jan. 30-31... | 13.9 | 14.2 | 23.0 | 23.6 | 66.5 | .51 | .81 |
| Jan. 31-Feb. 1... | 17.6 | 14.6 | 12.1 | 17.6 | 66.1 | .46 | .76 |
| Feb. 1-2... | 13.0 | 13.1 | 2.0 | 9.5 | 65.1 | .33 | .78 |
| Feb. 2-3... | 9.1 | 11.3 | 1.3 | 3.8 | 64.3 | .36 | .60 |
| Feb. 3-4... | 5.1 | 9.2 | 9.3 | 5.4 | 64.7 | .46 | .56 |

Second Period.

| Date. | N in Food. | N in Ur. and Fec. | N in Ur. and Fec. Food. | NaCl in Ur. and Feces. | Body weight in Kilo. | Uric Acid. | Ammonia. |
|-------------------|------------|-------------------|-------------------------|------------------------|----------------------|------------|----------|
| Mar. 30-31... | 12.2 | 10.7 | 32.2 | 26.5 | 66.7 | .48 | .. |
| Mar. 31-Apr. 1... | 15.4 | 17.7 | ... | ... | 66.7 | .67 | .91 |
| April 1-2... | 12.8 | 13.2 | 30.3 | 27.8 | 67.5 | .52 | .83 |
| April 2-3... | 14.0 | 14.1 | 7.8 | 12.8 | 67.0 | .43 | .97 |
| April 3-4... | 11.4 | 13.9 | 6.5 | 9.7 | 66.7 | .46 | .76 |
| April 4-5... | 11.6 | 13.9 | 4.1 | 6.3 | 66.4 | .47 | .84 |
| April 5-6... | 12.1 | 12.8 | 6.6 | 6.3 | 65.8 | .38 | .69 |
| April 6-7... | 8.2 | 11.3 | 13.7 | 10.6 | 65.7 | .43 | .82 |
| April 7-8... | 6.6 | 11.3 | 3.8 | 7.6 | 66.0 | .35 | .57 |

During the last two days of the first period the proteid food was reduced to a considerable extent, the results of which follow:

When the nitrogen ingested was reduced from 13.5 to 9.0 gms., the nitrogen excreted fell from 13.5 to 11.3 gms., whereas a further reduction to 5.1 gms. ingested led to an excretion of 9.3 gms. These figures show that a proportionate loss of nitrogen by the body follows a reduction of nitrogen in the food, but that the actual reduction in the excreta is only about one-half the actual reduction in the food.

During the second period constant body weight was maintained with an average daily consumption of 13.6 gms. nitrogen. A study of the last two days of this period, during which the patient was once more subject to partial starvation, shows that about the same ratio exists between the intake, output and loss of nitrogen, as in the previous starvation period. In other words, it became apparent that when the nitrogen of the food is rapidly reduced to a point below the normal, the loss on the part of the body required to compensate for this difference is not equal to the amount in question, but only to about one-half.

It was not deemed advisable to carry the reduction of nitrogen in the food beyond this point. The figures obtained indicate that the amount of nitrogen lost daily in a state of absolute starvation would be about 6 gms., or .1 gm. per kilo.

The study of the influence of varying quantities of sodium chlorid on elimination and body weight is very interesting. Under normal conditions the amount of sodium chlorid consumed lay between 7.5 and 8 gms. per day. When the ingestion of NaCl was increased from 8 to 27.6 gms. the total excretion was 20 gms., showing a gain of 7.6 gms. by the body. The following day the consumption of 22.9 gms. NaCl was followed by the excretion of 23.6 gms., a practical balance being established on this day. The next day, when 12 gms. only were consumed, a total of 17.6 gms. was eliminated, showing the tendency of the body to recover chlorid equilibrium, but the following day, when only 2 gms. were ingested and 9.5 gms. excreted, the body suffered a decided loss in chlorid, which was continued on the next day, when only 1.3 gms. being ingested 3.78 gms. were excreted. The following day ended the experiment with an ingestion of 9.2 gms. and a loss of 5.3 gms., showing a tendency of the system to replace chlorid previously lost. The results of chlorid experiments in the second period were very similar to those just mentioned.

The effect of large daily consumption of chlorid on the excretion of nitrogen is marked, the maximum excretion of nitrogen occurring at the same time as the maximum excretion of chlorid.

The curve representing body weight follows almost exactly the curve showing consumption of chlorid. The total loss of weight between the maximum and the minimum points, about 2 kilos, was accompanied by a loss of chlorid amounting to about 15 gms., which would fully account for that difference in weight, assuming that a .75 to .8 per cent. sodium chlorid solution is isotonic with the serum. The second period showed an even more exact ratio between chlorid ingested and body weight.

The loss of nitrogen during this period had an insignificant effect on the body weight as compared with the variation in chlorids.

The volume of water ingested shows a preponderance over that excreted by the kidneys of from 500 to 600 c.c. During the time when the greatest quantity of chlorid was ingested the intake of water was about two liters, while the urine passed was 1,300 c.c., the specific gravity never rising above 1023 to 1022. Only when the chlorid in the diet was reduced to a minimum did the urine excreted equal the water ingested.

We, therefore, see that the variations in body weight follow closely the variations in amount of chlorid ingested and excreted, the amount of water held in the system being directly affected by the amount of chlorid retained. A period of not longer than forty-eight hours is required to establish chlorid equilibrium, which is more readily effected than in pathologic cases.

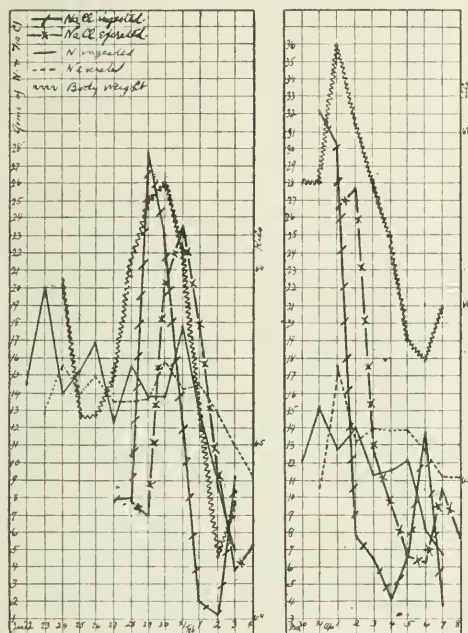
Effect of variations in the amount of chlorid on other constituents of the urine: When the quantity of chlorid ingested was very high, there was a large volume of urine passed, a slight rise in nitrogen excretion, an increase in the phosphates, and a very large excess of uric acid, with a slight decrease in the ammonia. This excess of uric-acid excretion might be due to an increased destruction of nuclei of cells or a more complete removal of uric acid already existing in the blood. This latter theory is in accord with the results published by Dr. Clowes relating to the freezing point of urine, which indicate a probable relationship between the excretion of small ions and of large complexes, such as uric acid.

Case 2. Carcinoma of Pylorus.—J. W., age 75, weight 51 kilos. He experienced difficulty in taking food for months past; he became emaciated and cachectic. When

inspected and palpated a prominent tumor was revealed in the epigastrium. Autopsy showed carcinoma of pylorus.

Examinations were made of twenty-four-hour samples of urine and feces for a period of twelve weeks; for the last eight weeks preceding death estimation was made of total nitrogen and chlorid in the food in order to obtain a comparison of nitrogen and chlorid in food and excreta and to determine the influence of varying proportions of NaCl in the diet.

A glance at Table 2 shows that equilibrium in nitrogen and chlorid was maintained during the first two weeks, the body weight remaining constant. Then began a loss in nitrogen with a retention of chlorid, amounting during the last two weeks of life to 33.7 gms. of nitrogen lost and 22.8 gms. of NaCl retained, or 80 per cent. of



NaCl ingested was retained. During one week the ingestion of NaCl was increased to 17.9 gms. in the hope of eliminating chlorid, the products of metabolism and suboxidized products. The only result was increased edema on the part of the patient. A portion of the chlorid was undoubtedly retained in the system in the increased fluid of the body, but, unlike the normal individual cited, the kidneys did not pass off the excess of chlorid from twenty-four to forty-eight hours. Possibly the retention of chlorid was due to new chlorid compounds formed by the suboxidized nitrogenous bodies.

TABLE 2.

| Date. | N in Food. | N in U. and F. | Loss or Gain of N. | Cl in Food. | Cl in U. and F. | Loss or Gain of Cl. |
|----------------------|------------|----------------|--------------------|-------------|-----------------|---------------------|
| Feb. 4-11..... | 45.0 | 49.0 | +4.0 | 11.8 | 11.7 | + .1 |
| Feb. 11-18..... | 46.4 | 42.4 | +4.0 | 14.2 | 13.3 | + .9 |
| Feb. 18-26..... | 36.5 | 50.6 | -14.1 | 13.0 | 10.2 | + 2.8 |
| Feb. 26-Mar. 5..... | 32.9 | 40.2 | -7.3 | 8.8 | 4.7 | + 4.1 |
| March 5-12..... | 45.9 | 50.4 | -4.5 | 12.2 | 4.0 | + 8.2 |
| March 12-19..... | 38.1 | 50.0 | -11.9 | 13.2 | 6.0 | + 7.2 |
| March 19-26..... | 30.0 | 40.3 | -10.3 | 17.8 | 2.0 | + 15.8 |
| March 26-Apr. 2..... | 21.6 | 44.4 | -22.8 | 8.5 | 1.5 | + 7.0 |

The patient received an average of 1.66 gms. NaCl per day, and he was unable to maintain equilibrium even with this very low ingestion. During the week when NaCl was increased to 17.8 gms., 15.8 gms. were retained in the system, the body weight going up to 1.25 kilos in spite of the loss of nitrogen, which was less marked than during other periods, probably due to retention of nitrogenous products in the edematous fluids.

This case, in which the N equilibrium of a patient weighing originally 51 kilos was maintained for a space of 14 days at 6.5 gms. and in which for the entire period of eight weeks, during which accurate observations were made, the average N excretion was only 6.7, affords further evidence in support of the work recently published by Professor Chittenden showing the possibility of maintaining a N equilibrium on a low amount of N for many months in a series of normal individuals.

When the interference with the nutrition caused by toxic or other influences resulting from the tumor are considered, it is remarkable that the loss of N suffered by the body should be as low as is frequently found to be the case in these and other similar series of experiments.

Case 3. Carcinoma of Esophagus and Liver.—Mr. U., aged 60, weight 75 kilos. The diagnosis was made during life and confirmed at autopsy by finding three inches of esophagus above the diaphragm a cancerous mass with metastasis to stomach and liver. The patient was fed through a fistulous opening.

For a period of six days exact analyses were carried out on the food to determine the nitrogen and chlorid equilibrium and the effect of increased and diminished feeding of NaCl.

TABLE 3.

| Date. | N. In food. | N in U & F. | Cl of food as NaCl. | Cl of U & F as NaCl. | Ur. as NaCl. |
|-----------------|-------------|-------------|---------------------|----------------------|--------------|
| Oct. 20-21..... | 0.58 | 8.11 | .98 | 3.38 | .46 |
| Oct. 21-22..... | 0.02 | 9.20 | 1.73 | 3.25 | .45 |
| Oct. 22-23..... | 0.04 | 7.63 | 1.88 | 1.49 | .35 |
| Oct. 24-25..... | 0.74 | 9.28 | 8.20 | 3.43 | .38 |
| Oct. 25-26..... | 0.73 | 8.50 | 9.80 | 7.06 | .70 |
| Oct. 26-27..... | 0.43 | 8.10 | 9.95 | 6.70 | .52 |

A study of the accompanying table shows an average retention in the system of 1 gram of nitrogen daily, which may be explained by improvement in bodily nutritive processes or by the retention of nitrogen in the edematous fluids. Here, however, the retention was the same for both periods, while chlorid and water were retained only during the latter period.

During the first three-day period, when the consumption of chlorid was very low, the excretion of urine was high, averaging two liters per day, but when the chlorid consumption was increased the total volume of urine excreted was less than four liters, showing a retention of fluids and the production of edema. An estimation of the total chlorid ingested and excreted shows a tendency on the part of the system to retain a small portion of chlorid.

This patient, in the absence of marked toxic symptoms, showed practical equilibrium of nitrogen with a slight retention of chlorid.

Case 4. Carcinoma of Right Kidney.—Mr. T., aged 66. Autopsy revealed primary carcinoma of right kidney with secondary tumors in liver.

TABLE 4.

| Date. | N in food. | N in excre. | Cl in food as NaCl. | Cl in excre. as NaCl. |
|------------|------------|-------------|---------------------|-----------------------|
| 8-9..... | 5.1 | 8.3 | 2.0 | .32 |
| 9-10..... | 5.1 | 8.6 | 2.0 | .32 |
| 10-11..... | 5.1 | 10.5 | 2.0 | .62 |
| 11-12..... | 2.6 | 3.9 | 1.0 | .08 |
| 12-13..... | 5.1 | 5.4 | 2.0 | .39 |
| 13-14..... | 5.1 | 6.3 | 3.0 | .55 |
| 14-15..... | 5.1 | 6.8 | 3.6 | .82 |
| 15-16..... | 5.1 | 7.1 | 2.0 | .45 |
| 16-17..... | 2.6 | 4.5 | 1.0 | .10 |
| Total..... | 40.9 | 61.4 | 19.2 | 3.59 |

For nine days preceding death exact chlorid and nitrogen determinations were made of food and excreta. A slight increase of chlorid for two days was not associated with any marked increase in the excretion of urine, but did cause edema and cachexia. A continued loss of nitrogen was noted in this case, and a strong tendency to retention of chlorid.

Case 5. Sarcoma.—Mr. C., aged 75. Sarcoma of skin and connective tissue in right epigastric region, having a maximum diameter of six inches. Patient refused operation and left the hospital at the completion of the feeding experiments covering twelve days. Accurate determinations of food were carried out on only two days, the remaining days being approximates.

TABLE 5.

| Day. | Total N. of food. | —Nitrogen of— Urine. Feces. | NaCl In food. | —NaCl In— Urine. Feces. |
|-----------------------|-------------------|-----------------------------------|---------------|-------------------------------|
| 1 | | 9.4 | ..... | ..... |
| 2 | | 7.3 | ..... | ..... |
| 3 | | 9.4 | ..... | ..... |
| 4 | | 10.7 | ..... | ..... |
| 5 | | 8.1 | ..... | ..... |
| 6 | | 10.1 | ..... | ..... |
| | | 55.0 | 10.50 | |
| Totals, 69.0 to 71.0* | | | | |
| | | 65.5 | | |
| 7 | | 10.1 | ..... | 8.2 † |
| 8 | | 9.0 | ..... | 6.7 † |
| 9 | | 9.3 | ..... | 8.1 † |
| 10 | | 9.1 | ..... | 8.2 † |
| 11 | | 9.8 | ..... | 8.2 † |
| 12 | | 10.5 | ..... | 9.5 † |
| | | 57.8 | 9.7 | |
| Totals, 69.0 to 71.0* | | | | |
| | | 67.5 | 46.0 to 48.0* | 48.9 |

*Approximately.

†Only traces, and so disregarded.

In this case, although a tumor existed and toxic symptoms were manifested, the patient retained a small amount of nitrogen, and the variations in the amount of chlorid excreted corresponded with the variations in body weight, as in the normal case already cited.

Case 6. Carcinoma of Vulva.—Mrs. N., aged 58. Tumor of right vulva, extending to vagina and cervix. Patient emaciated and cachectic.

Although experiments were carried out for forty-five days on the urine and twenty-four days on the food, only those of the last six days can be considered approximately correct. During this period there was a loss of 5.6 gms. of nitrogen and a gain of 1.9 gms. of chlorid which was scarcely comparable with a body loss of .75 kilo.

*Case 7. Cardio-spasmus.*¹¹—P. G., aged 59. Inability to swallow solid food. After a gastrostomy was performed he was fed through a tube for a fortnight. He subsequently died of pneumonia.

TABLE 7.

SERIES A.

| Day. | N. In food. | N. in excreta. | NaCl in food. | NaCl In excreta. |
|------|-------------|----------------|---------------|------------------|
| 1 | 12.5 | 15.7 | 5.5 | 4.8 |
| 2 | 11.4 | 18.6 | 4.2 | 4.3 |
| 3 | 12.3 | 16.6 | 6.3 | 6.4 |
| 4 | 12.8 | 17.7 | 4.3 | 5.7 |
| 5 | 12.6 | 16.9 | 6.8 | 6.9 |

SERIES B.

| Day. | N. In food. | N. in excreta. |
|------|-------------|----------------|
| 1 | 14.0 | 14.3 |
| 2 | 13.6 | 10.4 |
| 3 | 13.4 | 15.9 |
| 4 | 13.9 | 13.3 |

A series of nitrogen and chlorid determinations was carried out on this patient. During the first five days there was a decided loss of nitrogen, due possibly to the shock and the toxic effects of an infection which developed at the point of introduction of the tube. A subsequent determination of nitrogen showed a maintenance of equilibrium. The considerable loss of N in the first period attributable to the toxic influence of an infection

was far more marked than the loss of N due in other cases to cancer cachexia. There was no retention of chlorid to any extent, a fair equilibrium being maintained, and no edema being present.

Case 8. Stricture of Esophagus (supposed to be carcinomatous).—L. L., aged 44. In order to compare the nitrogen and chlorid metabolism of this case with those known to be carcinoma, experiments were carried out for two weeks.

TABLE 8.

PERIOD 1.

| Nitrogen of food. | Nitrogen of excreta. |
|-------------------|----------------------|
| 13.0 | 14.6 |
| 13.0 | 13.1 |
| 14.2 | 15.2 |
| 15.5 | 14.5 |
| 15.5 | 14.4 |
| 15.5 | 16.2 |

PERIOD 2.

| Nitrogen of food. | Nitrogen of excreta. | NaCl of food. | NaCl of excreta. |
|-------------------|----------------------|---------------|------------------|
| 11.4 | 13.3 | 12.3 | 11.2 |
| 10.7 | 12.3 | 11.7 | 12.4 |
| 10.7 | 12.3 | 11.7 | 9.4 |

PERIOD 3.

| Nitrogen of food. | Nitrogen of excreta. | NaCl of food. | NaCl of excreta. |
|-------------------|----------------------|---------------|------------------|
| 16.5 | 14.8 | 11.7 | 9.5 |
| 16.8 | 17.6 | 11.7 | 11.9 |
| 16.9 | 15.6 | 11.7 | 10.9 |
| 17.0 | 13.6 | ... | ... |
| 17.1 | 14.6 | ... | ... |

During the first six days a fairly accurate nitrogenous equilibrium was maintained, while a slight retention of chlorid was manifested, although these results were not as accurate as the nitrogen determinations. During the next period of three days the nitrogen of the food was reduced to 10.9 gms. daily which resulted in an average loss of 1.7 gms. daily, while the chlorid was maintained at a fairly high level, .9 gm. being retained by the system. During the third period the nitrogen in the food was increased to from 16.8 to 16.9 gms. daily, resulting in a retention of nitrogen. The patient gained weight and showed marked improvement with a diet containing 16 gms. of nitrogen. During three days of this period chlorid equilibrium was maintained very well, 11.7 gms. in the food being followed by a loss of 11.1 gms. in the urine.

A source of experimental error which may be mentioned is the loss of nitrogen and chlorid by the skin, which, if taken into account, might rectify small differences between ingestion and excretion. The small amount of work which has been done along this line indicates a normal loss per day of from .1 to .2 gm. of nitrogen and from .2 to .3 gm. of sodium chlorid.

SUMMARY OF DATA.

The following table gives the average of chlorid and nitrogen of food and excreta in normal, cancer and doubtful cases.

TABLE 9.

| Case. | N. of food. | N. of excreta. | NaCl of food. | NaCl of excreta. |
|---|-------------|----------------|---------------|------------------|
| 1. Normal | a 13.0 | 13.4 | 11.4 | 11.9 |
| | b 11.6 | 13.2 | 13.2 | 13.5 |
| 2. Carcinoma of stomach and pancreas | a 6.5 | 6.5 | 1.85 | 1.8 |
| | b 5.5 | 6.7 | 1.6 | .9 |
| | c 4.3 | 6.7 | 1.9 | .45 |
| 3. Carcinoma of esophagus involving stomach and liver | 9.4 | 8.5 | 5.4 | 4.45 |
| 4. Carcinoma of kidney | 4.5 | 6.8 | 2.1 | .4 |
| 5. Sarcoma of skin and connective tissue | 11.5 | 11.1 | 7.8 | 8.1 |
| 6. Epithelioma of uterus, etc. | 8.1 | 9.0 | 6.0 | 5.7 |
| 7. Cardio-spasmus (infection) | a 12.3 | 17.1 | 5.4 | 5.6 |
| | b 13.7 | 13.5 | ... | ... |
| 8. Esophageal stricture (cause undetermined) | a 14.4 | 14.7 | ... | ... |
| | b 10.7 | 12.6 | 11.9 | 11.0 |
| | c 16.9 | 15.2 | 11.7 | 10.8 |

11. A diagnosis of carcinoma of the esophagus was subsequently made.

SUMMARY OF EXPERIMENTAL FEEDING.

Case 1. A normal individual was submitted to partial proteid starvation, while the quantities of chlorid were varied. A loss of nitrogen resulted, while chlorid equilibrium was maintained.

Cases 2 and 4 were suffering from carcinoma and were cachectic. The experiments were carried out until death. There was a constant loss of nitrogen and retention of chlorid, but the loss of nitrogen was but little above the loss sustained by a normal individual in a state of starvation, indicating that this loss was not of necessity due to the toxic influence of the tumor.

Case 3. This patient had positive cancer of the stomach and liver, yet showed, instead of a loss, a retention of nitrogen and the expected retention of chlorid. One source of error was the loss of nitrogen through expectoration. Death prevented a repetition of the experiment.

Case 5. This patient showed how little effect a growing sarcoma had on nutrition, a balance of nitrogen and chlorid for twelve days being maintained.

Case 6. This patient, suffering from epithelioma of the vulva, showed a slight loss of nitrogen and retention of chlorid, the slight loss of nitrogen being possibly explained by the inability perfectly to control the patient for experimental work.

Case 7. This cardio-spasmus patient showed a loss of nitrogen during the first period, probably due to the operation and subsequent infection, and maintained a fair equilibrium of chlorid. During the second period equilibrium of nitrogen was maintained.

Case 8. This patient, suffering from stricture of the esophagus, due to unknown causes, maintained nitrogen equilibrium on 14 gms. per day, but retained nitrogen when receiving more and lost when receiving less. A slight tendency to chlorid retention existed.

In conclusion, it must be admitted that none of our patients showed an absolutely accurate balance, of body weight, loss and gain of nitrogen and chlorid, increase in weight of tumor, loss of tissue and production of edema. But when we note the loss of nitrogen and chlorid by the skin and mouth and other experimental errors a fair balance may be struck.

A most important conclusion has already been noted in the text, namely, that a healthy individual was able to assimilate enormous quantities of chlorid and strike a balance in from twenty-four to forty-eight hours, while cancer patients showed edema when chlorid consumption was increased, the kidneys being unable to excrete the excess.

The great significance of the rôle played by soluble chlorids in the process of oxidation and elimination of waste products can not be overlooked.

Work of this nature shows the presence in the system of toxic substances capable of interfering to a certain extent with nutritive processes. These toxic bodies are not proved to be specific cancer poisons, but may be sub-oxidized nitrogenous products.

Nonsectarian Medicine.—Sectarianism in medicine is founded in selfishness and commercialism. It is a stumbling block to the science and art of medicine. The goal of medical science is truth, and the application of truth to the prevention and cure of disease. To the physician all known truth should be available, all plausible theories should be his to prove. No dogma should fetter his choices, no school should select his remedies, no sect determine his methods.—*Columbus Medical Journal*.

CONGENITAL COXA VARA.

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E. S., 3-year-old girl, a patient of Dr. O. T. Maynard's of Elyria, was referred to Dr. E. F. Cushing, who kindly referred her to me Oct. 10, 1905.

History.—The family history showed nothing of importance. The mother was well developed and healthy and had several other normal children. Pregnancy was normal. The birth ran smoothly, but at delivery Dr. Maynard noticed that the legs were in a peculiar position. The right one was flexed with the knee pointing outward in the normal way and the lower leg placed across the abdomen, but the left leg, instead of being in a position symmetrical to the right, had its thigh adducted into approximation with the right thigh. The knee was sharply flexed and the lower leg ran parallel to the lower leg of the right side, the foot being turned outward at the ankle. This position having been noted, the doctor drew the legs down and noticed an extreme flexibility at the left hip joint, suggesting congenital dislocation. No ophthalmia was noticed.

After this the child was kept under careful observation, and developed and nursed well, the hip not getting any worse, and treatment was deferred to a later period.

On walking, at about 18 months, the child limped on her left leg, the limp not being very extreme, but noticeable. There never was any sign of inflammation, no abscess, no stiffness, no night cries, no history of injury.

Examination.—The examination showed a well-developed and nourished child, very active, but limping slightly on her left leg. The examination of her shoulders, spine and other joints showed nothing. There was no glandular enlargement, no rosary, no enlarged epiphyses and no other signs of rickets. The examination of the right leg showed nothing. In the left leg the patella was situated higher than in the right.

In the left hip the trochanter was prominent and elevated, being well above Nélaton's line. Motions were not limited except to a moderate degree in abduction and external rotation. On manipulation the head of the bone could not be located out of its socket, but there seemed to be a peculiarity about the joint compared to that of the other side, as though the neck had lost its normal angle with the shaft. The left knee was somewhat knocked. There was some pronation at the ankles. Besides this there were no defects nor deformities. Measurements from the great trochanter to the knee joint showed the shafts to be about equal. Measurements of the leg were as follows: A. S. S. to I. M., right 16, left 15½; umbilicus to I. M., right 16¼, left, 17¼; circumference right thigh 10½, left, 10½; circumference right calf 7¼, left 7¼.

Thus there was no atrophy and only one-half inch shortening, apparently due to something wrong about the hip joint. A Roentgen picture was taken which explained the condition. (Fig. 1.) On this the neck of the bone is seen to be shortened and thickened and placed at a right angle to the shaft. The epiphysis is only one-fourth the size of that of the other side. The acetabulum is exactly like that on the right. The pelvis shows nothing wrong and the femoral shaft is not atrophied. The apparent thickening is probably due to the fact that the two legs presented a slightly different angle to the tube. The thigh is in a position of slight adduction.

The evidence in this case is, we believe, sufficient to prove its being congenital. The peculiar position of the thigh, that is, the extreme adduction, and the extreme flexibility noticed right after birth, point to its intra-uterine origin.

REVIEW OF LITERATURE.

Kredel¹ was the first to call attention to the possibility of the congenital occurrence of this deformity. He reported two cases. The first case, seen at three years, was a double coxa vara with other congenital deformities of the limbs, namely genu valgum and pes equinovarus. The second case was unilateral coxa vara, genu

1. Kredel: *Centralblatt f. Chir.*, 1896, No. 42.

valgum and pes equino-varus of the same leg, together with absence of the patella, severe genu valgum and pes equino-varus of the other limb. The legs in these two cases lay parallel and adjoining and directed toward the left so that they formed an angle with the trunk of 135 degrees. The left or normal hip was abducted and the right or deformed hip was adducted. He states: "When one has seen this well-nourished and active child taking this position repeatedly, then one cannot doubt the fact that both the legs had been constrained and had grown in this position in utero for a long period."

The next report on this subject is by Zehnder,² who reports a double case in which the birth was normal and in which the child walked at the age of one year, but waddled at the very start. There were no other defects or deformities described. The same year Kirmisson,³ writing on this subject, reported the case of a child nine years old with rachitic deformities. The femoral diaphyses had enormous curves convex anteriorly and exteriorly. These curves were continued into the neck of the bone, producing coxa vara. He also reports two autopsies on rachitic infants shortly after birth, in which the deformities were the same as in his first case.

The next report is by Mouchet and Aubion.⁴ They report two cases. The first case was double, with unimportant history and no rickets. Both legs had a total concave bend inward. The second case was single, also without rickets. The authors further call attention to a radiograph of a hip of a child, which they believe to have been an intrauterine fracture of the neck, founding their belief on the radiograph. This lesion resembled the first two cases and suggested such a fracture as being possible, especially as postuterine fracture could be eliminated in both.

The next report is by Joachimstahl,⁵ who believes that in two cases which he reports he had a type of coxa vara which has clinical relationship with those occurring in the earliest period of extrauterine life, but he calls attention to a less typical form of congenital coxa vara, which has a relation to congenital defect of the femur. He reports a case in which a severe coxa vara occurred on the right side, with a defect of the upper part of the shaft, and an extreme coxa vara on the left. The author calls attention to a case which Drehmann reported, and reports one which is parallel, the two cases showing similar combinations. He calls attention to the fact that besides the defect in the femur and the bend at the upper end of the stump, there occurred a decided retardation of the ossification of the upper part.

Parallel with Joachimstahl's report we find the report of Reiner⁶ on the relationship between congenital coxa vara and congenital femur defects. He believes that congenital coxa vara is a preceding stage in a deformation process leading to the defect of the femur. He says that there are three types of this condition, each of which represents a different stage in the same process. In the first type, or the first stage, we have congenital coxa vara. At the same time the shaft is shortened both in length and caliber. The other two stages are represented by greater defects in the femur, even by total absence, but he emphasizes the fact that each one of the three types is a fixed stage of one and the same deformation process.

The process is referred to as a "modellirendes trauma" beginning in the amnion. What influences the forma-

tion of the deformity is the peculiar course of development through which the femoral shaft passes in its earliest period of embryonic life. At about the tenth week the proximal end of the femur is subject to a transformation process in which the thigh, which is normally abducted in relation to the pelvis, instead of this is now adducted and turned inward, while at the same time the formation of the angle of the neck of the shaft takes place.

Recently Clark⁷ reported a case of congenital coxa vara with associated deformities in a girl two years old, in which the Roentgen picture showed on the left side a typical coxa vara. The other deformities were a bend at the left knee joint of 45 degrees, with absence of the patella and the quadriceps. The foot was in a position of talipes equino-varus. On the right side there was genu recurvatum and talipes calcaneo-valgus. Besides this the radiograph showed the sacrum deflected to the deformed left side and that the upper side of the os innominatum was flattened.

Before concluding this review it is necessary to refer to the conditions described by Drehmann⁸ with reference to joint inflammation in sucklings and their etiologic relation to later deformities. He says that in the earliest age we may have a typical joint inflammation, beginning with local signs, followed by healing and later by deformity. He points out the relation of this condition to an infection such as the gonococcus, but not necessarily this organism. He says that a slight trauma during delivery would predispose toward auto-infection. Among these cases he says there are some so-called congenital dislocations and rarely a coxa vara. He reports two of the latter, one of them typical. The point is that such deformity, according to the author, can not be distinguished from the so-called congenital ones.

DISCUSSION OF CASE.

This review, we believe, covers all the important works on congenital coxa vara up to date. The relation of my case to those reported is of some interest. With regard to Drehmann's deformities at the suckling age, I do not believe that mine comes under that category, for there was no history of ophthalmia and no local signs pointing to inflammation.

The rachitic deformities in a few of the cases have nothing to do with mine, as there were no signs of rickets. The question of associated deformities or defects which occurred in so many is an interesting one, because the only other deformity in my case was that of a knock-knee. According to Reiner's belief that coxa vara is one stage in a process leading to femur defects, this case would readily find its place in his classification were it not for his observation that the shaft is shortened both in length and caliber even in the first stage. My case does not answer to this description.

As to the theoretical origin of the deformity *in utero*, we believe that the mechanical conditions are sufficient to explain that. Reiner's theory that at the end of the tenth week the angle of the neck of the shaft is determined by intrauterine conditions seems reasonable as an explanation which is founded on the fact that the femur, instead of being abducted, is adducted. In this connection it seems worth while to place a fetus in the position which my case seemed to have had at birth.⁹

7. J. Jackson Clark: British Journal of Children's Diseases, June, 1904.

8. Drehmann: Zeitschrift f. Orth. Chir., vol. xiii, Nos. 2 and 3, vol. xiv, Nos. 3 and 4.

9. For suggestion on this point I am indebted to Dr. O. T. Maynard.

2. Zehnder: Centralblatt f. Chir., 1897, No. 9.

3. Kirmisson: Revue d'Orthopédie, 1897.

4. Mouchet et Aubion: Gazette hebdomadaire de médecine et de chirurgie, 1899.

5. Joachimstahl: Zeitschrift f. Orth. Chir., vol. xii, Nos. 1 and 2.

6. Reiner: Zeitschrift f. Orth. Chir., vol. xii, Nos. 1 and 2.

Taking an eight months' fetus, hardened in formalin, we placed the right leg in its normal position as it occurred at birth, that is, flexed and abducted and then forcibly adducted the left leg on the belly so as to adjoin the other one. Tying the thighs in this position, we took a Roentgen picture of the fetus (Fig. 2.) The pic-



Figure 1.

ture shows a different relationship of the proximal ends of the femur to the acetabulum on the two sides. On the right, or normal side, the proximal end lies in a horizontal plane with the lower extremity of the pelvis. On the left, or adducted side, we find the end of the shaft well above the acetabulum in height. Besides this

an exactly similar deviation is shown in Clark's radiograph. This means that we have probably demonstrated correctly the mechanical nature of the intrauterine strain.

If my case took the position of this fetus in the uterus we have a right to assume that the relationship must have become fixed and maintained for a long period, but without interfering with the freedom of motion of the joint. Then, after birth, the joints' ends must still further have maintained their relation to the pelvis, the left end remaining higher than the right, even after both legs have been brought downward into their extrauterine positions. This hypothesis is favored by the fact that ossification in the neck takes place from the shaft and travels upward toward the head which ossifies in the acetabulum from a separate center during the first year.

An interesting feature in my case is a diminution in size of the epiphysis of the head. On Clark's radiograph an epiphysis is not recognizable. The explanation of this is either the faulty static conditions of weight bearing, or retarded growth, due to a lesion of the neck. The shortening of the neck, together with thickening, suggests an intrauterine fracture, but we are not able to conceive a fracture in the true sense where the bone has not yet been formed.

CONCLUSIONS.

Congenital coxa vara is usually associated with defects or deformities of other parts, commonly with the defect of the femur and with deformities of the lower limbs. It may be intrauterine in its strictest sense, it may be the result of an intrauterine infection, or it may be combined with congenital rachitic deformities. At least some of the strictly intrauterine cases are associated with peculiar positions of the thighs in utero, that is, adduction of the thigh in question. This peculiar position of the joint might explain a fixed deformity in the later developing hip joint, if we may assume that the proximal end retains its relative position to the acetabulum after birth.

MORPHOLOGIC AND HISTOGENETIC CHARACTERISTICS OF ENDOTHELIAL TUMORS.

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A careful examination of the literature, not only of the past, but also the present, has convinced me that many of the tumors reported as carcinomata and sarcomata as well as tumors such as Krompecher's "carcinoma endotheliale" or Hansemann's "adenoma endotheliale," are in reality pure endothelial tumors. The latter author even speaks of a "carcinoma sarcomatodes endotheliale," thus combining three distinct groups of tumors in one. Krompecher speaks of a "carcinoma endotheliale sarcomatodes," and calls an endothelioma a carcinoma with undifferentiated epithelium, naming it a "carcinoma endotheliale." It can only be an endothelioma which is capable of producing polymorphous structures leading to such complications of names.

The variability in the arrangement of endothelial cells and the ability of these cells to undergo metamorphosis, simulating the epithelial type at one place and the connective tissue type at another, has given rise to great confusion in the diagnosis of tumors. Morphologically, an endothelioma may resemble typical (adenoma)



Figure 2.

the pelvis is tilted upward on the left and the sacrum deviated toward the same side. This deviation of the sacrum toward the deformed hip is an important point, for

or atypical (carcinoma) organoid structures or typical (fibroma) or atypical (sarcoma) histoid growths.

It is extremely confusing for the student who has learned to diagnose common atypical histoid growths, as sarcomata and atypical organoid tumors as carcino-mata or endotheliomata, to read of the diagnosis of an atypical organoid tumor by Billroth as alveolar sarcoma; by Rindfleisch as sarcoma endotheliale; by Waldeyer and Kolaczek as angiosarcoma; by Fischer and Cramer as endothelial sarcoma, because atypical organoid tumors

their morphology (atypical organoid tumors are cancers). But according to their histogenesis, they are not cancers at all. The greatest confusion has thus been brought about in the nomenclature of a class of tumors, which could neither from a histogenetic point of view nor from a purely morphologic one be classified either with the epithelial or with the connective tissue tumors. Endothelial tumors simulate morphologically the

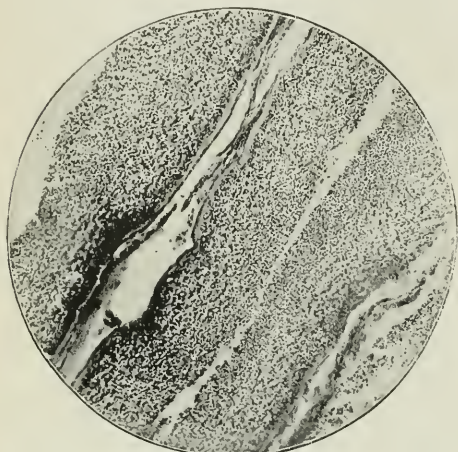


Fig. 1.—Lymphangioendothelioma intravasculare of knee joint.

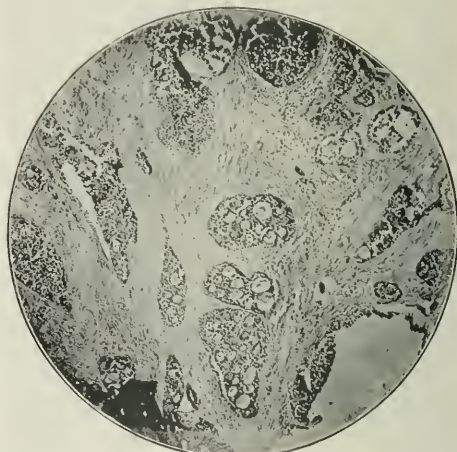


Fig. 3.—Lymphangioendothelioma intravasculare of uterus. Fibrous tissue stroma with cellular columns and islands of cells containing lumina.

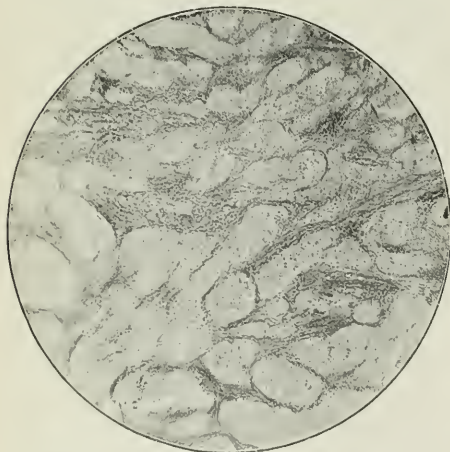


Fig. 2. Lymphangioendothelioma intravasculare of uterus. Alveolar structure. Van Gieson stain.



Fig. 4.—Lymphangioendothelioma intravasculare of uterus. Island of endothelial cells showing lumina filled with mucoid material. The cells around the lumina are somewhat cylindrical, imitating tubular glands.

exclude for him the connective tissue growths. Here the tumors are diagnosed by their histogenesis.

All these organoid sarcomata are really endotheliomata, and thus by their histogenesis are very closely related to the atypical connective tissue tumors, whereas by their morphology alone they resemble the organoid or epithelial tumors, and are called by Schulz endothelial cancer, by Neumann connective tissue cancer and brain cancer. They have been diagnosed according to

atypical epithelial tumors, and histogenetically, the atypical connective tissue growths; but they only simulate them and can not be included with either type. Whenever this was done it either upset the whole system of practical diagnosis, or it violated the only scientific classification of tumors, that is, a histogenetic one.

Unfortunately, we can not always see the earliest steps in the formation and propagation of a tumor in

the living tissue, but must depend on interpreting these processes from histologic examinations. In the endothelial tumors we compare the parenchyma with normal endothelium just as we divide epithelial tumors histogenetically by comparison with normal squamous and cylindrical epithelium into two classes. Here also our diagnosis lacks exactness at times, because we are unable to decide whether we are dealing with squamous

and lymph vessels may form histogenetically heman-gioendothelioma and lymphangioendothelioma, respectively.

Embryologically, these tumors should belong to the connective tissue group, but endothelial cells resemble in many respects epithelial cells, and stand about midway between epithelial and connective tissue cells, which

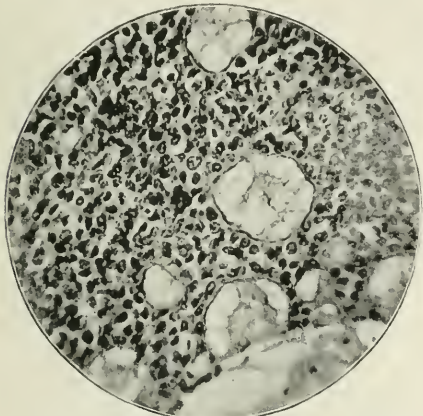


Fig. 5.—Lymphangioendothelioma intravasculare of uterus. Endothelial cell nest with lumina containing a delicate fibrillar network, which stains red with polychrome methylene blue and is coagulated by acetic acid.



Fig. 7.—Lymphangioendothelioma intravasculare of submaxillary gland.

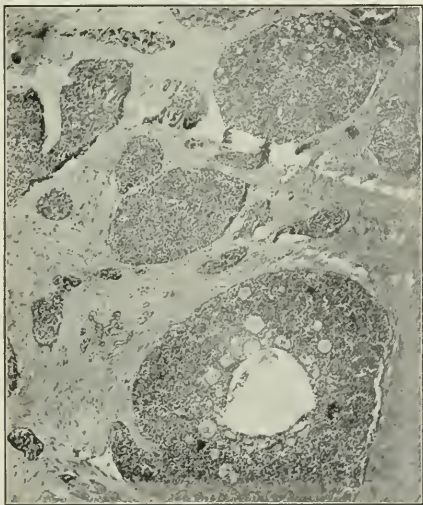


Fig. 6.—Lymphangioendothelioma intravasculare uteri. Structure similar to carcinoma. Large vessel with proliferated intima, containing many lumina. The vessel lumen is still visible.



Fig. 8.—Hemangioendothelioma perivascular of muscle sheath (arm).

or with cylindrical epithelium histogenetically. If we follow the general rule of attaching the end syllable "oma" to the name of the normal tissue which is the nearest related to the tumor tissue, morphologically as well as biologically, a growth which originates thus histogenetically from endothelium should be called endothelioma. Thus the endothelium of blood

accounts for the fact that endotheliomata have been called at one time epithelial growths (carcinomata), and at another time connective tissue growths (sarcomata). Histogenetically, they belong to the connective tissue tumors, because these flat endothelial cells may become

cylindrical, form spindle cells and appear as fibroblastic elements.

CLINICAL SIGNIFICANCE OF ENDOTHELIOMA DIAGNOSIS.

A correct diagnosis of endothelioma is of the greatest practical value to both surgeon and patient, because endothelial tumors differ greatly clinically from other malignant tumors in that they are of slower growth

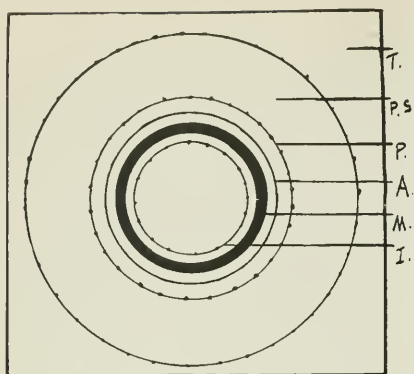


Fig. 9 (a).—Diagrammatic representation of perithelium and perivascular lymph space. T. Tissue. P. S. Perivascular lymph space. P. Perithelium. A. Adventitia of blood vessel. M. Media of blood vessel. I. Intima of blood vessel.

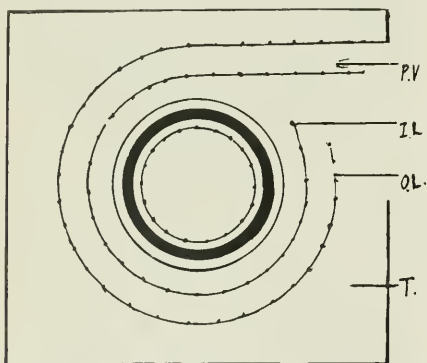


Fig. 9. (b).—Diagrammatic representation of inner layer of perivascular lymph vessel which may be mistaken for perithelium. P. V. Perivascular lymph vessel. I. L. Inner layer (endothelium) of perivascular lymph vessel which may be mistaken for perithelium. O. L. Outer layer (endothelium) of perivascular lymph vessel. T. Tissue.



Fig. 10.—Hemangioendothelioma perivascular of mammary gland.



Fig. 11.—Hemangioendothelioma perivascular of mammary gland.

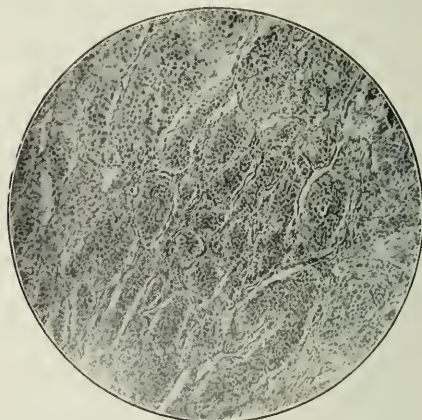


Fig. 12.—Hemangioendothelioma perivascular of cervical lymph node.

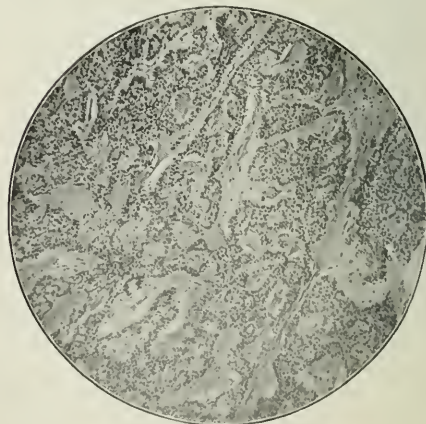


Fig. 13.—Cylindroma of parotid gland.

and do not produce metastases until late, when the tumor has reached considerable size. The neighboring lymph nodes are not early affected, as is common in carcinoma. The prognosis after thorough removal is much better and a cure much more probable than in carcinoma or sarcoma. Endotheliomata, however, are exceptionally prone to recur at the seat of operation, much more so and much earlier than carcinomata.

NECESSITY FOR A SYSTEM OF DIAGNOSIS.

In view of these clinical facts, a system of accurate diagnosis of endothelial tumors becomes of the greatest importance. Endothelial tumors are very commonly mistaken for carcinomata morphologically, because these tumors have an atypical organoid structure resembling epithelial neoplasms, whereas, histogenetically, they are of mesoblastic origin, and endothelial tumors are thus included under atypical connective tissue growths, although their cells are morphologically very different from connective tissue cells.

The struggle between the purely morphologic and the purely histogenetic classification in the different text-books, and the fact that these tumors differ very much in their clinical behavior from carcinomata and sarcomata, demonstrate the necessity of recognizing endothelial tumors as a class by themselves.

I can not at all agree with Hansemann and Ziegler, who propose to solve the problem by including endothelial tumors with epithelial neoplasms because they correspond in their structure and clinical behavior to the epithelial tumors of the ectoderm and entoderm. It is just this difference in clinical behavior, the slow growth, the late metastases and the better prognosis after thorough removal of endotheliomata, which distinguishes these growths from the carcinomata and makes a correct diagnosis so essential.

A practical system of diagnosis would seem to lie in entirely detaching endothelial tumors from the other tumor groups and in the establishment of a separate class of endothelial tumors, without disturbing the usual and useful system of histologic and histogenetic classification in this way:

1. Epithelial tumors (organoid); typical (benign), and atypical (malignant).
2. Endothelial tumors (organoid).
3. Connective tissue tumors (histoid); typical (benign) and atypical (malignant).
4. Teratoid tumors.

According to whether the endothelial proliferation originates from lymph vessels and lymph spaces or from blood vessels, and whether the inner endothelial lining of the vessels proliferates or the outer, the endothelial tumors may be further classified:

1. Lymphangioendothelioma intravasculare.
2. Hemangioendothelioma perivasculare.
3. Hemangioendothelioma intravasculare.

When marked hyaline degeneration is present in any of these morphologically distinct types, we may add to the above names "cylindromatosum." Instead of speaking of a perithelioma, we use the term perivasculare. I will discuss the reasons for the various changes later.

For a really scientific foundation, such a system should have not only a morphologic basis, but a biologic and histogenic one as well. Morphologically, endothelial tumors appear like carcinomata; histogenetically, they should be sarcomata. To justify the consideration of endothelial tumors as a separate class and to determine the various types of endothelial tumors which, morphologically, may simulate carcinomas, adenomas and sarcomas, it will be necessary to prove:

1. That endothelial cells can be considered as a special type of cells, biologically different from epithelial and connective tissue cells.

2. That certain characteristic morphologic distinctions exist between endothelial tumors and those they resemble morphologically (carcinoma) and histogenetically (sarcoma).

3. That such morphologically characteristic endothelial tumors can be traced histogenetically to pre-existing endothelium.

ENDOTHELIAL CELLS BIOLOGICALLY SPECIAL CELLS.

Since His invented the word endothelium for the flat cells which constitute the inner lining of the blood and lymph vessels and of serous cavities, and differentiated these cells from epithelial cells, pathologists have spoken of tumors originating from these cells as endothelioma until Stoeckh, Ranvier and other histologists began to classify them as true epithelial cells, because morphologically they resembled squamous epithelial cells, thus neglecting their apparent but embryologically contested mesoblastic origin entirely. The result was that some pathologists considered these tumors as epithelial neoplasms (carcinomata). The more observing noticed that these tumors differed morphologically from squamous cell carcinomata and spoke of endothelial cancers. Embryologically, it is generally conceded that endothelial cells of blood and lymph vessels are developed from the mesoderm, although some embryologists contend that they are formed by the entoderm. The mesoderm also is said by one school of embryologists to originate from the ectoderm and by another school from the entoderm. It is plain, therefore, that the pathologist can not classify endothelial tumors by embryologic data as a basis, either with the epithelial or the connective tissue tumors.

Borst² defines the endothelial cell as a morphologically and functionally well-characterized cell form, a modified connective tissue cell, specially differentiated at the shores of plasmatic streams, and includes under endothelial cells all cells which form one layer of flat cells, lining serous cavities, meningeal lymph spaces, inside and outside layers of blood and lymph vessels and the lymph spaces of connective tissue.

From a biologic point of view, endothelial cells can be readily differentiated from other connective tissue cells by their ability to secrete mucin, hyaline and amyloid material, thus imitating the secretory functions of epithelial cells (Heidenhain³).

On the other hand, endothelial cells are capable of producing connective tissues in the inflammations of serous cavities, blood and lymph vessels, producing granulation tissue, epithelioid cells, giant cells, as well as intercellular cement substance. They may again take on their embryologic columnar cell form and produce adenoma-like tubules lined with one layer of cylindrical cells like epithelium.

These are the reasons for the polymorphous nature of endothelial tumors which may simulate the structure of a carcinoma, an adenoma or various types of sarcomata and which have given rise to the confused diagnostic nomenclature in the literature of tumors. Borst has collected a number of such diagnoses from the literature, which, from the descriptions of the authors, are plainly endothelial tumors, as follows:

Robin, epithelioma of serous membranes; Schulz, endothelial cancer; Rindfleisch, sarcoma endotheliale; Fischer and Cramer, endothelial sarcoma; Neumann,

2. Lehre von den Geschwülsten, 1902, pp. 276 and 292.
3. Pflüger's Arch. vol. xlix, p. 209.

connective tissue cancer; Ewetzky, sarcoma plexiforme; Billroth, alveolar sarcoma; Waldeyer, Kolaczek and Hippel, angiosarcoma; Arndt and Maier, carcinoma cerebri; Schottelius, lymphangitis carcinomatosa; Billroth, cylindroma; Burkhardt, perithelioma; Böhm, sarco-carcinoma; Sattler, carcinoma sarcomatosum; Hansemann, carcinoma sarcomatodes endotheliale; Nauwerek, hyperplastic capillary angioma; Hansemann, adenoma endotheliale; Hansemann, carcinoma endotheliale.

GENERAL MORPHOLOGIC CHARACTERISTICS OF ENDOTHELIAL TUMORS.

Endotheliomas have certain general characteristics which distinguish them from other atypical organoid tumors (carcinomas):

1. The tumor cells in endothelioma are intimately connected with the stroma, and can not be brushed out of the stroma, as is the case in carcinoma in which the epithelial cells may also retract from the stroma and show spaces.

2. Endothelial cells produce intercellular cement substance and are closely packed together, whereas the epithelial cells in carcinoma have no intercellular substance and form no compact layers.



FIG. 14.—Recurrent hemangioendothelioma perivascular of arm, 4 months' growth.

3. In endothelioma delicate fibrillar processes extend from the walls of the alveoli into the proliferated endothelial cell masses. These are absent in carcinoma.

4. In endothelioma the cell masses consist of a dense mosaic of many layers of cells with small, sharply outlined nuclei, surrounded with a broad envelope of clear, glassy perinuclear protoplasm. Carcinoma cells have large vesicular nuclei, with a moderate amount of perinuclear protoplasm, more or less granular.

5. In endothelial tumors the cells are arranged in the form of cellular cords and cylinders (round masses in carcinoma), and may separate out hyaline material (cylindroma) or form lumina-like areas (sieve-like) in the cellular cords, due to secretory processes of endothelial cells.

6. To distinguish the endothelial tumors from sarcoma it is to be remembered that the former have an organoid, the latter a histoid, structure. According to

this definition every large-cell sarcoma with a well-developed stroma, which was formerly called alveolar sarcoma, would be called an endothelioma.

SPECIAL MORPHOLOGIC CHARACTERISTICS OF THE VARIOUS TYPES OF ENDOTHELIAL TUMORS.

From a large amount of material collected during the past eight years I have chosen six cases which will illustrate the various points made in this paper and the reasons for the adoption of a nomenclature, which is justified in view of its practical nature as well as its well-formed morphologic and histogenetic basis.

Lymphangioendothelioma Intravascular.—Such tumors occur most frequently in the salivary glands, skin, meninges, testicles, ovaries, bones, serous membranes, stomach and mammary glands. This tumor has an organoid structure, consisting of a fibrillar matrix and connective tissue stroma, arranged in rows (Fig. 1) or forming an alveolar structure (Fig. 2), and more or less solid cords or columns of endothelial cells. These solid cellular columns may be seen, at the circumference of the tumor, to be continuous with branching net-like narrow cellular strips which invade the neighboring connective tissue and produce the appearance of newly forming lymph vessels, and are in reality the youngest forms of the tumor cells, infiltrating and invading the surrounding tissue. The larger, solid and older cellular columns frequently have a sieve-like appearance, due to the formation of so-called lumina (Fig. 3). These lumina, although resembling the lumen of capillary lymph vessels within the endothelial cell mass, are produced by a secretory process of endothelial cells. This secretion may collect in larger or smaller amount. It gives the same reactions as mucin (Fig. 4). In my specimens the so-called lumina contained a fine fibrillar network which stains blue with alum hematoxylin and pink with polychrome methylene blue (Fig. 5). Acetic acid coagulated it. The endothelial cells around these so-called lumina are pressed on and take on cylindrical shapes, so that pictures like tubular glands may be produced (Fig. 4).

The endothelial lining of a lymph vessel may proliferate so that its intima consists of many densely packed layers of polygonal cells with small distinct nuclei (Fig. 1), abundant glassy perinuclear protoplasm and distinct intercellular cement substance producing a mosaic picture. The lumen of the lymph vessel may be obliterated (Fig. 2). If a lumen still remains in such a vessel and it happens to be surrounded with a good deal of fibrous tissue stroma the structure may resemble a glandular carcinoma very much (Fig. 6). The lumen of the lymph vessels then resembles the lumen of a gland, and the proliferated endothelial cells of the intima may then be taken for the atypical proliferation of epithelial cells which line the gland in many layers. Here the lumina, the small nuclei, the rich and glassy perinuclear protoplasm of the cellular cords help to differentiate this tumor as an endothelioma, particularly if other solid cellular cords also have lumina and if the younger circumferential areas of the growth show the invading, branching, net-like, narrow strips of proliferating endothelial cells in connection with the older, more solid, cellular columns.

The stroma frequently forms an alveolar arrangement so that such a tumor has been called alveolar sarcoma (Fig. 2). Ribbert goes so far as to include every large round-cell sarcoma with well-developed alveolar stroma under endothelioma. Borst warns against calling every round cell sarcoma which happens to have an insignifi-

cant fibrillar reticular framework, an endothelioma. He demands the proof of the endothelial origin of the tumor and then names it endothelioma alveolare. On the other hand, the fibrous tissue stroma may be so prominent in some of the endothelial tumors as to simulate scirrhus carcinoma or even fibroma. The so-called endothelial cancers of serous membranes, as well as the diffuse colloid carcinoma or carcinoma gelatinosum of the peritoneum, are also to be included under lymphangioendothelioma.

In addition to the points here made for a diagnosis of endothelioma, it is necessary that the tumor possess the general differential characteristics, already mentioned, which distinguish it from certain tumors of epithelial or connective tissue type. The special morphologic characteristics of a lymphangioendothelioma are well illustrated by the three following cases:

LYMPHANGIOENDOTHELIOMA INTRAVASCULARE OF UTERUS.

The first case is one of lymphangioendothelioma of the uterus which occurred in the private practice of Dr. Emil Ries, to whom I am indebted for the material.

This case is of general interest because very few endothelial tumors of the uterus have been reported, and of those found in the literature none presents an endothelial neoplasm so extensive as that shown in this case. It presents such characteristic microscopic features that a diagnosis was made from a cervix curettement before hysterectomy.

According to the literature, a curettement diagnosis of endothelioma of the cervix has been made only once by Gebhard, and in his case there were such extensive tumor masses in the parametrium that no operation was attempted.

Although the microscopic and diagnostic features described in the few cases found in the literature closely correspond with those I found in this case, not one of them shows the extensive, diffuse endothelial infiltration and proliferation present in this uterus, converting the whole organ, body and cervix into a solid neoplasm of the shape of a nearly normal uterus, the only portion escaping being a small area of the fundus.

The patient, aged 68, had four children and presented the clinical symptoms of uterine carcinoma.

Treatment.—A vaginal hysterectomy was done and, to our great surprise, a fairly normal-sized uterus was found of very hard and fibroid-like consistency, 3 inches (75 mm.) in length and $1\frac{1}{2}$ inches (37 mm.) in breadth.

Result of Operation.—The patient died $11\frac{1}{2}$ months after the hysterectomy with multiple metastatic tumors of both pleura, lungs, bronchial glands, diaphragm, liver, both kidneys, right adrenal, pelvic lymph nodes, rectum and left sacral plexus, all of which showed the same cell cords, with lumina and general structure as described in the uterine neoplasm.

Description of Growth.—The uterus was sectioned longitudinally. The uterine cavity was obliterated, except a small narrow slit extending $\frac{3}{4}$ of an inch (25 mm.) down from the fundus and just admitting a probe. This probe could also be introduced into the cervical canal for $\frac{3}{4}$ of an inch (25 mm.). The atresia extended from the middle of the cervical canal to the middle of the corpus. The anterior and posterior lips of the portio were enlarged and hard. The whole cervix and all the body of the uterus, except the fundus, consisted of a hard, tumor-like mass, retaining the shape and size of a normal uterus, but of a white, rather fibrous or scirrhus appearance. The fundus alone retained the usual color of uterine musculature for an area of $1\frac{1}{4}$ by $\frac{3}{4}$ inches (32 mm. by 25 mm.).

The cut surface of the growth had a smooth, white appearance, with fine irregular and round mosaic-like fields. The whole uterus, except the fundus, appeared to be one large

tumor nodule. The mucosa was smooth, atrophic and glistening.

No metastatic tumors were found by Dr. Ries at the time of operation.

Microscopic Examination.—Sections were made from all parts of the tumor and stained by the common and by special staining methods.

The whole uterus, except its fundus, showed a fibrillar ground substance, with solid cellular cords, cut in longitudinal and transverse sections (Fig. 2). These cellular cords reminded one, in their distribution and character, of lymph spaces. Lymph vessels and lymph spaces traversing this fibrillar connective tissue were lined with proliferating epithelioid cell masses. These cords of cells appeared like cellular cylinders of large diameter (lymph vessel endothelioma) or as delicate cell strips of two layers of flat cells branching here and there (lymph space endothelioma). Both of these forms were combined in some of the fields. The larger endothelial cell masses had numerous so-called lumina containing mucoid material (Figs. 3, 4 and 6).

Other portions of the tumor looked like scirrhus carcinoma, and the dictum of Hansemann, that most scirrhus carcinomata of the uterus, stomach and esophagus are endotheliomata, will find by these specimens a substantial support. There were large areas with a stroma of dense fibrous tissue and alveolar arrangement of endothelial cells, as seen in glandular carcinomas (Fig. 6). This organoid, carcinoma-like type is found more often in endothelioma of lymph vessels than of lymph spaces. The so-called lumina contained a delicate fibrillar network (Fig. 5) or a homogeneous material (Fig. 4) which stained pale-blue with hematoxylin. With polychrome methylene blue the tissue stained blue, whereas the delicate network in the lumina stained red, that is, like mucin. Acetic acid also coagulated it.

Some of the alveolar cell nests could be seen to be continuous with delicate cellular cords and a network of lymph spaces with proliferating cells. With the Van Gieson stain the stroma of the tumor was seen to consist entirely of a fibrillar connective tissue reticulum, all involuntary muscle fibers having practically disappeared (Fig. 2). The mucosa, lining the cavity of the uterine body, showed some interstitial hyperplasia, cystic and atrophic glands and a few small endothelioma metastases with characteristic lumina between the cystic glands.

LYMPHANGIOENDOTHELIOMA INTRAVASCULARE OF THE KNEE JOINT.

This case occurred in the practice of Dr. A. H. Ferguson.

Patient.—A night watchman, aged 36, noticed, a few months after a fall on his knee, a small growth at the outer side of the patella. When removed by Dr. Ferguson it appeared as a circumscribed, encapsulated, oval and flat fibrous growth attached to the synovial membrane.

Microscopic Examination.—Microscopically the tumor consisted of a fibrillar connective tissue stroma which formed a network of long, wavy strands when cut longitudinally and circles when cut transversely, inclosing densely packed cellular cords of round cells with small nuclei and abundant, transparent, perinuclear protoplasm, with distinct intercellular cement substance (Fig. 1). Some of these cellular columns had a large or narrow lumen which contained a small amount of finely granular or mucin-like material; in others the lumen was obliterated and a solid cord of proliferated endothelial cells of the intima was formed, surrounded by strands of fibrous connective tissue. Only a few lumina were seen in the solid endothelial cell-cylinders.

Subsequent History.—The diagnosis was lymphangioendothelioma, but was doubted because for $2\frac{1}{2}$ years the patient had no recurrence of the growth. A nodular growth then appeared in the popliteal space, and after this had attained the size of a hen's egg Dr. Ferguson operated again, but was unable to remove the entire growth because the internal popliteal nerve and the popliteal artery and vein appeared to be included in the lobulated tumor mass, which was found partially circumscribed, partially infiltrating the tissues in the popliteal space. Microscopic examination revealed identically the same structure as that of the extrapatellar tumor removed $2\frac{1}{2}$ years previously.

Amputation of the limb was not consented to by the patient, and he again attended to his regular duties as night watchman for eight months, when the growth in the popliteal space gradually enlarged and, for the first time, three and one-half years after the appearance of the primary tumor, the inguinal glands showed metastatic enlargements, which made the prognosis bad, although the patient now insisted on amputation and was operated on. He died about eight months later with multiple metastases in many organs.

Remarks.—I am firmly convinced that if the man had consented to an amputation when Dr. Ferguson and myself advised it he would have lived. This case illustrates well the slow growth of endothelial tumors and the late metastases as compared with carcinomata and sarcomata, and that the early recognition of an endothelioma by microscopic examination should be an indication for thorough operative removal, with a very favorable prognosis.

LYMPHANGIOENDOTHELIOMA INTRAVASCULAR OF SUB-MAXILLARY GLAND.

To contrast the two lymph-vessel endotheliomata just described microscopically with a so-called lymph-space endothelioma (although the two are frequently combined in one tumor, in which case the lymph-space growth is probably nothing more than a secondary invasion by atypical endothelial cells), I will describe briefly a third case of a pure lymph-space endothelioma of the sub-maxillary gland occurring in a woman, 69 years old, who was recently operated on by Dr. Allport (Fig. 7).

A rich stroma of fibrous tissue contained in narrow slits rows of small endothelial cells of somewhat columnar shape in one or more layers. Those lined with but one layer of cells looked like tubular glands, as long as a lymph-space lumen was still visible. When the proliferation of these morphologically characteristic endothelial cells became more pronounced, distending the lymph spaces and producing a small island of densely packed cells, characteristic lumina appeared.

The same structures also were found in the adventitia of the larger blood vessels (perivascular lymph spaces) of this growth.

HEMANGIOENDOTHELIOMA PERIVASCULAR (PERITHELIOMA).

The common tendency nowadays is to call the former angiosarcoma a perithelioma, in the attempt to indicate more accurately the histogenesis of the tumor. To what confusion this has led is best illustrated by a study of so-called peritheliomas as reported in recent literature in the light of our present anatomic or histologic knowledge of perithelium.

Such perithelial tumors have been reported from organs and tissues whose blood vessels are known to have no perithelial membranes at all, that is, from non-perithelial organs. Even in so-called perithelial organs, the capillaries never are covered with a perithelial membrane, although some authors speak of perithelial tumors as arising from blood capillaries. Von Ebner-Koellicker⁶ state that the outer surface of endothelial cells of blood capillaries is in direct contact with the ground substance of the surrounding tissue. It is just as wrong to speak of a perithelioma as arising from a lymph vessel because perithelial membranes cover the outer surface of the adventitia of blood vessels only in a one cell layered mosaic of flat endothelium-like cells. They have only been found with blood vessels of certain organs called perithelial organs.

A perithelioma can not, therefore, be spoken of as arising from lymph vessels nor from blood capillaries. This, then, confines the term, perithelioma, to certain tu-

mors of the blood vessels of perithelial organs only. Yet so-called perithelial tumors or angiosarcomata do occur in non-perithelial organs which are morphologically similar, but only similar, to the true peritheliomata. From a histogenetic point of view it is desirable that the term perithelioma be reserved for a class of tumors arising from perithelium only. The term perithelium was applied by Eberth⁷ to an endothelium-like membrane of flat polygonal cells which lines the outer surface of the adventitia of the blood vessels of the brain and cord. The perithelial membrane must be differentiated from the perivascular lymph spaces of His,⁸ which he found surrounding the adventitia of arteries, veins and capillaries of the central nervous system (which has no lymph vessels). The perithelium is the outer lining of the adventitia of blood vessels, outside of which is the perivascular lymph space (Fig. 9).

Driessen⁹ described a bone tumor as growing from the perithelium of blood capillaries and then named it endothelioma. This explains better than anything else the confusion which exists in the literature on perithelioma. Driessen first claims that the tumor started from the perithelium, although no perithelium has been found in the vessels of bone. He claims it started from perithelium, but names the tumor an endothelioma, because he appears to consider perithelial cells as the outer endothelial layer of a perivascular lymph space. Bormann,¹⁰ in a very careful review on vascular tumors, remarks that Driessen's tumor was not a perithelioma because bone vessels have no perithelium, and it could not have been a perithelioma growing from capillaries, because capillaries never have perithelium. In regard to the latter point, it might be well to remember that, the more delicate structure of capillaries in various vascular regions is not yet sufficiently understood, and that for many blood capillaries it has been proven that they are surrounded with a cellular sheath, which Auerbach and Eberth speak of as vascular perithelium and others as capillary adventitia. Sheaths of peculiar cells are found around the capillaries of the carotid gland,¹¹ the coccygeal gland,¹² and the testicle.¹³ The coccygeal gland, discovered by Luschka¹⁰ and studied minutely by Krause,¹¹ Arnold¹² and Scrotoli,¹³ has capillaries and small veins which have an adventitia of polygonal small cells.

Volkman wants to call these cells capillary adventitia cells and not real perithelial cells. Borst calls them perivascular cells or adventitia cells of capillaries, and says that their pathologic proliferation causes cylindrical cell mantles around capillaries like those of perithelial cells. Bormann says that capillaries never have a perithelial membrane. Perithelial cells have also been described in the adrenals, pineal gland, mammary glands and salivary glands, and many authors consider them closely related to endothelial cells. It is necessary to emphasize the fact that the perivascular lymph vessels, which are found in many organs, also have nothing to do with perithelial membranes, so that the inner layer of the perivascular lymph vessel must not be mistaken for perithelium (Fig. 9).

In order, then, to arrive at a histogenetic classification of these tumors we would have to be able to distin-

6. Virchow's Arch., vol. xlix.

7. Zeltisch. f. wiss. Zool., vol. xv, p. 127.

8. Ziegler's Beiträge, vol. xiv, p. 474.

9. Virchow's Arch., vol. cxlv, p. 315.

10. Virchow's Archiv., vol. xviii.

11. Allgem. Anat., 1876, p. 323.

12. Virchow's Arch., vol. xxxii and xxxiv.

13. Virch. Arch., vol. xliii.

guish whether the proliferation of cells had their origin in the true perithelium of blood vessels which lines the outer surface of the adventitia in perithelial organs (perithelioma); in the inner or both endothelial layers of a perivascular lymph space; or, in the adventitia cells or perivascular cells of blood capillaries.

Pick and Rosthorn call all these endothelium-like layers perithelium and their proliferation a perithelioma. Borst also wants to use the name perithelioma for all these tumors, with the understanding that it is a kind of offspring of endothelioma. In case one is able to prove that the growth originated from the endothelium of the perivascular lymph spaces, it should be called endothelioma perivascular (Borrmann's periendothelioma).

Borrmann thinks he can distinguish morphologically between the two types as follows: Perithelioma, when the vessels are surrounded by many layers of cells, which are arranged radially and vertically to the wall of the vessel; periendothelioma when the vessels are surrounded by many layers of cells which are arranged concentrically around the wall of the vessel.

From a careful study of my perithelial or perivascular tumors, I am unable to verify Borrmann's morphologic distinctions, and in view of the existing uncertainties and controversy as to the nature of perithelium, endothelium of the perivascular lymph spaces and capillary adventitia cells, I prefer to use the name hemangioendothelioma perivascular, on account of the great histogenetic and morphologic similarity of perithelium, endothelium of perivascular lymph spaces and capillary adventitia. The three following cases illustrate such tumors:

HEMANGIOENDOTHELIOMA PERIVASCULARE OF LEFT ARM.

The patient, a married Polish laborer, aged 38, came to Provident Hospital under the care of Dr. J. C. Hepburn, to whose kindness I owe the history of the case.

Family History.—The patient's father is living, aged 80; his mother is dead, cause unknown; two brothers are living and well; one sister is living, one died at the age of 8 years. The patient has never been ill, except that when 7 years old he had whooping cough.

Present Illness.—The patient was first seen Dec. 1, 1903. He had excruciating pain in the left deltoid region for six weeks. He had been unable to sleep and was losing in weight. He had a small growth for 15 years over deltoid without discomfort until six weeks before applying for treatment, when the tumor began to grow rapidly and became daily more painful. He had lifted and carried heavy pieces of lumber.

Examination.—Physical examination revealed an oval tumor six inches long in the left deltoid region just below the axonion process; the surrounding tissue was inflamed. The tumor was just below the skin, which was freely movable over the growth, the latter being attached below. The tumor was hard and fibrous.

Operation.—Dec. 4, 1903. An encapsulated tumor was found attached to the intermuscular septum between the deltoid and triceps muscles; the periosteum was not involved. The wound healed by first intention, and the patient left the hospital in seven days and returned to work.

Description of Tumor.—The tumor measured 13x12x8 cm. It was oval, with globular bosses, and was distinctly encapsulated except at two places. One portion of the growth was of stony hardness, 6x6½ cm. There were several cysts, one 2½ cm. in diameter containing a clear yellow fluid. The cut surface was shining white, lustrous in the center and finely granular and friable at periphery.

Microscopic Examination.—The tumor consisted of a tangled mass of blood vessels, whose walls were surrounded by a mantle of densely packed cells, round and spindle-shaped, and arranged in circular layers around and close up to the distinctly visible intima, the lumen of which was filled with red blood corpuscles. These cellular tubes were either confluent or sepa-

rated by myxomatous tissue (Fig. 8). The patient was advised to have a complete excision of the upper extremity at once, but he did not consent and continued at work.

Subsequent History.—The man returned, four months later, emaciated, unable to sleep, no appetite, temperature 102, pulse 120. He had had no pain for two months after the operation and was able to use his arm well. Then a bean-sized, painful growth appeared at the site of the primary tumor and grew rapidly during the last two months to the tremendous size as shown in Figure 14. The tumor involved the whole external and posterior aspect of the upper three-fourths of the arm. It showed large nodular masses, with necrotic areas in the center of the two lower lobes. The axillary glands were enlarged. The growth was diffuse, the whole mass fixed and the skin adherent.

Second Operation.—April 29, 1904, the whole arm, outer two-thirds of the clavicle and the scapula were removed and the axillary glands carefully dissected out. Most of the wound closed by first intention and by the thirteenth day after the operation the man was walking about.

Result.—This extensive growth microscopically was the same as the first small tumor. On June 2, 1904, Dr. Hepburn showed the patient at the south side branch of the Chicago Medical Society. As far as known there has been no return of the growth.

HEMANGIOENDOTHELIOMA PERIVASCULARE OF MAMMARY GLAND.

If we now compare with this tumor, which grew from a non-perithelial tissue (muscle sheath of the arm) a hemangioendothelioma perivascular of the mammary gland, which is a perithelial organ, we are at once struck by the histologic similarity of the blood vessels, cell mantles and myxomatous tissues between the cellular tubes (Fig. 10), except that the cell mantles consist here principally of distinct round cells, whereas in the former case many spindle-shaped cells are intermingled with round cells. In both tumors the cells (Fig. 11) are arranged in a circular manner around the distinct endothelial ring forming the intima. According to Borrmann's differentiation, a true perithelioma should have a mantle of cells which are radially arranged. When the cell mantle consists of cells arranged in circular layers (parallel to vessel wall instead of vertically) he wants to call it a periendothelioma. If both these tumors are false peritheliomata, it will be interesting to add here another perithelioma, which goes to show that this morphologic distinction can not always be relied on.

This case occurred in the practice of Dr. Weller Van Hook, to whom I am indebted for the material.

History.—A woman, aged 35, had a slowly growing tumor of a lymph node of the neck for three years, which a former operator removed as a tuberculous hyperplastic lymph node. A new growth rapidly appeared in the same locality, which he again removed as a tuberculous gland. A third growth appeared in the same locality, which was removed by Dr. Van Hook and diagnosed by him as a neoplasm, probably malignant, although it had a capsule.

Microscopic Examination.—A thin, fibrous tissue capsule was seen. No lymphoid tissue could be found anywhere. The whole tumor consisted of a dense network of capillaries, with distinct endothelial walls, surrounded by densely packed mantles of proliferating, round perithelial cells, with distinct nuclei and abundant transparent perinuclear protoplasm. The majority of these cells were arranged concentrically and parallel to the vessel wall, the remainder vertically (Fig. 12).

HEMANGIOENDOTHELIOMA INTRAVASCULARE.

These originate only from blood capillaries, and have been called by Ziegler, hemangioma hypertrophicum; by Nauwerek, hyperplastic capillary angioma; by Borrmann, capillary endothelioma. They consist of a stroma of fibrous tissue with gland-like tubes filled with blood

and lined with one layer of endothelial cells which may be cubical or cylindrical in shape.

Another type of these tumors consists of a stroma of spindle-shaped cells. Irregular or round areas of red blood corpuscles are seen to be enclosed by mantles of endothelial cells which represent the proliferated intima of blood vessels, forming several layers of epithelioid cells. The lumina of these cellular tubes contain erythrocytes or may be entirely obliterated in some portions of the tumor, thus forming solid cords of cells.

OTHER ENDOTHELIAL TUMORS.

All the endothelial tumors are markedly subject to mucoid hyaline and amyloid degeneration, due to cellular metabolic disturbance, which leads to peculiar deposits of these products in the tissues. Hyaline metamorphosis of the vessel walls may lead to obliteration of the vessels, or the hyaline substance may be a degeneration product of endothelial cell masses. Such endothelial tumors are called cylindromata. (Fig. 13.)

Psamomma and cholesteatoma also are generally classified now with the endothelial tumors but can not be further discussed here.

THE USE OF SHEET PARAFFIN IN LESIONS OF THE NOSE AND EYE.

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AND

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Intranasal operations are for the most part simple procedures and eminently satisfactory both to the patient and to the surgeon. Sometimes following cauterizing work, however, removal of septal deformities, and even in some cases after turbinectomy, the postoperative swelling is a very troublesome and even serious complication, giving rise to adhesions that may leave the patient in a worse condition as regards nasal respiration than before the operation. As is well known, the reaction following operation varies greatly in different patients—the mucous membrane of some being particularly sensitive to any irritant and intolerant of operative work or even of postoperative treatment. In such individuals the liability of adhesions forming even at a period comparatively remote after operation is a serious possibility.

Some cases are due to carelessness on the part of the patient or to insufficient after-treatment; this possibility, of course, is largely increased in transient patients or those from out of town whose finances or business affairs make more than a very short stay impossible.

It has been our experience that in these cases in which the after treatment has to be left to the patient or to the family physician adhesions are almost sure to follow.

The worst cases are those in which septal outgrowths occur in conjunction with hypertrophied turbinates, and especially when both are operated on with only a short interval between. Several experiences of this kind have made us extremely careful in this particular, and we feel much less anxiety on this account since using the paraffin splint.

We refer to the sheet paraffin and wax used by dentists. The paraffin sheets are five and five-eighths inches long, three inches wide and one-sixteenth inch thick, easily cut and bent in any desired shape and soft enough to conform to the shape of the space in which they are placed.

The accompanying illustrations will serve to show the shape we generally cut them and how they look in position (Figs. 1 and 2). The posterior end is rounded and the edges are smoothed to facilitate its introduction and the anterior end is so shaped by cutting off the lower portion that its end hooks up under the front of the nose, being at the same time invisible at the anterior nares.

The various other devices in use for this purpose leave much to be desired. A long gauze tampon, such as is packed into the nose after turbinectomy, will not be tolerated longer than from twenty-four to forty-eight hours. It is very painful, retains the secretion and is an inviting field for infection. It is after the danger of hemorrhage has passed and the tampon has been

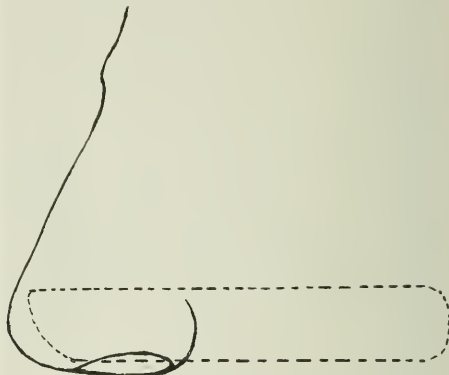


Fig. 1.—Showing splint in position in nose.

removed that the indication for the paraffin splint arises. The splint could hardly exert any influence on the control of hemorrhage except in an extremely narrow nose or by acting as a foreign body, thus favoring coagulation. We have never used it, however, for this purpose.

The Bernay splints, though less disagreeable, are open to the same objections as the gauze tampon. The hard rubber and silver perforated splints are disagreeable and painful; they also do not extend far enough back to do much good in preventing adhesions. The expedient of keeping the postoperative swelling reduced by instillations of adrenalin is in some cases satisfactory, but there are certain disadvantages. In the first place,

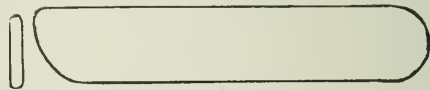


Fig. 2. Showing usual size of splint.

the patient is apt to neglect his visits to the office, and often firm adhesion results, though the patient be entirely ignorant of anything wrong.

Neither is it a wise plan to put in the hands of a patient for indiscriminate use a drug of such powerful properties. We have no doubt that it can seriously hinder the regeneration of tissue, and the fact that it has produced local necrosis after use must not be forgotten.

Only common sense surgical principles are indicated in the employment of paraffin. The shape of the splint varies with the area to be separated, being cut to suit each particular case. We handle the paraffin with clean hands and shape it with clean instruments, and as an additional precaution, just before introduction we scrape

the whole surface thoroughly, thus rendering it absolutely sterile.

We have never tried keeping it in solutions of the antiseptics in common use, as in the strength required they would prove an irritant to the mucous membrane, and in any event our method seems to be the most direct and practical.

METHODS OF APPLYING THE SPLINT.

Let us consider in detail some of the ways in which we use this material after it has been prepared as above.

First After Cauletry Work.—Practically all this work is confined to the inferior turbinate, and is only done there in selected cases. Immediately after the cautery we apply a hot weak carbolie acid solution to control any oozing; we then use an antiseptic oil spray and introduce the splint as shown in the illustration. It is applied over the full length of the burn, care being taken not to push it too far back as that will produce a choking sensation. The width of the material as supplied being a little in excess of the distance from the anterior to the posterior nares in the adult, in cases where a groove is burned along the entire surface but very little need be removed.

It is best in these cases to have the splints full length, for the patient will speedily inform one as soon as it is too far back; and above all, it is desired to avoid a posterior adhesion, which might happen were the splint too short. After the splint is introduced and it is pushed up in place the anterior end is bent to the septal side and made to conform to that surface, rendering it invisible and more comfortable to the patient. We have yet to find a patient who complained of serious discomfort caused by the splints.

The after treatment is simple. We leave the first splint in for four or five days, having the patient report each day chiefly to see that the splint is in proper position, though in only a few cases have we found that they changed their position. We instill a few drops of weak adrenalin solution wash around the splint thoroughly and follow by an antiseptic oil spray.

As a rule the patient has some breathing space along the sides of the splints and sufficient space to expel the secretions, which, of course, are more abundant than under ordinary conditions. About the fifth day, as a rule, the first splints are removed, the site of operation thoroughly cleansed and inspected and new splints inserted. We do this not only for the purpose of cleansing and inspecting, but also because we have found that if left in longer the splints sometimes break in two, and this we try to avoid, for while not a danger, it is annoying and apt to frighten the patient. This accident has happened several times in patients who did not return for after treatment, and while we have never had any difficulty in removing the different portions, such might happen if the patient should go to some other surgeon, especially as the material we use is exactly the color of mucous membrane.

The second splint also remains in about five days, the patient returning each day or every other day, according to the progress of the case. To be efficient, of course, the splint must remain in position till the membrane is healed. We advise against being afraid of leaving the splint in too long. Very often at the end of four or five days if the splint is removed the space will look clear and free, but if the splint be discontinued at this time and if the patient should remain away adhesions are almost sure to follow. Then, too, there is no particular necessity for haste in their removal. The fact that

we have had patients remain away from the office over a week without any treatment whatever shows that the paraffin splints are very well borne and can in no sense be considered as irritants.

In none of these cases was there any evidence of infection or odor due to retained secretions, despite the fact that the patients had gone so long without nasal cleaning.

Second, After Submucous Resections of the Septum.—In these cases we use the Bernay splints for the first forty-eight hours, after which they are removed and the paraffin cut the shape of the Bernay splints, but slightly longer. The splints are applied on both sides and if necessary held snugly in place by a little gauze placed in the anterior nares, the outside of the splint. This gauze is removed as often as soiled. In these cases, of course, the important point is not so much the prevention of adhesions as the support given to the septum, and the paraffin subserves this purpose admirably (Fig. 3). The after treatment is the same as that given under cautery work.

Third, After Turbinatectomy.—Immediately after the removal of either turbinate, or a part of either, we invariably pack with a gauze tampon, as we have found that to be the only safeguard against hemorrhages, though we have never used the benzoin collodion dressing. This packing we remove, as a rule, in twenty-four

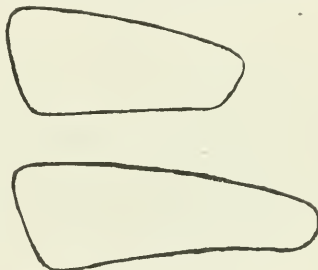


Fig. 3.—Showing splints after submucous resection.

hours, or at the longest, forty-eight, and if the nose be very narrow or if there seems to be any chance of the postoperative swelling bringing the raw surface in contact with the septum we insert a paraffin splint as wide as the anterior nares will admit. We are careful, too, just before introducing the splint to remove any tags or shreds of mucous membrane that escaped detection the day before, as it materially assists the repair of the wound.

It is especially important in these cases where the least tendency to the formation of adhesions exists to allow the splints to remain in position till the wound has thoroughly healed, despite the protests of the patient or the number of times it is necessary to change the splint, for it is in these cases that the most extensive and troublesome adhesions occur, despite the fact that the entire turbinate has been removed at the operation. The after treatment is the same as described, though extending over a longer period.

Fourth, In Septal Deformities, Spurs and Ridges.—In these cases, if possible, we do a submucous operation, though even in that case we generally insert a splint, as it holds the flaps of the membrane down nicely and if any has been removed keeps the wounded surface separated from the turbinate. After treatment is the same as detailed above.

REMARKS.

We do not wish to convey the impression that we resort to this expedient after all our intranasal surgery, though we do so very probably in over 50 per cent. We are certain that it has prevented adhesions for us many times when otherwise these would have formed, and it has thus simplified the recovery and saved the patient much discomfort from separating adhesions with a probe each day.

PARAFFIN IN EYE WORK.

We have used this method in our eye work in practically only one condition. In cases in which there are extensive lesions of the conjunctiva, as in burns, and adhesions are threatened, or after operations for symblepharon we have used the paraffin cast.



Fig. 4.—Splints used in eye work.

A piece of the material is shaved down to about half its thickness, moulded over an artificial eye, and a circle cut out in the center so that it does not encroach on the cornea; it is then inserted into the conjunctival sac and allowed to remain there as long as necessary. The cleansing and after treatment can be carried out with very little difficulty and the material is well tolerated. We have used it in this manner in three cases, and in all it proved satisfactory (Figs. 4 and 5).



Fig. 5.—Side view of splints in Fig. 4.

This method of employing paraffin, so far as we are aware, is original. The senior writer of this article conceived this idea while working with Dr. Muelier at the Poliklinik in Vienna and spoke of it to him; owing, however, to the difficulty of obtaining the material but very little opportunity was given for a trial of the method. This was in 1898. Since returning to this country, however, it has been used in our office continually, and its field of usefulness seems to extend. We offer this to those interested in this work, believing it to be a useful device in the class of cases that we have described.

Protection of the Eye in Radiotherapy of the Lids.—The *Revue Gén. d'Ophthalmologie* for January contains a communication from Van Duyse and De Nobele describing the fine results obtained with radiotherapy applied to the eyelids and adjacent parts without fear of injuring the eye. The eye is protected with a shell made like an artificial eye which is placed over the eyeball after it has been anesthetized with cocaine. The shell causes no disturbance while it protects the eyeball completely. It is made of what is called "Paris enamel." Experiments with shells made of metal, glass and other materials showed that they were either irritating or were permeable for the Roentgen rays.

THE MEDICAL DEPARTMENT OF THE ARMY AND THE ADVANTAGES IT OFFERS TO THE YOUNG PRACTITIONER.

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Medical students and young practitioners should be acquainted with the advantages to be gained by entering the Medical Department of the Army, and a brief survey of the subject may prove of interest and benefit to them, as well as reciprocally beneficial to the service, by drawing to it desirable candidates.

Representatives of the Medical Corps of the Navy and of the Public Health and Marine-Hospital Service have described the advantages to be derived from entering their respective services. While these undoubtedly offer attractions equal in degree to those held out by the Army, it is proper that all sides of the question should be presented in order that a young physician who makes up his mind to enter one of the public services may make his choice according to his taste and temperament. I shall endeavor to give a plain, unvarnished statement of facts concerning the Medical Corps of the Army to enable one to decide intelligently whether or not it will be to one's interest to enter the corps. Very few physicians who receive appointments as assistant surgeons ever leave the service, and it will be discovered that in those rare cases some good business opening in civil life, or the inheritance of a large fortune, or something of the kind, is the reason for their withdrawal. It is also significant that in many, if not in most instances, when men have resigned from the service they have re-entered it at a later date or have endeavored to do so. Two talented and accomplished young medical officers resigned from the Army a short time ago on the strength of flattering offers in civil life, and soon came back asking for readmission, but unfortunately they were barred by the age limit.

The Surgeon-General has had printed a pamphlet entitled "Circular of Information in Relation to Appointment in the Medical Corps," which gives all the data requisite to a complete understanding as to how to get in, pay, emoluments, duties, examination, etc., and can be obtained by request made to the Surgeon-General, U. S. A., Washington, D. C. I shall endeavor to point out to you on this occasion the advantages to be realized from an appointment in the Army based largely on my own experience.

First, let us consider the question from the abstract standpoint of personal advantage to be obtained from a commission. Temperaments and aspirations differ and some men have the idea that the opportunities of an able and ambitious surgeon would be confined within narrow limits by the discipline and subordination required by military life, and that he would have no chance of attaining the eminence offered by the wider field of civil practice. This is an error. An able man has as great, if not a greater, opportunity of rising to fame in the medical service of the Army as he enjoys in civil life. Laveran, a French military surgeon, elucidated the mystery of malaria, and Reed, of our own Army, discovered the cause of yellow fever—two discoveries that have done more to advance sanitary science and to effect the practical reduction of human mortality than any others since Jenner demonstrated the protective power of vaccination. The names of Reed and Laveran are not

the only ones which have been rendered immortal by their work; there are many others. Beaumont, Billings, Otis, Woodward, Tripler and Sternberg are a few whose names occur to me at this moment. Baron Larrey, Esmarch and Longmore are military surgeons whose names are doubtless familiar to you all.

Indeed, in the greater freedom from business cares guaranteed by a fixed salary and in the ampler leisure afforded to the army surgeon by his well-defined duties, the man of scientific inclinations should find greater opportunity for scientific work which should give him reputation and standing than he would be likely to find in the midst of a busy, bread-getting practice.

The question of bread-getting is at once and finally settled for the newly commissioned Assistant Surgeon. But the question may be asked, Would not the opportunities for pecuniary gain be greater in civil life? I will answer, Only in exceptional instances, and it must be borne in mind that life and health are uncertain assets, and that lost health means lost practice and lost income in civil life, whereas in case of disability in the Army the pay goes on, and provision is made for retirement on three-fourths pay in case of permanent disability incident to service or for age. The pay and emoluments of officers are ample for all necessities at first, and later, when increased by rank, it will be found an easy matter to lay by a portion of the monthly pay for subsequent investment. It must be understood that the pay proper does not represent all the income of an officer by any means. In addition to his monthly salary, with its percentage increase from length of service, he draws commutation of quarters at the rate of \$12 a month for each room to which he is entitled, in case he is not furnished with quarters when on duty. His mileage when he makes an official trip without troops is usually greater than his outlay; he buys commissary and quartermaster supplies at the prices paid for them by the government, which is less than wholesale rates; fuel is furnished him at a cost of about one-half the amount his civilian neighbor pays for it; he is entitled to forage for two horses; he is supplied with stationery, and, finally, when he serves outside the continental limits of the United States, he draws an additional increase of 10 per cent. on his pay. In case he is a married man, or has any one dependent on him, he can guard against their future needs by an insurance policy, which during his life he can easily keep paid up. In short, the advantages arising from a fixed income are so many and so obvious that their consideration need detain us no longer.

Consider, for a moment, the difference between the practice of medicine in the Army and in civil life. The fundamental necessity for success in either case is thorough professional knowledge, backed up by some natural ability, but in civil life there is a third qualification which is as necessary as either of those mentioned, namely, business ability. In the Army, the latter is not an important factor, and the surgeon with business ability has no advantage in winning a record for efficiency over his brother officer who is not so gifted. The business side of a medical man in the Army finds its sphere in administrative work, which deals with reports and returns and the control of men, and that is a matter of special training. This is a part of the Army doctor's training that is as indispensable to his efficiency as his professional knowledge, and in certain contingencies even more so. I may remark, in passing, that it is this deficiency in the newly appointed volunteer surgeon,

his lack of knowledge of army methods, that detracts so from his usefulness in war time, no matter how profound his knowledge of medicine and surgery, and which causes disorder and confusion all along the line, with the dire results which we recently witnessed during our brief war with Spain.

In civil life, the physician seeks a practice; in the Army the practice seeks him. In civil practice, the physician must cater, to a certain extent, to his patient's whims, possibly to the degree of administering a placebo; in the Army, the practitioner is at liberty to exercise a somewhat freer hand in dealing with the sick and to follow out his own ideas as to treatment. It is the duty of the Army surgeon to supervise the hygiene of the command and to recommend such measures as he may deem necessary to prevent or to diminish disease; and in doing this well he enhances his value to the government and tends to reduce his own share of professional work.

It may be of interest to those who have had no connection with the military service to hear something about the exact nature of the duties of a medical officer of the Army. The course at the Army Medical School, which all approved candidates are required to attend, includes, in addition to medical, surgical and sanitary instruction, a course of lectures on the duties of medical officers in time of war and peace, property responsibility, examination of recruits, certificates of disability, reports, rights, privileges, customs of the service and transportation of the wounded. On entering on his duties with troops he will at once realize the great value of this instruction and will be enabled to discharge his duties with much greater readiness and ease. There will, of course, be a great variety of medical and surgical work to be done, and opportunities to engage in special work for which the medical officer may be particularly qualified will not be found lacking—for instance, in surgery, in sanitation, in chemical, pathologic, microscopic and bacteriologic investigation, etc.

When the rank of lieutenant colonel or colonel is reached, especially the latter, the duties are almost certain to be of an administrative character, as commanding officer of a large general hospital or as chief surgeon of a department.

Desire to attain the grade of surgeon-general is, of course, a laudable ambition, and, the office may be reached by any capable and worthy medical officer who demonstrates qualifications of the proper kind. The office is held by the incumbent as a four years' detail, as it is in the Navy, but the President may prolong the detail. Even should a surgeon-general revert to the grade from which he was promoted, when he reaches the retiring age he is retired as a brigadier-general.

There is another marked advantage which the military service offers to a physician, especially to a young man who is just starting out in his practice. In civil life, the doctor must equip his office with books, instruments and furniture at his own expense; he must buy his own medicines, if he is doing a country practice; pay the rent for his office and furnish the forage for his horse or horses. In the Army, the government furnishes all these liberally and, in addition, all the leading medical journals published in the English language. This effects a very considerable saving in the course of time and is well worthy of serious consideration.

In the military service, one does not have the opportunity of making a permanent home, but is subject to orders and must be ready to shift his *lares et penates*

when his orders come to change station. The allowance of baggage transported at public expense, however, is ample for all practical purposes. A first lieutenant is allowed 6,000 pounds, a captain 7,200 pounds and a major 8,400 pounds. These amounts will cover all articles necessary to housekeeping in the Army, and if the officer is unmarried the allowance will be found much in excess of his needs. Besides this, the government allows a maximum of \$100 for each horse allowed and transported for a mounted officer and also transportation for an attendant. A change of station, therefore, ordinarily can be made without the incurrence of any expense to the officer concerned. His own personal expense for railroad fares and sleeping cars is more than covered by his mileage allowance, as he is allowed a first-class ticket and 4 cents a mile in addition. It will be seen that a move from one post of duty to another is not to be dreaded on account of expense.

Naturally a subject of much interest to an army officer is that of promotion, because with it comes greater authority and increased pay. What is the prospect in the medical department for a satisfactory rate of promotion? At the present time, the organization of the department is not wholly satisfactory in this respect. Congress having added too many officers of the lower grades and too few of the higher grades in reorganizing the corps early in 1901. A new bill, having in view an increased efficiency of the medical department, was prepared by the Surgeon-General two years ago, and at the last session of Congress it was passed by the Senate, and the sense of the House of Representatives was largely in its favor, but the ruling of the speaker blocked its passage. The President, the Secretary of War, the Senate, the Military Committee of the House, the American Medical Association and the country at large are all in favor of the passage of this bill, and the report of the committee of medical officers having it in charge shows that great progress has been made and the probability of securing favorable action at the present session of Congress is most gratifying. This bill increases the higher grades and places the corps on a basis much more attractive to an ambitious young man. Its passage at an early date seems absolutely assured, and, as over 20 vacancies exist at present in the corps, an early entrance is highly important, as promotion goes by seniority, and a stand a few files higher in the list means the attainment of a superior rank a year or two in advance of those who may enter a few months later.

In conclusion, it may not be amiss to say a few words concerning social life in the Army.

Garrison society, as a rule, is very pleasant, and I feel safe in saying that the surgeon will find the officers and their families almost universally delightful people. For the socially inclined young man there is no dearth of entertainment in the way of dinners, card parties, private theatricals, etc., especially at the larger garrisons, so that one need not fear that he will be deprived of the amenities of good society found in civil life.

Variations in Normal Urine.—Evans and Moore, as a result of a series of experiments, state that in a normal individual the composition and character of the urine may vary widely within short periods of time, and that even the twenty-four hours' urine may differ considerably from accepted standards for a man of average size. They also state that the urine excreted during the forenoon is in most respects noticeably different from that of other parts of the day.—*Montreal Medical Journal*.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

GENERAL DISINFECTANTS. CHAPTER IX.

General Introduction to the Subject of Disinfectants and Antiseptics.

The important subject of antiseptics embraces so many different agents that are used in such a variety of conditions that any convenient consideration of them according to their uses, or according to the principles that are involved, must necessarily be an arbitrary one. For our purpose we shall consider them under three heads: (1) General disinfectants and antiseptics; (2) local disinfectants and antiseptics, and (3) internal antiseptics. Some substances will require consideration under all three headings, but even this will be found preferable to giving, for example, all of the manifold uses of such an article of mercuric chlorid in one place.

Antiseptics were used long before the causes of fermentation or of putrefaction were known, and it would have been remarkable indeed had man failed to perceive the effect of those substances which are capable of inhibiting a process so commonly encountered. The Egyptians preserved the human body against the attacks of putrefactive organisms, without any evident knowledge of the character of the organisms causing decay, by means of balsams which contained such antiseptics as benzoic and cinnamic acids. The epoch-making discoveries of Pasteur, followed as they were by the favorable reports on the use of phenol, or carbolic acid, by Lister, and the subsequent discovery that other substances possessing great antiseptic power were even less toxic to man, gave tremendous force to the pendulum, which was carried entirely too far by the efforts of well-meaning enthusiasts, and in its backward swing much unnecessary skepticism has been aroused.

While the subject of general disinfection does not necessarily form a part of the physician's daily consideration, there are occasions when he is suddenly confronted with the necessity of erecting such work, and on the thoroughness with which he does it will depend the safety of other members of the community. While there is no great difficulty in securing thorough disinfection, it is absolutely necessary that certain rules be rigidly complied with and this can not be done without an exact knowledge of the object that is to be accomplished and of the means with which the accomplishment is to be brought about. There is probably no condition where a little knowledge can prove to be more dangerous than in this very matter of disinfection, and we therefore have no apologies to offer for going into detail on a subject that may be considered commonplace or well understood.

Sunlight and Heat.

The best of all disinfectants is bright, direct sunlight, coming into immediate contact with the individual germs, not merely shining on one side of a thick garment or carpet, or on small masses of sputum, blood, pus or decaying meat, but shining on and penetrating each individual micro-organism. When this can be accomplished all germs—not all spores—are killed in a few hours. But sunlight is not dependable unless all of the necessary conditions can be rigidly complied with, as may be done with impervious flat surfaces (floors), or linen and other thin garments, both sides of which may be exposed to the direct rays of the sun. The disinfection of articles infected with the more virulent pathogenic organisms usually requires other, more directly active, means than that of sunlight, with the attendant danger of further dissemination, and chemie disinfectants or heat must then be employed.

The direct flame instantly destroys all forms of microscopic life. Dry air, heated to 160° C (320° F), kills all disease germs—but not all spores—in one hour; but wood will begin to char at 180° C. (356° F.) and even lower, so that dry hot air is not applicable as a certain means of disinfection in all cases. Simple drying kills bacteria; but masses of sputum or other organic matter may preserve the organisms in their interior for an indefinite period, while spores are thus preserved for years.

Moist heat, water or air saturated with aqueous vapor, heated to 75° C. (167° F.), is rapidly fatal to most bacteria. Water containing typhoid bacilli is rendered much safer by heating to even this comparatively low temperature for ten minutes. Boiling water, on the other hand, will kill even spores in ten minutes or more if they are not protected in small masses. When such masses do exist, 1 per cent. of soda or soap should be added to the water to dissolve the albuminous and other organic matter and at the same time to raise the boiling point slightly. Metallic instruments do not rust in water containing caustic soda, washing soda, baking soda or borax.

Moist steam, or air which is supersaturated with steam, is rapidly fatal, but superheated dry steam is not so quickly fatal as is the moist at a much lower temperature. Pressure, moisture and increased temperature increase the effectiveness of all methods of disinfection. Moist steam penetrates better than dry air, but heavy fabrics may protect micro-organisms, and particularly spores, for a considerable time, and many articles, such as mattresses, can not be readily disinfected even in this way.

Chemical Disinfectants.

Bedrooms and their contents may be disinfected by the now official:

Liquor Formaldehydi.—U. S.—Solution of Formaldehyd, containing about 37 per cent. by weight of formic aldehyd, an oxidation product of methyl alcohol. This substance may be applied directly by washing or spraying, or it may be used in the form of vapor. For the latter purpose the windows and doors are tightly closed, paper being used to stop up the crevices, carpets should be removed or suspended and all drawers and closets opened and their contents so placed that the vapor will readily reach and penetrate every particle of fabric. Formaldehyd solution is then vaporized either in the room or through the keyhole with enough water to saturate the air in the room. Considerable loss of formaldehyd occurs through decomposition during vaporization by heat, and it is, therefore, preferable to saturate sheets with the requisite quantity and suspend them in the room which is to be disinfected, or, better still, the solution may be sprayed from an atomizer. The keyhole is then plugged and the room allowed to stand for from 12 to 24 hours. Novy advises 150 c.c. (5 fl. oz.) of the 40 per cent solution, corresponding to about 165 c.c. (5½ fl. oz.) of the official, for each 1,000 cubic feet of air space. To increase the efficiency of the formaldehyd, 3 liters (3 quarts) of water are vaporized into each 1,000 cubic feet of space. If the atmosphere is damp, less water will be required, of course. Under ordinary conditions it is cheaper to destroy inexpensive mattresses than to disinfect them thoroughly. If they are of straw, destruction is most readily accomplished by burning them out of doors.

Calx.—U. S.—Lime, calcium oxid, constitutes an inexpensive and very useful disinfectant that has a number of widely varying uses. Infected urine, vomit and feces may be thoroughly disinfected by being received into a vessel that contains freshly prepared milk of lime. It is essential that this be freshly prepared, as calcium hydrate rapidly absorbs carbon dioxide from the air and is thereby changed into the inactive calcium carbonate. Milk of lime may be prepared by putting a few pounds of lime into an iron pot and adding about half as much water; the lime rapidly falls into a dry powder with the evolution of heat; to this powder add three times as much water and stir well. The resulting mixture will keep for several days without deteriorating sufficiently to be inert. There are, of course, several precautions to be observed: The lime must be recently calcined, or fresh, and the person who slakes it should be careful to avoid the irritant dust which arises during the process; then, too, the heat generated may be sufficiently high to char wood or to set fire to readily combustible materials. For disinfecting feces or other substances they should be thoroughly stirred with an equal quantity of the milk of lime, or, better still, with twice the quantity, the mixture being allowed to stand for two hours.

Milk of lime is also useful for disinfecting floors, cellars, cesspools after draining, and even walls when they are not subject to injury. It must always be remembered that this

whitewash rapidly absorbs carbon dioxide and thus becomes inert, hence the mixture is an efficient disinfectant, but is not useful as an antiseptic.

Unslaked lime is a cheap and very efficient means of destroying animal matter and is also useful for absorbing moisture in damp cellars. As noted before, certain precautions are always to be taken in connection with this really active chemical substance. Cesspools are difficult to disinfect. Large quantities of milk of lime are effective, but the contents must be thoroughly mixed with the disinfectant, whatever its nature.

Hydrargyri Chloridum Corrosivum.—U. S.—Corrosive Mercuric Chlorid, bichlorid of mercury, mercuric chlorid, or, as it is most commonly called, corrosive sublimate, will be considered more extensively in connection with local antiseptics. It has, however, a number of very important uses in connection with disinfectants.

Corpses of persons dead of an infectious disease should be immediately wrapped in cloths saturated with a 1 to 1,000 solution of mercuric chlorid. The addition of 20 per cent. of glycerin to the solution of mercuric chlorid will prevent the rapid evaporation of the water, which leaves the mercuric chlorid as a dry powder in the cloth. Water which has been used to bathe a person suffering from an infectious disease, such as typhoid fever, should be disinfected by heating to near the boiling point or by the addition of a liberal quantity of milk of lime or a much smaller quantity of mercuric chlorid. If the bathtub is of metal, this chemical should not be used, but phenol or cresol may be substituted.

Ferri Sulphas.—U. S.—Ferrous Sulphate, preferably the impure or crude article, commonly called coppers, is an excellent deodorizer for animal excretions, the iron uniting with the albumin and the acid with the ammonia; it is not a very active disinfectant.

Cupri Sulphas.—U. S.—Copper Sulphate, or blue vitriol, may be similarly used, but it is much more expensive and possesses no marked advantages over coppers as a deodorizer.

Sulphur Sublimatum.—U. S.—Sublimed Sulphur, or flowers of sulphur, is frequently burned as a disinfectant, in rooms which contain nothing which can be injured by the corrosive action of the resulting sulphurous oxid. It is not so frequently used now that formaldehyd affords a more satisfactory means of disinfection, but it is cheaper and may be used to advantage in cellars and in empty rooms, that can be thoroughly sealed. Hopper-Seyler recommends that 15 gm. (½ oz.) be burned for every cubic meter (cubic yard) of space. This would be equivalent to about 1,500 gm. (3.3 lbs.) for 1,000 cubic feet. Rooms should be left tightly closed for from twenty-four to forty-eight hours, then the fumes of acid still remaining may be readily absorbed by sprinkling ammonia in the room. As with formaldehyd disinfection, the vapor must come into actual contact with the micro-organisms and the atmosphere should contain moisture. This latter requirement is usually met by burning the sulphur in a double vessel, the outer one containing water.

The gas that is generated by the burning of sulphur is very poisonous to man, due to its local corrosive action. Spasmodic closure of the glottis may occur, causing death. Sulphurous oxid, the substance that is thus generated, remains free in mixtures of organic matter longer than free chlorine, hence it is a more effective bactericide.

Calx Chlorinata.—U. S.—Chlorinated Lime, popularly, though improperly, called chlorid of lime, is a ready source of chlorine and is a very convenient and inexpensive disinfectant suitable for many of the purposes for which sulphurous oxid might be used. Chlorin, like sulphurous oxid, is very corrosive, attacking metals, and bleaching and destroying fabrics. Chlorinated lime is useful sprinkled about urinals, damp cellars, outhouses, stables and drains. It rapidly deteriorates on exposure to the air and is not efficient unless it has a very strong odor of chlorin.

The various chlorids that are sold at fancy prices are usually feeble and are in nowise superior to a readily made mixture of a quarter of a pound of chlorinated lime with half a gallon of water. The admixture of an acid at the time of using causes the rapid liberation of chlorine and increases the disinfectant action.

LIQVOR SODÆ CHLORINATÆ.—U. S.—Solution of Chlorinated Soda, the so-called Labarraque's solution, is but another form of a chlorin compound. It has the one advantage of being free from insoluble caustic material.¹

PHENOL.—U. S.—Phenol, the Acidum Carbolicum of the U. S. P. 1890, is much more expensive and not nearly so efficient, as a disinfectant, as:

CRESOL.—U. S.—Cresol has been included in place of the formerly official crude carbolic acid. It is a mixture of the three isomeric cresols, found in coal tar, and is a useful and highly efficient disinfectant and antiseptic.

LIQVOR CRESOLIS COMPOSITUS.—U. S.—Compound Solution of Cresol consists of a mixture of equal parts of soap and cresol. When properly made this mixture is an admirable substitute for any one of the numerous soluble or semi-soluble proprietary preparations containing cresol; such as creolin, cresolin, lysol, lysisol and a host of others too numerous to mention.

Compound solution of cresol is practically identical with the Liquor Cresoli Saponatus of the German Pharmacopeia; it is miscible in all proportions with water, and, as noted above, is a reliable and readily available disinfectant.

One part of the compound solution of cresol added to twenty parts of very warm water is useful for the sterilization of surgical instruments, and a slightly weaker solution, made by adding one part to thirty of warm water, affords an excellent disinfectant for the hands.

POTASSII PERMANGANAS.—U. S.—Potassium Permanganate, the chameleon mineral of Scheele, attacks all forms of organic matter and is generally useful for the destruction of foul odors, but is not very useful as a disinfectant. It will be considered at greater length in the succeeding chapter.

The strong mineral acids are destructive to bacteria, but their application as disinfectants is necessarily very limited. As noted before, mercuric chlorid is to be classed with the most powerful of all disinfectants in general use, one part in 10,000 being fatal to spores. Like all other chemical disinfectants, its activity is increased by heat. It precipitates albumin and its activity is, therefore, materially lessened by the presence of any appreciable amount of organic material; this disadvantage of mercuric chlorid may be obviated in part by the addition of an equal amount of sodium or ammonium chlorid (or a small amount of hydrochloric acid), the tablets found on the market for preparing the solution always containing the requisite quantity of one of those salts. As it attacks metals, it is not suited for the disinfection of instruments or metallic vessels. One part of mercuric chlorid in 50,000 parts of water has been demonstrated to possess decidedly antiseptic properties. Its comparative non-volatility, its property of attacking metals and of combining with albumin, and its extreme toxicity limit its field of application, but it remains by far the cheapest antiseptic we have for general use.

Copper sulphate shares with copperas (ferrous sulphate) the power of deodorizing decomposing organic matter though it is but little used for this purpose. It has recently been claimed that the merest traces of copper sulphate, or of copper, in water readily destroy the bacillus of typhoid fever, or at least completely inhibit its growth; even though the copper is present in quantities too small to interfere with the use of the water for drinking. The results of different investigators are not uniform, however, and some maintain that the antiseptic power of copper and its salts has been greatly overestimated. The soluble salts of zinc, particularly the chlorid, have also been used for disinfecting purposes, but as they

share with copper the disadvantage of being comparatively expensive, without any accompanying material advantages, a more detailed consideration of these substances may be omitted in this connection.²

Clinical Thermometers and Hypodermic Syringes.

The disinfection or sterilization of clinical thermometers and of hypodermic syringes and needles deserves especial mention. With the present comparatively low price of clinical thermometers there is little or no excuse for not having an individual thermometer for at least every patient ill with an infectious or a contagious disease or a continued fever. But even this precaution, desirable as it certainly is, does not obviate the necessity for disinfecting or sterilizing the thermometer. The necessary disinfection may be effected in a number of ways, the thermometer may be dipped for a few minutes in strong phenol, the solution of cresol, or in the now official solution of formaldehyd, after which it is thoroughly rinsed in water. Where an individual thermometer is provided it may be sterilized by keeping the bulb immersed in 75 per cent. alcohol, a saturated solution of boric acid, the official liquor antisepticus, or in a mixture of equal parts of antiseptic solution and of solution of hydrogen dioxide. It must appeal even to the least careful that the disinfection of clinical thermometers is a precaution so essentially important that it should never be neglected.

The hypodermic syringe and needle should be disinfected with strong phenol or cresol solutions, solution of formaldehyd or by repeated washing with very hot water, as a purely routine procedure. When a syringe and needle are known to be infected the disinfection should be as thorough as that of other surgical instruments.

Solutions intended for hypodermic injection can be sterilized by boiling, when this does not cause decomposition. With the now widely used hypodermic tablets it is preferable to boil the necessary quantity of water, or better, distilled water, for a minute or two, then add the tablet, avoiding all unnecessary handling, and heat sufficiently to insure thorough solution. Cocain, being readily decomposed, can not be boiled, but the solution may be sterilized by heating to about 80° C. (176° F.) for thirty minutes on two successive days. It will usually be found to be preferable, however, to use freshly prepared solutions that have been made in a sterile bottle with recently boiled and sterile distilled water. Eucain and stovain solutions may be boiled, but these substances themselves are not entirely free from objections.

Under the subject of internal antiseptics we shall have occasion to mention the disadvantages of sterilized milk, but here we may call attention to the widespread use of formaldehyd, salicylic acid and other chemical antiseptics for the preservation of foods. While we are by no means certain that minute quantities of many of these chemical antiseptics are in themselves injurious, we have ample authority for the opinion that their continued use in appreciable quantities is by no means beneficial. Schmiedeberg regards the constant use of even small quantities of salicylic acid, for a continued period, as unwise in the present state of our knowledge, and Sollmann says that the use of formaldehyd can not be too strongly condemned, because of the specific irritation of the mucous membranes which it causes.

The whole subject of food preservatives, however, while it is a vitally important one, and one in which the physician should, and indeed, must be actively interested, is entirely too extensive to be discussed at length in connection with the present series of articles.

1. Where an inodorous deodorant is required it will be found that the Liquor Zinci et Aluminii Compositus of the National Formulary will give better and more uniform satisfaction than proprietary articles of the same type. It is made as follows:

| | |
|-----------------------|-----------------|
| R. Zinc sulphatis | |
| Alumini sulphatis, ña |3xxvii 100 |
| Naphthol |xxv 3 |
| Oil thymyl |xxv 1 |
| Aqur, q. s. ad |Oj 500 |

The salts are dissolved with the aid of heat and the volatile substances added to the solution.

Still another preparation of the same type is the Liquor Zinci et Ferri Compositus—N. F.

2. In this connection we find the following quotation apropos, taken from Wood's "Therapeutics," page 823: "There are not many affairs in life in which the public has been so superabundantly fleeced as in the matter of disinfection. A most extraordinary part of the swindling is the case with which distinguished members of the medical profession have given certificates of efficiency and value to comparatively inert and extraordinarily expensive proprietary compounds. Oddly enough, the cat that has drawn the chestnuts out of the fire for avaricious manufacturers has not even had the sense to smell the odor of its own paws when burning." It is evident that Dr. Wood knew less of the resources and the wiles of nostrum makers, and their shrewdness in duping physicians, than he supposed, else he would not think it extraordinary that so many have been deceived.

The subject of preservatives, however, is also of interest in connection with medicines and medicinal preparations. The antiseptic action of alcohol, glycerin, sugar and of volatile oils is well known and generally recognized, while not of sufficient importance to be considered in connection with general disinfection, these substances are widely used as preservatives not alone for medicinal preparations and foods, but also for other substances and materials.

(To be continued.)

Clinical Reports

A CASE OF EPITHELIOMA OF THE FACE.

TREATED BY THE ACTUAL CAUTERY, THE X-RAY AND BY
INCISION.*

J. H. WOODWARD, B.S., M.D.

NEW YORK CITY.

History.—Mr. —, about 70 years of age, presented in the spring of 1903 a small ulceration one-fourth of an inch in diameter in the left side of his face, near the ala of the nose, which had existed more than a year. The area of disease was limited to the immediate neighborhood of the superficial ulceration.

Treatment by Actual Cautery.—In May, 1903, I burned it out with the galvanocautery. The wound so made healed promptly without incident, leaving a small, smooth cicatrix.

Treatment by Röntgen Ray.—In November, 1903, ulceration in the cicatrix had begun. Influenced by the very favorable published and verbal reports of the beneficent effect of the Röntgen ray in curing epithelioma of the face, I referred my patient to a very competent surgeon, thoroughly familiar with x-ray therapeutics, for treatment by that method.

Report.—To him I am indebted for the following notes of the case while under his care:

"On examination I found a spot about as large as a small, ordinary white bean about three-quarters of an inch beyond and above the ala of the nose, left side. The outer half had healed, the inner part was ulcerating. There was very little induration on the floor and sides of the ulcer. He came to me November 4 and received about three treatments a week until Christmas, making in all twenty-two exposures. The treatments were made with a medium-sized tube, medium vacuum, at a distance of six inches, with an exposure of ten minutes; the face, head and chest were protected by plates of lead and tinfoil. The tube was influenced from a 12-32-inch plate, Wait & Bartlett static machine. Very little effect was observed after four weeks' treatment. The ulcer seemed to have some source of irritation. This was found to be too frequent examination with the finger. The ulcer was then protected with a cotton or rubber tissue and collodion dressing, which was removed during the exposure to the rays. The effect was magical: the ulcer closed at once and remained closed. At this time a lead glass tube, with a terminal diameter of one inch, was used for the remainder of the exposures. This was placed within half an inch of the diseased surface, with an exposure of five minutes. After an interval of two weeks (i. e., beginning Jan. 12, 1904), four more exposures were made at intervals of three days in order to make sure all diseased tissue was destroyed."

The x-ray treatment, therefore, practically extended over a period of three months and was thoroughly and painstakingly given by a conscientious operator.

Treatment by Excision.—Early in April, 1904, or a little more than one month after the last x-ray exposure, the patient came to me for re-examination. Ulceration had again broken out in the cicatrix. At this time I was strongly tempted to do only a curettage. Fortunately, however, my suspicions had been sufficiently aroused, and on April 6 I extirpated the growth. The operation was made through what appeared macroscopically to be healthy integument at a distance from

the apparent disease down to healthy periosteum and healthy perichondrium. The latter was curetted away, because it lay in rather close proximity to the ulceration. The resulting wound was at least one inch in diameter and nearly circular. It was allowed to heal by granulation in order to facilitate later the detection of any cancerous tissue that might have been overlooked, and had closed completely by May 7, leaving a small, smooth scar.

The excised tissue was taken to Dr. F. E. Sondern for examination, with the especial purpose of ascertaining whether the operation had included the entire diseased area. He reported as follows:

"The cut specimens show a typical picture of epithelioma. Between the lesion proper and the periphery of the specimen there is an area of normal epidermis, the corium showing a small amount of round cell infiltration only. Very near to the periphery, however, the epidermis shows an irregular downward growth into the corium, which shows a decided inflammatory reaction. This looks like an early stage of the disease at the periphery of the specimen."

Further History.—I was surprised to find that the microscopic examination had revealed a more diffuse cancerous infiltration than had been supposed possible in this case. The operation had not circumscribed the growth.

On May 14, 1904, a small collection of pus about the size of a pinhead had developed in the part of the cicatrix nearest the inner angle of the eye. This was evacuated and the small cavity treated with pure carbolic acid. On May 16 the same spot was curetted and in two days the wound had healed.

On June 1, 1904, suppuration had recurred in the same place, and on June 3 the upper portion of the cicatrix and half an inch or more of integument between it and the inner angle of the eye was cut out. This wound was closed by three sutures and healed by primary union.

Report.—Dr. Sondern reported on the excised tissues as follows: "The cut specimen shows a typical picture of epithelioma. There is a proliferation downward of epithelial invaginations into deep tissues and numerous epithelial pearls. There is also some inflammatory round cell infiltration of corium and deeper tissues."

On Oct. 5, 1904, the cicatrix was almost invisible and nothing pathologic was discoverable in the wound region. In November, 1905, eighteen months after the last operation, his only symptom was itching in the cicatrix. I was not able to discover anything pathologic in or about the scar, which was almost invisible, smooth and not adherent. The adjacent skin was normal. Inasmuch as a scar on his forehead carried for many years itches more or less, that symptom in the operation scar may be of no importance.

In May, 1903, the ulceration appeared as innocent as an epithelioma can, and it seemed a simple matter to effect a cure with the actual cautery. A more favorable case for treatment by the x-ray than this was in November, 1903, could not be imagined. Naturally, it is not possible to state exactly how far the disease had infiltrated the skin prior to the x-ray treatments, but macroscopically the disease was limited to a very circumscribed area. After the x-ray exposures, however, it was clear not only that there had been an absolute failure to cure, but that the area of disease had increased considerably. Possibly the actual cautery had acted as an irritant, inasmuch as it had not been applied with a sufficiently free hand to kill all the cancer cells. It is certain that the x-ray had operated as an irritant, causing the disease to spread more rapidly in every direction than it would have done if undisturbed. The lapse of time alone does not account for the marked changes in the conditions, especially those that occurred between November, 1903, when the x-ray treatment was begun, and April, 1904, five weeks after the last x-ray exposure had been made.

Experience in this case teaches that the ancient and honorable method of early and complete excision should have been the method of choice. Objection to excision

* Read before the Society of the Alumni of Bellevue Hospital.

of growths about the face is urged on the assumption that noteworthy disfigurement is a necessary consequence of cutting operations. We know that such arguments are not valid when excision is made in the incipency of the disease. In all other cases the question of cure is paramount.

A remedy for cancer that is lauded because its application does not disfigure the patient must possess curative properties superior to any other known treatment to entitle it to respectful consideration. In this case, the history of which has just been related, the *x-ray* proved to be not only a dismal failure as a cure, but it was positively harmful, both in wasting time and in stimulating the cancer's growth.

Bodine's method of using cocain locally enables the surgeon to avoid the objection to, and the dangers and disagreeable features of, general anesthesia, and promises the practical certainty of a painless operation. In my patient's case a positive history of attacks of true angina pectoris was an important factor. It seemed advisable at the operation of April 6, 1904, to give the patient a hypodermic of morphin before injection of the cocain solution was begun, because it is the systemic antidote to cocain and also the most potent agent we may employ in angina pectoris. This precaution was probably unnecessary. In the second cutting operation the use of morphin was omitted. In both instances no untoward cardiac symptoms were observed either during or subsequent to the operation.

58 West Fortieth Street.

A CASE OF SYPHILITIC DACTYLITIS OF THE TOE.

ASTLEY PASTON COOPER ASHURST, M.D.

Surgeon to the Out-Patient Department of the Episcopal Hospital, PHILADELPHIA.

Patient.—R. E., aged 40, applied to the surgical dispensary of the Episcopal Hospital April 20, 1904, for treatment of his left foot.

Examination.—The foot was moderately swollen, with two areas of superficial ulceration on the dorsum, and with the middle toe the seat of a swelling so typical of syphilitic dactylitis as seen in the fingers, that the specific nature of the lesions was readily determined. The patient stated that the ulcerations of the dorsum of the foot had persisted more or less in their present form for a period of eighteen months and that the toe had been in its present state for about six months. He had tried various salves and ointments, but so far no form of application had proved of any avail. On further inquiry it was learned that twelve years previously the man had had a sore on the penis, which, although accompanied by suppurative inguinal buboes, was nevertheless followed later on by an evanescent skin rash. Antisyphilitic treatment had been employed for about six weeks. The accompanying illustration, kindly made for me by Dr. R. S. Hooker, shows very well the appearance of the foot and toe when the patient came under my treatment.

Treatment and Result.—The ulcers were dressed locally with dilute citrin ointment, and iodid of potash was administered internally. Improvement was rapid, the ulcers healed, and the dactylitis disappeared, so that in the spring of 1904 the foot was practically normal. I heard from this patient in November, 1905, and learned that he has taken the potassium more or less regularly ever since being under my care; he says he learned by experience that soon after stopping the medicine he was prone to develop ulcers or sores in some part of his body. His foot has given him no further trouble.

Syphilitic dactylitis was first accurately described by Dr. R. W. Taylor, of New York, in 1871. The affection

had been alluded to previously by one or two writers, but it had never before been fully studied. When Van Harlingen, in 1882, wrote the article on "Syphilis" for the International Encyclopedia of Surgery, he could find less than twenty-four cases of the affection recorded. It occurs in two varieties: The more common variety affects the subcutaneous tissues and the fibrous structures of the joints; the other arises in the periosteum and the bones. It does not, as a rule, make its appearance until five to fifteen years after the primary lesion.



Syphilitic Dactylitis.

It appears to be distinctly rarer in the toes than in the fingers. I have observed two cases of syphilitic dactylitis of the finger in the dispensary of the Episcopal Hospital, one being a manifestation of hereditary syphilis in a child, the other occurring in an adult. In the finger it is nearly always the proximal phalanx that is affected; but in the toe, as is evidenced in the case herewith recorded, the swelling usually extends throughout the whole length of the affected digit. As remarked before, the appearance is characteristic, and even if no syphilitic history could be elicited I think the true cause of the lesions would be readily determined.

OSTEOMA OF THE OUTER SURFACE OF THE ULNA.

C. B. CLAPP, M.D.

Surgeon in charge, Wabash Employes' Hospital, MOBERLY, MO.

Patient.—J. S. H., aged 28, section laborer, when about 10 years of age noticed a small lump on the outer surface, near the lower end of the right ulna, which has slowly yet constantly grown until the present time. He does not remember any traumatism to this part at any time.

Description of Tumor.—The tumor itself measures $7\frac{1}{2}$ inches in circumference; its surface is rough and jagged, resembling the cauliflower somewhat in appearance. The radiograph (Fig. 1), which was taken by me before the operation, shows clearly the usual shortening of the shaft of the ulna and the drawing away of its articular surface from the wrist joint. It also shows the peculiar curving of the shafts of both the bones of the forearm, compensating, in part, for this development, and also the malposition of the distal extremity of the ulna. Since

the operation the distal piece has acquired a more normal position and will doubtless adapt itself more closely to the wrist joint in time and thereby afford material strength.

Remarks. It is interesting to note that this man has always done the heaviest kind of manual labor, using the shovel constantly for days, driving spikes with a heavy sledge, lifting



Fig. 1. Showing the shortening of ulna and malposition of articular surface.

steel rails, handling ties, and all work usually done by a man on the section, and at no time, either before or since the operation, has he noticed that this wrist or arm tires before the other, or is weaker than the other.

New Instrument

A NEW ANOSCOPE.

T. CHITTENDEN HILL, M.D.

Surgeon to the Rectal Department of the Boston Dispensary.
BOSTON.

This new instrument, which I devised for a special case, has proved of such general utility in the treatment of affections of the lower rectum and anal canal that a brief description of it may be of interest:

For examinations and treatment of the rectum proper and pelvic colon the round tubes of Kelley and the later pneumatic modifications of these leave nothing to be desired but for the treatment of ulcerations, abrasions, new growths, etc., of the anal canal the specula in common use have not at all times been satisfactory. A diagnosis can be made by digital examination, but it is often important to have a good view of

the lesion in making local treatments. With this simple instrument I have treated many patients who otherwise would have been obliged to undergo general anesthesia.

It consists, as the cut shows, of a straight glass tube with an oval window in the side. The lower end is rounded and punctured by a small hole which allows air dilatation of the rectum. The handle is detachable and to prevent cracking of the glass it should be removed when the instrument is sterilized.

METHOD OF USE.

With the patient either on the elbows and knees or in the right semi-prone position the distal end is smeared with vaselin and pressed firmly over the anal orifice. Then as the patient strains down the instrument slips easily past the sphincters.

Should there be an excess of vaselin about the window in the instrument it is wiped away with a cotton swab. By gently rotating and partially withdrawing the tube the whole anal circumference can now be thoroughly explored without discomfort to the patient.

ADVANTAGES.

The following advantages are claimed for this speculum over



others now in use: The round tube is the most easily introduced when there is spasm of the sphincters, which is nearly always the case in disease in this locality. The edges of the oval window are so smooth that rotating and withdrawing it does not pinch the mucous membrane and thus cause pain—and what is more important, the mucous membrane anterior to the part being examined is firmly supported and thus a good view is obtained.

In the bivalve specula and the conical fenestrated ones with removable blades, the mucous membrane so prolapses into the instrument that a satisfactory examination is often impossible. Besides, their use is painful and they have to be reintroduced several times in order to examine thoroughly the whole of the anal canal.

When necessary for special cases the window may be enlarged, made smaller, or placed at a different level. The one in the cut, however, has proved suitable for nearly every case.

This instrument I now use almost exclusively when a speculum is required for the examination or treatment of the anal canal. And when it is recalled that more than half of the diseases of the rectum are in this locality its field of usefulness is readily appreciated.

Milk in Pulmonary Tuberculosis.—When any dyspepsia arises from the use of milk, Burton-Fanning advises adding 20 grains (an egg-spoonful) of sodium bicarbonate to each tumblerful. The milk may also be given warm, or thickened with some farinaceous food, or it may have a little spirit added. It should not be swallowed in bulk, but should be slowly sipped. With these modifications milk usually agrees, even when drunk at meals with other food. A great deal of milk can be administered in the form of junket or other pudding, to which cream may be added. *Denver Medical Times.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 24, 1906.

PROTECTION THROUGH NATURAL SELECTION.

There is an almost universal impression existing with special force among physicians that unsuitable hygienic conditions, and especially the influence of widespread disease, in the course of time, brings about degeneration in a race subjected to them. It is not a little surprising, then, to find that an article expressing exactly the opposite ideas has been written by a distinguished student of heredity, whose observations have extended over a long period of time, and who is known as a conservative writer, not lightly to be tempted to express exaggerated notions contrary to usually accepted ideas, merely for the sake of attracting attention. In an article on "Heredity and Social Problems,"¹ Dr. G. Archdale Reid, a fellow of the Royal Society of England, who last year published a book on "Principles of Heredity" that attracted widespread attention, insists that there is conclusive evidence of the erroneousness of the belief that the conditions under which parents live "are a potent cause in variations in offspring subsequently born," and of the mistakenness of the persuasion "that parental ill-health, due to disease, intemperance, bad sanitation, want, hardship and the like, tends to alter the nature of children in such a way that they are rendered innately degenerate."

This is a contradiction, direct and absolute, of the opinion held by many physicians, and consequently Dr. Reid's arguments for his conclusions are worthy of serious consideration. He calls attention particularly to the fact that long-continued exposure to a disease, far from bringing about degeneracy so that the people thus exposed become more liable to it, on the contrary, always leads to the production of a special resistive vitality which enables the exposed people to combat the particular affection to better advantage. Negroes on the west coast of Africa, for instance, have been exposed for hundreds, perhaps thousands, of generations to severe malaria. Practically every negro suffers from the disease and many perish. "No one will say, however," says Dr. Reid, "that the negroes are degenerate. On the contrary, they are a tall and robust race, and, as is well known, every race exposed to the disease is resistant to it precisely in proportion to the duration and severity of its past sufferings." The large number

of deaths that have occurred by a process of natural selection has eliminated the unfit. The survivors are not degenerates, but are superior to what they would have been had there been no malarial racial selection.

The same thing holds true for many other races and for many other diseases. Europeans who have been longest exposed to consumption and have suffered much from the disease are more resistant to it than the negroes, to whom tuberculous exposure is a comparatively recent incident in history. Our American statistics seem to bear out this fact very completely. Still less resistant to consumption are the South Sea islanders, who have had no previous experience of the disease and are exterminated by it when it once gains a hold. Tuberculosis, when first introduced among the American Indians, was much more fatal in its effects than it is at present, as, indeed, were all of the contagious diseases. The Indians still continue to fall victims to these diseases much more readily than the white man, but that seems to be precisely because of the shorter time to which the race has been exposed to them. When America was discovered, except for malaria and yellow fever, we know of no infectious diseases that existed on this continent.

Even more interesting is it to find that in matters usually considered as belonging to the moral side of nature, a race more or less immune seems to be produced by natural selection. The nations which for the longest periods have been freely accustomed to the use of alcohol are those in which there is at the present moment the least intemperance. Many races, as Dr. Reid says, have been afflicted by alcohol for thousands of years; none has become degenerate. Some men are naturally more susceptible to alcohol than others; these, because they are more tempted, drink to greater excess and so are weeded out. As a consequence, every race possessed of abundant supplies of alcohol is temperate in proportion to its past experience of the poison. The inhabitants of the wine countries of Europe are very temperate; the inhabitants of northern Europe are much less temperate. Savages, who have had little or no experience of alcohol, are the most intemperate of all when afforded the opportunity. Nearly the same thing is true of opium. The natives of India who have longest used opium are now least harmed by it and are temperate in its use. The Chinese are less temperate. The Burmans and Polynesians, to whom it has only lately been introduced, are extremely intemperate in its use.

In a word, Dr. Reid ascribes racial improvement generally to the same protective mechanism as that through which immunity to disease comes. The body learns to resist, and only such individuals as are capable of resistance survive to be the procreators of a race that will have in itself the perpetuated elements of such resistance. Dr. Reid's paper is discussed in the same issue of the *Independent* by two prominent American authori-

¹ New York Independent, Feb. 15, 1906.

ties, Professor Franklin H. Giddings, of the department of sociology of Columbia University, and H. W. Conn, professor of biology in Wesleyan University, who both agree that the influence of environment on the race has been very much overrated, and that natural selection and the elimination of the unfit are undoubtedly the saving factors in present-day human evolution. The consideration of such opinions should open up new lines of thought to physicians who are apt to cling to the idea that racial degeneration is a question of unsuitable environment rather than of the preservation of the unfit to such a degree that degenerative factors are not eliminated, as they would be in the ordinary process of human nature.

THE ETIOLOGY OF HEMOPHILIA.

Since hemophilia, superficially at least, seems to depend on some alteration in the coagulability of the blood, it is frequently regarded as an example of the hereditary transmission of a chemical peculiarity. The exact cause of this peculiar tendency to prolonged bleeding from insignificant or perhaps imperceptible wounds has been sought vigorously by both histologic and chemical means, but as yet without avail. Various observers have described abnormal thinness, or increased cellularity, or fatty degeneration of the vessel walls, but the findings have been far too inconstant to afford a satisfactory anatomic explanation of all the features of hemophilia. Likewise, increased blood pressure can be ruled out, for, although the left heart is frequently enlarged, usually no increased pressure is demonstrable; furthermore, conditions of high blood pressure, such as nephritis, do not cause hemophilia. The theory of "hydremlie plethora" is also without good foundation.

The most natural place to look for the fundamental fault is in the blood, but speaking strongly against this is the frequent occurrence of "local" hemophilia, *e. g.*, in some hemophilics wounds of the skin may behave as in normal individuals, whereas any injury of the mucous surfaces is followed by pronounced hemophilic bleeding¹; in other cases the hemophilic bleeding is limited to regions above the shoulders; in still another class the bleeding is always from one organ, *e. g.*, the kidneys. Nevertheless a great deal of investigation of the blood has been done, chiefly with negative results. There are no characteristic changes in the cellular elements of the blood, beyond those common to all secondary anemias, except, possibly, Sahli's observation of a decrease in the number of white corpuscles, with a relative increase in the number of lymphocytes. No constant alterations in the salts of the blood have been found; and the proportion of water, the alkalinity and the osmotic pressure of the serum all seem to be normal. Since bleeding is normally stopped principally by coagulation, a deficiency in fibrin or its antecedents might be expected, but most studies on this point have shown a normal

amount of fibrin in the blood of hemophilics, the frequent formation of large tumors of clotted blood at the bleeding points supporting the experimental evidence that the blood contains an abundance of fibrinogen.

As to the rate of clotting, the results obtained by different observers are by no means in accord, which seems to be explained by the recent studies of Sahli,² who has avoided a number of errors made in earlier investigations. He found that in the intervals between the attacks of hemorrhage the rate of the coagulation of the blood is constantly much slower than normal. During an attack of bleeding the coagulation time approaches the normal; indeed, it may be quicker than normal; apparently this is due to a reaction on the part of the organism to the loss of blood. If blood be collected directly from the site of bleeding, the coagulation time is very rapid, because of the accumulation of fibrin ferment from the clot over which the escaping blood flows. Yet, in spite of the normal coagulability of the blood, and the rapid clotting after the blood escapes from the vessel, bleeding continues for long periods before it can be stopped. As there is no general change in the properties of the blood to account for the bleeding, and as local influences seem to be important in hemophilia, Sahli advances the plausible hypothesis that chemical changes in the vessels must be the essential factor in hemophilia. Hemorrhage is ordinarily checked chiefly by the formation of clots that plug up the bleeding vessels at the point of the hemorrhage. The local formation of the clot is believed to be due to liberation of fibrin ferment (or its antecedents) by the injured cells of the vessel wall at the point of the vascular lesion. If the cells of the vessel wall are deficient in these fibrin-forming substances the blood will not clot in the mouths of the vessels, but will first clot when it reaches a place where fibrin-forming substances are furnished by other tissues, or, as is generally the case, when the leucocytes are broken up by exposure to the air or other injurious influences. Under these conditions the blood may clot in large masses, but, as there is no fibrin adhering to the vessel walls at the bleeding openings, blood continues to escape.

Sahli considers, therefore, that the cause of hemophilia lies in hereditary deficiency of fibrin-forming substances (thrombokinas or zymoplastic substances) in the vessel walls, so that when the vessels are injured there is no local production of fibrin such as occurs normally. Local hemophilia may be explained readily as a local deficiency in fibrinoplastic material. In general hemophilia even the leucocytes may exhibit the same defect, in which case clotting of the blood is diminished even outside the tissues. This hypothesis seems to be in excellent agreement with the facts now known, but it yet remains to demonstrate such a lack of fibrin-forming elements in the vessel walls and other tissues of a hemophilic subject. It probably also explains why the marked

1. Abdeghalden: *Ziegler's Beitr.*, 1904, No. 35, p. 213.

2. *Zeits. f. klin. Med.*, 1905, vol. lvi, p. 264. See also *THE JOURNAL*, xlv, page 1817.

increase in coagulability of the blood that can be obtained by administration of calcium salts is, as Wright's³ observations show, not sufficient alone to stop hemophilic bleeding, even although the rapidity of clotting is much greater than normal. As Sahli suggests, whatever means are employed to check such bleeding, should aim to secure a stoppage of the mouths of the vessels by the clotting blood; this may be best attained probably by applying the styptics under considerable pressure.

THE RESPONSIBILITY OF THE MEDICAL SCHOOL FOR CONTRACT PRACTICE AND OTHER EVILS.

We have often referred to contract practice and its causes, and we have included in the latter the overcrowding in the profession, the jealous rivalry and the disorganized condition that permits men to isolate themselves and to minister to the immediate present at the expense of the unthought-of future. Perhaps we have never dwelt with sufficient emphasis on the part which the medical college plays in failing to lay a foundation in the physician's training that will tend to prevent secret division of fees, contract practice, jealousy, slander and various other unethical practices.

One of the ways in which most, if not all, of our medical schools have failed to do their duty has been in graduating students into professional life without having given them the slightest idea of the economics of medicine. No word of those principles of ethics which should govern the conduct of medical men has been taught them. Medical students have had no instruction on what should be their relations to their fellow-physicians and to the profession in general or to the people whom they are to serve. Thus, ignorant of what they should know, they step into professional life and at once begin to make blunders. Who of us can truthfully say that, during the earlier years of his professional life, he did not do many things which were not in accord with that spirit of honor which should have guided him, and this solely because he knew no better? Not only have the colleges failed to teach the student what should be his future attitude toward his professional brethren, what he should do and what he should leave undone, but they have also failed to instill into the student's mind that spirit of "Unity, Peace and Concord" which he most needs.

Indeed, so far from teaching this, our schools have too often placed before the student, throughout his entire course, living, breathing examples of "envy, hatred, malice and all uncharitableness." Who of us can not recall the bitter rivalry, the unseen fights and squabbles between the members of the faculties of his own school and some other, or between those who were members of the faculty and those who would like to have been?

Having been graduated in ignorance, the physician

has begun his lifework in the greatest of all liberal professions, heavily handicapped. The seeds of discontent, of jealousy, of discord, have been sown during his undergraduate years, and they are not healthy seeds to plant in isolated soil. Until very recently, and in large measure even now in many sections of the country, he has found himself a solitary member of an unorganized profession; he has gone his own way and been subject to the evils that accompany a solitary life. His professional neighbors, without knowing him or his ability, have not welcomed him to their ranks. There has been no society of medical men where he might meet his professional brethren and thus counteract the individual peculiarities which develop in all of us. He has been slandered, and, in turn, has quite as unjustly slandered his fellow-practitioners while the people have looked on and their respect for the profession suffered. Whole communities have been disturbed for years, and children have been born, have grown up and gone into the world, carrying a feeling of contempt for the medical profession, simply because a few otherwise good physicians and excellent men could not dwell together in charity. And probably the foundation for most of these lifelong, bitter fights among medical men has been a falsehood.

Much—not all, of course—of this could have been avoided had the young physician been warned in time.

THE EXPERIMENTAL PRODUCTION OF ARTERIO-SCLEROSIS.

The study of disease in the human being is always rendered difficult by the fact that the pathologic investigations, for the most part, must be limited to the terminal stages of the disease. Such studies, while they doubtless advance our knowledge to a large extent, throw little light on a very essential aspect of the subject, the evolution of the disease. In man we must depend for our studies of the early stages of most chronic diseases on the chance finding of early lesions in subjects dead of other conditions. Even here the pathologic conditions may be so various that their inter-relations are difficult of interpretation, and we are finally reduced to the experimental method if we are to follow a given disease, uncomplicated, throughout its course.

Arteriosclerosis is a disease so common and so varied in its effects that it has always been subjected to close study and numerous attempts have been made to produce it experimentally. Up to within three years such attempts have been uniformly unsuccessful. In 1903, however, Josué described lesions in the aorta of rabbits, similar to those found in man, and due to the administration of the active principle of the adrenal glands. His report has since been confirmed by various observers, recently by Pearce,¹ and the original observations have been considerably extended. The lesions of experimen-

3. Wright: Brit. Med. Jour., 1894, No. 2, p. 57.

1. Jour. of Exp. Med., 1906, vol. viii, p. 74.

tal arteriosclerosis in the rabbit, and this seems to be the animal *par excellence* for its experimental production, are remarkably like those which occur in man under natural circumstances. The disease differs in some respects from human arteriosclerosis. It is confined to the aorta, according to Pearce and most observers, though it may attack other vessels, according to Erb. The acuity with which the lesions appear (they are often well marked after two months) would also seem to be different from the usual course of human arteriosclerosis. To the naked eye, the animal and the human disease are practically identical. The vessels of the rabbit show, first of all, an irregular longitudinal streaking of the intima, later irregular, discrete or confluent areas of a pearly gray color, and almost constantly calcified, later still dilatations, even aneurisms, with more marked calcification, appear. It can readily be seen that just such a description also fits the lesions of human arteriosclerosis.

The greatest interest of these experimental arterial lesions lies in the histologic findings. Pearce's work especially shows that the earliest lesions are in the media and affect the muscular tissue and the elastica. The lesions are degenerative in character, partake of the nature of a necrosis, and are followed by the deposition into the necrotic tissue of lime salts. Fracture of the elastic fibers, which is quite commonly seen, occurs least where the deposition of lime salts is greatest, and is seen to the largest extent in connection with aneurismal dilatations where but little calcification has occurred. The proliferative changes in the intima which occur during the later stages of the process seem, according to Pearce, to partake very definitely of the nature of a compensatory process.

The method by which adrenalin acts in producing these changes is still obscure. That the action is due to the direct effect of toxins on the media seems unlikely from its limitation to the aorta. That it is due to the action on the vasa vasorum, as Erb holds, seems doubtful in the presence of changes in the adventitia. The most striking change produced by adrenalin is the increased blood pressure, and some, at least, of the changes observed might be due to this. As Pearce points out, this aspect of the question must be settled by methods other than histologic.

So far as applying the results of these experimental studies to man is concerned, most of the investigators have taken a conservative stand. At present, pathologists are pretty well divided as to the pathogenesis of arteriosclerosis. There are many who hold that the disease is essentially an inflammatory one and that the intimal changes are not secondary to the medial ones; on the other hand, many still support Thoma's view that the first changes are degenerative ones in the media, and that the intimal changes are of a compensatory nature. The experimental work seems to give support to the latter view.

PHYSICIANS AND POLITICS.

It has long been regarded as a kind of unwritten law by physicians that they should take no part in politics. Perhaps, however, this is scarcely the correct way in which to describe the situation. Rather might it be said that physicians, as a body, have shown themselves apathetic in regard to politics, preferring to stand aloof from party strife and to look on the whole question as one in which they had slight concern.

This attitude of indifference has been rudely shaken of late years, and the fact is being borne in gradually on medical men that, in order to protect their own interests and the interests of the general public, they must abandon this lethargic position and act both aggressively and defensively. There are many reasons why the physician should not eschew politics; indeed, there are more reasons in favor of the physician playing his part in the political world. The somewhat cynical indifference assumed by the medical profession toward politics has resulted in the passage of many measures in several states inimical to physicians and by no means advantageous to the community at large. Signs are not lacking that a change of front is about to be manifested by medical men, and that in the not far distant future the doctor must be reckoned with as a power in politics. This is as it should be. It is not urged that the physician should inject himself into the hurly-burly of political warfare, but that he should use his influence to forward such measures as would be conducive to the betterment of sanitary conditions and to oppose measures calculated to be detrimental to the public health.

If the medical man wishes, he can exert an immense amount of influence. He is, in a general way, educated, well read, a good judge of human nature, and, above all, is in closer touch with all sections of the community than are the members of any other class. It goes without saying that, as regards matters that come within his particular province, he is entitled to speak with authority. It has also been suggested that by the participation of medical men in politics the tone would be raised. At any rate, municipalities and governments would often do well if they asked for and acted on expert medical opinion ere embarking on many of their wide-reaching schemes. As it is, the fact stares us in the face that the aid given by the government to medical or sanitary measures has been meager in the extreme. The medical man is a negligible quantity in the affairs of the nation or state, and until he has shown that he is an important member of the community politically he will, as before, be treated with contemptuous indifference. The upshot rests with himself to a very large extent.

THE PREVENTION OF BLINDNESS.

If it be true, as stated, that 33 per cent. of blindness is certainly avoidable, it becomes pertinent to consider whether the profession can do more, both in the care of eye affections and in the education of the public.

In a small proportion of cases, blindness is caused during infancy, but in the majority it must be attributed to the more dangerous, and especially to the contagious, eye affections, concerning which the public is too little informed. There is no disability that is in its way more discouraging to the individual or more costly to the public than blindness, and, while it is possible to render it less of a public and private burden, very much still remains to be done. The evil is none the less serious because a considerable portion of the burden is borne by private resources instead of public charity, as is the case with insanity. The fact that the blind are not so much a public danger does not render them less deserving of public sympathy or make it less our duty to ease and especially to prevent the occurrence of their infirmity. Much can be done by the promotion of proper legislation, as in the state of Massachusetts, and still more by an increased sense of responsibility and conduct in accordance throughout the medical profession. We are doubtless doing much both personally and in the education of the public, but the existence of so much preventable blindness means that we could do more.

PHYSICIANS DO NOT APPROVE OF CHLOROFORMING THE HELPLESS.

The astonishing allegation has been quoted in a number of newspapers recently that two medical societies had indorsed the proposal to chloroform all persons who had reached the age of sixty. All sensible physicians knew this could not be true of any reputable society, and we at once wrote for information. The secretary of one of the societies says it was all the result of a joke on a reporter, who accepted as truth the fabric of lies and embroidered on it to a considerable extent in his paper. We hope that the affair has not contributed to the public's distrust of the physician. We had supposed that the unenjoyable notoriety thrust by a dull-brained press on the originator of the chloroforming-the-aged joke would be a solemn warning to all other physicians to avoid the subject. If one insists on joking, let both joke and listener be approved by a state board of examiners in humor.

THE POSTOFFICE DEPARTMENT AND MEDICAL LEGISLATION.

The influence of the Postoffice Department in regulating, if not actually controlling, the sale of spurious drugs and medicines and appliances for criminal purposes is of the highest importance. It is a source of congratulation that the present Postmaster-General, Mr. Cortelyou, is fully alive to this fact, as is shown by his letter published in the Department of Medical Legislation. The thanks of the medical profession and society in general are due to the Postoffice Department for having suppressed many concerns that have been engaged in this nefarious traffic. It is a matter of sincere regret, however, that the present law does not enable the department to deal summarily with many of these offenders. Congress should so amend existing legislation that it shall be an offense to deposit in the mails matter advertising either remedies, appliances or treatment intended

for fraudulent or criminal purposes and authorizing the confiscation of the same when found in the mails. The assumption of the Postmaster-General that such a law would have a most wholesome moral effect will be ratified by every reader, who will likewise agree in the view that society in general is entitled to precisely this sort of protection.

CANADIAN COURT TO INVESTIGATE A NOSTRUM.

An opportunity is now afforded in British Columbia to secure some light on the alleged harmlessness of "Chamberlain's Colic, Cholera and Diarrhea Remedy." We referred last week to the coroner's verdict on the death of an infant said to have been caused by this nostrum. The *Vancouver World* used some strong language in commenting on the case, and that paper is now sued for libel. We are glad to note that the *World* declares its satisfaction over the prospect. Some of these nostrums are being hard pressed by the exposures that are made, and they will, of course, fight back. Whether they will carry the fight actually into the courts remains to be seen; it is easy to commence a suit, and it has the effect of scaring the weak-kneed. But sometimes the courts get to bottom facts and find out the truth which some nostrum vendors are not anxious to have made known.

ONE ILLUSTRATION OF FRATERNITY AND CO-OPERATION.

An Idaho physician¹ who made application for license to practice was rejected because the results of his examination were not satisfactory, and the district judge to whom his appeal was taken reviewed his examination papers, raising the grade, but not raising it enough to pass him. He then appealed to the Supreme Court, and, while the case was pending, Dr. R. L. Nourse, the president of the Idaho State Medical Society, who was also a member of the State Board of Medical Examiners at the time the application referred to was acted on, commented rather pointedly, in his annual address, on the actions and words of this district judge. Besides quoting freely from the judge's opinion as handed down, Dr. Nourse said: "Think of it! A judge, however learned he may be in matters of law, sitting as superior to a board of six medical men on matters pertaining to medicine, gravely scrutinizing the markings given by a medical board to a candidate for a license to practice medicine, to see if he had been rated correctly. It would be intensely funny if it were not, in fact, so serious a matter." Further, commenting on the remarks of the judge concerning the subject of pathology, Dr. Nourse said: "It will, no doubt, be news to you that pathology is a subject that only specialists (he does not say what specialists) are expected to be posted on. Although every *bona fide* medical school in existence teaches pathology, and every state examining board must examine on it, yet this learned judge sweeps it aside as an unfair test." For these remarks Dr. Nourse was summoned before the judge, who fined him \$300.00

1. See Idaho news, this issue.

and costs for contempt of court. An appeal was taken to the Supreme Court, but it refused to set aside the action of the district judge and the fine was paid. Dr. Nourse's public criticism of the judge while the case was yet unfinished may have been technically wrong, but it was worth the fine to have the opportunity of expressing the frank opinion: The best part of the whole matter, however, is that the members of the Idaho State Medical Society showed their fraternal feelings in a practical manner by voluntarily taking such action that Dr. Nourse will be nearly, if not fully, repaid. They have sent to the secretary \$240.00, and more is still coming in. It is this spirit, which is the natural result of organization, that is so encouraging for the future, for it is a spirit that is gradually coming to prevail among the members of the profession in every state.

CONTAMINATED FOOD.

The work of securing pure food involves more than making laws against adulteration. Food which is not adulterated may yet be contaminated in its manufacture and preparation for market. In a recent article Mary Sherman,¹ of the National Consumers' League, portrays some conditions that almost make one afraid to eat. The article is illustrated and shows in what vile and disgusting quarters macaroni, ice cream, candy and other products are prepared. For the most part, these supplies are for consumption among the poorer classes, and the personal danger is not very apparent to the average person outside of the slums; but this can not be said of a New York nut factory, in which nuts are shelled for candy factories, bakeries and retail groceries. The firm makes a specialty of "health food" preparations, including nut marmalade, nut butter and nuts packed in glass jars. These products are sold in the best shops and are purchased by well-to-do people. The workers are described as being, without exception, dirty. Their hands were filthy. One girl, who separated the unbroken shelled nuts with her fingers, had ulcers on the backs of her hands. During the rush season the workers, who are largely Italians on poor wages, take work home. Some of these homes are said to be indescribably filthy and crowded. In one case, nuts were picked over by an Italian and his children. The father and one boy were tuberculous. The father had tuberculous joints, and during the time that he was engaged in this work he had had a knee-cap and part of the arm bones removed. The nut meats picked over in such houses by such persons lie on their tables over night and, on being returned to the factory, are not washed or cleaned, but are packed into jars to be sold at 25 cents each, with advertisements calling attention to the purity and cleanliness of the goods. These specific instances are simply cited to indicate the need of health inspection of the tenements; the pure-food agitation involves an immense amount of work and demands the sympathy of people in every walk of life, for self-protection as well as for the protection of those who have to buy cheap foods.

THE DIAGNOSIS OF INCIPIENT TUBERCULOSIS.

There is no subject which so imperatively requires the attention of the general practitioner as the diagnosis of incipient tuberculosis. It is generally admitted to-day that, if the symptomatology be recognized early enough, the sufferer in most cases can be restored to health. Yet the pathetic fact remains that the disease is generally not recognized until it has passed the incipient stage. The committee on nomenclature of the National Association for the Study and Prevention of Tuberculosis has provided this definition of incipency: "Slight initial lesion in the form of infiltration limited to the apex or to a small part of one lobe; no tuberculous complications; slight or no constitutional symptoms (particularly including gastric or intestinal disturbances or rapid loss of weight); slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest; expectoration usually small in amount or absent; tubercle bacilli may be present or absent." Since most patients first consult the family physician, he ought to be a specialist in tuberculosis, and if a practitioner who assumes the important rôle of family physician does not feel proficient he should realize his responsibility and take steps to render himself thoroughly familiar with the symptomatology, diagnosis and treatment of this disease. In few other diseases will good and timely action bear so much beneficent fruit. In no other disease will the mournful results of unskillfulness and conscienceless neglect be visited so disastrously on the physician. It is not intended to set forth here the many factors to be considered. We would but emphasize the fact that conclusions must be reached only after the consideration of many details.¹ One among these would mean nothing; several taken together would be suggestive; a number combined would be conclusive. There is no telling to what a slight hint may lead. The faculty of judgment, of basing correct conclusions after having grasped essential features, the discriminative temperament, the scent for diagnosis, must here be called into play; and when it exists the physician can and will, without doubt, diagnose most cases of tuberculosis while the disease is in its incipency.

Medical News

IDAHO.

New Hospitals.—Articles have been filed for the incorporation of the Pocatello General Hospital with a capitalization of \$25,000, of which \$5,000 has already been subscribed.—Coeur d'Alene Hospital has been reorganized and incorporated by Drs. B. J. Seallon and W. W. Wood of Coeur d'Alene, and Drs. J. L. McGee and C. W. Craik, Wallace.—The Idaho Falls Hospital Association has been incorporated with a capital stock of \$20,000.

State Board of Examiners Has Quasi Judicial Powers.—A very important decision was recently handed down by the Supreme Court of Idaho bearing on the judicial powers of the State Board of Medical Examiners. Dr. Raaf took the examination for license to practice at the regular meeting of the

¹ Report of the Committee on Early Diagnosis of the National Association for the Study and Prevention of Tuberculosis. THE JOURNAL, A. M. A., May 27 and June 3, 1905, pages 1706 and 1804. See also: "The Early Diagnosis of Incipient Tuberculosis," a circular issued by the Illinois State Board of Health, which can be obtained, we believe, by addressing Dr. James A. Egan, Springfield, Ill.

board in October, 1904, but failed, securing a general average of only about 56. Appeal was taken by him to the District Court, on a writ of review, and the judge was asked to re-rate the examination papers, which the judge did, and as a result raised the doctor's grade from 56+ to 69. And further, the judge in his findings says: "But I find pathology to be a subject that only specialists are expected to be conversant with, and I therefore set aside the subject of pathology entirely, and on all the other branches I find the plaintiff entitled to 73.48." This, however, was not enough to pass the plaintiff (the law requires 75), and the judge refused to order the board to grant him a license to practice. From this decision the plaintiff appealed to the Supreme Court, and recently this court handed down a decision wherein the board was sustained in its contentions that the district judge exceeded his jurisdiction in presuming to review and remark the examination papers of applicant for license, and that appeal from the decision of the board of examiners as to an applicant's fitness to practice medicine could only be taken on points of law. In other words, the board of medical examiners is given quasi-judicial powers, and so long as its actions are within and according to law, its decision as to an applicant's qualifications to practice medicine is final and without appeal.

ILLINOIS.

Illegal Practitioner Fined.—Stephen Picard was found guilty February 16 of advertising himself as a licensed physician, and was fined \$100 and costs.

State Charities Board Election.—The State Board of Charities met in the office of the secretary, at Springfield, February 13, and elected Dr. Frank Billings president.

Personal.—Dr. Francis E. North, Taylorville, was recently operated on for appendicitis in St. Louis.—Dr. Ezra Weiss, Peoria, is critically ill with cerebral hemorrhage.

Dedicate New Building.—The Illinois Western Hospital for the Insane, Watertown, dedicated its new amusement hall and two cottages for the treatment of insane consumptives, February 12.

New Hospital for Consumptives.—The building committee of the Cook County Board has approved the plan for the proposed emergency hospital for consumptives on the County Hospital ground, to cost \$15,000.

Civil Service Examination for Internes.—The Civil Service Commission announced the following appointments for members of the examining board to conduct the examinations for internes for Cook County Hospital, March 6 to 10: Drs. Ferdinand Henrofin, Charles S. Bacon, J. B. Colwell, Malcolm L. Harris, Charles E. Kahike, John D. Robertson and Robert B. Preble.

Dr. McCormack's Visit.—Dr. H. C. Mitchell, president of the Illinois State Medical Society, announces that Dr. J. N. McCormack will devote the entire month of April to Illinois. He will begin his itinerary in the ninth judicial council district, which is located in the extreme southern end of the state, and will take the districts according to their geographical arrangement, going from south to north. In the work of medical organization, says Dr. Mitchell, Dr. McCormack has no superior in the United States. The work he is doing is of the highest order and includes not only the medical profession, but the laity as well. There is a great demand for this kind of work throughout the entire country, because it brings the profession into closer and more harmonious relations, and teaches the physician his duty to his patient, and the patient his duty to his physician. Dr. McCormack invites the general public to all these meetings, and wants all classes of thinking people, such as lawyers, doctors, ministers, farmers, laborers, women's clubs, temperance organizations, county officials, congressmen, legislators and United States senators. Dr. McCormack says that often after he has delivered his lecture the physicians in attendance will say that it is too bad that the general public could not have been invited, as it would have been just as instructive to them. Dr. Mitchell, therefore, hopes that this mistake will not be made this time, as Dr. McCormack will only visit Illinois once, and, if the general public is not invited, it will be too late to rectify the mistake.

Chicago.

A Low Death Rate.—For the week ended February 17, 527 deaths were reported, equivalent to an annual death rate of 13.41 per 1,000, which compares favorably with the rate of 14.34 for the previous week and with 16.50 for the corresponding week of 1905. Pneumonia led death causes with 80, fol-

lowed by consumption with 72, heart diseases with 49, violence with 37, Bright's disease with 29, acute intestinal diseases with 29, nervous diseases with 26, and cancer with 23.

Practical Disinfection.—The State Board of Health has issued a circular detailing the experimental work in formaldehyde disinfection done in its laboratory. As a result the board now feels justified in recommending formaldehyd for use in disinfection after contagious diseases, if employed by the methods described, with potassium permanganate and with 40 per cent. aqueous solution of formaldehyd, and believes that in properly sealed rooms positive and reliable disinfections can be secured by the use of 3½ ounces of potassium permanganate and one pint of formaldehyd solution to each 1,000 cubic feet of air space.

Dinner to Dr. Doherty.—Seventy-five members of the Chicago Medical Society attended a dinner in honor of Dr. David J. Doherty, February 17, at which Dr. Charles S. Bacon presided as toastmaster, and addresses were made by Drs. Scam, Evans and Corwin, eulogizing the thorough, able and conservative work of Dr. Doherty as a trustee and as a member of the society, and wishing him success in his trip to the Philippine Islands. Dr. Doherty responded, giving details of his plans of completing the dictionary of the Philippine dialects and stating that he expected to spend a year or two in sociologic and ethnologic studies before returning. A beautifully bound book, containing an address signed by all those present, was presented to Dr. Doherty.

MARYLAND.

To Prepare for Centenary.—A meeting of the alumni of the University of Maryland was held February 21 to prepare for the celebration in May, 1907, of the one hundredth anniversary of the medical department.

Personal.—Dr. Louis A. Griffith, Upper Marlboro, has been appointed a member of the State Board of Health.—Dr. Robert S. Tyson, Frederick, has been appointed physician to Montvue Hospital, Frederick County.—Dr. William B. Morrison, Hagerstown, has been appointed physician to Bellevue Asylum.

For State Sanatorium.—A bill has been introduced into the legislature appropriating \$25,000 for a state sanatorium for consumptives in the Blue Ridge Mountains. This sum will be devoted principally to the purchase of land, and the institution will be operated in conjunction with the hospital for consumptives in the suburbs of Baltimore.

Hospital Report.—The seventh annual report of the Cambridge Hospital shows that during 1905 777 patients were treated, with 24 deaths. The receipts and expenditures were each about \$12,550, leaving a small balance in bank. A special gift of \$800 was received for the purchase of a set of sterilizers and through private subscriptions an x-ray department, a bacteriologic laboratory and an operating room were equipped.

Lectures on Milk.—The State Board of Health inaugurated a course of lectures on milk February 20, to continue every Tuesday evening until May 1. The lectures are delivered in McCoy's Hall, Johns Hopkins University, and include the economic, dietetic and hygienic relations of milk, and will mark the progress of an exhaustive investigation covering the production, transportation, reservation, distribution, domestic care, dietetic uses, adulteration, sophistication, epidemiology and governmental control of milk and milk products of the country. The lectures will be followed by an exhibition under the auspices of the State Board of Health, the State Live Stock Sanitary Board, the Agricultural College of Experiment Station, and the Association for the Prevention and Relief of Tuberculosis.

Baltimore.

Health Report.—The health department estimates that there are at present more than 10,000 cases of influenza. During the week ended February 17, 49 deaths from pneumonia and 4 cases of smallpox were reported.

Personal.—Dr. John Turner was presented with a solid silver wine tray by a number of physicians in New York, who have united for original anatomic research.—Dr. George Wegendorf has gone to St. Augustine, Fla.

The Sale of Patent Medicines.—Dr. G. Milton Linthicum addressed the Armad Club, February 15, in behalf of the bill now before the legislature regulating the sale of patent medicines, and on February 17 a public meeting was held at Johns Hopkins University in the interest of the same bill, over which Dr. W. S. Thayer presided.

Hospital Report.—Johns Hopkins Hospital reports that for the year ended January 31 there were treated 3,027 whites and 1,197 colored patients; of these 3,350 were discharged as well or improved, 130 as unimproved, 292 were not treated, 134 were transferred to other departments, and 243 died. In the dispensary 71,435 were treated.

MASSACHUSETTS.

New Hospital Dedicated.—St. Anne's Hospital, Fall River, was dedicated with elaborate ceremonies February 4 by the Rt.-Rev. Bishop Stang. At present the institution can accommodate 87 patients.

Testimonial to Bowditch.—Over 400 patients who have been or are being treated at the Rutland Sanatorium presented recently to Dr. Vincent Y. Bowditch, who has been visiting physician there, a beautifully bound and illuminated testimonial in token of their regard for him.

Legacies.—By the will of Jasper P. Pope, Beverly, \$1,000 is bequeathed to the Beverly Hospital.—By the will of Mrs. Helen G. Colburn the Children's Hospital, Boston, receives \$50,000 and the Colburn fund of the Massachusetts General Hospital \$75,000.—Harvard College will receive a legacy of \$50,000 for its medical department under the will of the late George S. Hyde, to be paid on the death of Elkin P. Hyde and Mrs. Annie M. Sargent, brother and sister of the testator.

The Association Meeting.—The meetings of the American Medical Association, June 5 to 8, in Boston, come the week before the regular annual meetings of the Massachusetts Medical Society. The committee of arrangements for the latter has, therefore, decided to omit the scientific papers usually read before the medical and surgical sections on Tuesday afternoon. The time will be devoted to hospital visitation. All the other sessions of the state society will be held as usual, including the Shattuck lecture, on Tuesday evening.

Personal.—Dr. William P. Lawler, Lowell, has been made a member of the local board of health.—Mrs. Daniel S. Harkins an. Francis X. Crawford have succeeded Dr. Alfred A. Wheeler as physicians for the Boston street department.—Dr. Mary T. Bissell, New York City, has been elected superintendent of the North Adams Hospital.—Dr. Joseph N. Boyer, Jr., has been appointed city physician of Springfield, vice Dr. Simon J. Russell.—Dr. Joseph C. Pothier has been appointed medical inspector; Dr. Frank E. Stetson, chairman; Dr. Manuel V. Sylvia, quarantine physician, and Dr. Charles P. Connor, bacteriologist of the new Bedford board of health.—Dr. Carl H. Eidam has been chosen as chairman of the Lawrence board of health.—Dr. George A. Fagan has been appointed chairman of the North Adams board of health.

Change in Harvard Faculty.—The newly issued catalogue of Harvard Medical School shows 141 names in the list of faculty and instructors, one to every two students. A good many changes are to be noted. Those who have died or resigned are: Edward S. Woods, professor of chemistry; Francis H. Davenport, assistant professor of gynecology; H. H. A. Beach, John W. Elliot and John C. Muir, lecturers in surgery; Charles F. Withington, instructor in medicine; James O. Jordan, assistant in materia medica; James G. Mumford, instructor in surgery; and Drs. Samuel S. Maxwell, William A. Brooks, Jr., Hibbert W. Hill, George B. Magrath, Robert L. Emerson, David H. Walker, Clarence W. Keene. New appointees or promotions are: Drs. Louis Nelson, John W. Bartol, Robert B. Grenough, Ralph S. Lillie, Alexander Quakenbush, Eugene A. Crockett, Harvey P. Towle, Frederick S. Burns, Elliott P. Joslin, Harry C. Low, Arthur M. Worthington, George L. Baker, Francis W. Palfrey, Walter A. LeCompte, E. deW. Wales, Henry A. Christian, Carl L. Alsberg, Horace Bisney, Walter R. Brinckerhoff, Frederick E. Lord, Lawrence J. Henderson, S. Burt Wolbach, George H. Wright, New Austin teaching fellows are: Dr. Fred T. Murphy, Dr. William L. Holt, and Dr. Fred W. Thyng.

Boston.

McLeod Guilty.—At a meeting of the board of trial of the Massachusetts Medical Society, held January 31, Dr. Percy D. McLeod was found guilty of unprofessional conduct. The penalty for this offense is expulsion from the society.

Staff Changes.—The following changes have been made in the visiting staff of the Boston City Hospital: Dr. Abner Post has resigned as senior visiting surgeon; Dr. Frank W. Draper as medicolegal pathologist, and Dr. Edward T. Twitchell as physician to the Convalescents' Home. Dr. Herbert L. Burrell has been promoted to senior visiting surgeon; Dr. George H. Monks to junior visiting surgeon; Dr. Fred B.

Land becomes first assistant visiting surgeon; Dr. Frederick J. Cotton, second assistant visiting surgeon, and Dr. David Cheever, third assistant visiting surgeon. Dr. William H. Roby, Jr., has been appointed medical registrar vice Dr. John N. Coolidge, resigned.

MICHIGAN.

New Hospital.—The new Sault Ste. Marie Hospital was formally opened February 1.

Fire in Hospital.—The interior of the Michigan Children's Home Hospital, St. Joseph, was damaged by fire and water February 2 to the extent of \$2,500.

Change of Name.—Dr. Charles B. Nanercede, Ann Arbor, has had a petition granted by the judge of the Probate Court to change his name to Charles Beylard Guerard De Nanercede.

Medicine Sample Distributor Convicted.—In the case of the Detroit Board of Health against Andrew McIntyre, charged with distributing samples of medicine from house to house in violation of the ordinance, the defendant pleaded guilty and threw himself on the mercy of the court and was released on suspended sentence.

Birth Registration.—The total number of births reported to the Department of State during January was 4,032, equivalent to an annual birth rate of 18.4 per 1,000. The registration for the first month of the operation of the new law requiring immediate registration of births has been satisfactory, although several districts made no report for the month. The number reported for the month, however, exceeds that for January, 1905, under the old law, by 830.

Academy of Medicine Election.—At the annual meeting of the Academy of Medicine of Southwestern Michigan, Kalamazoo, January 23, the following officers were elected: Dr. Alvin H. Rockwell, Kalamazoo, president; Drs. Norris A. Williams, Bangor, and Orrin F. Burroughs, Plainwell, vice presidents; Dr. Walter B. Blayker, Kalamazoo, secretary and treasurer; Dr. Edward H. Van Deusen, Kalamazoo, librarian, and Drs. George D. Carnes, South Haven, and Orton H. Clark, Kalamazoo, directors.

January Mortality.—The total number of deaths during January was 2,968, equivalent to an annual death rate of 13.6 per 1,000, as compared with 12.4 for December. Of the deaths recorded 544 were infants under one year of age and 943 of individuals aged 65 years and over. Among the important causes of death were: Pneumonia, 288; tuberculosis, 233; accidents and violence, 150; cancer, 135; diphtheria, 63; typhoid fever, 46; diarrheal and diseases of infants, 44; influenza, 39; whooping cough, 27; measles, 19; and scarlet fever, 18.

Personal.—Dr. A. S. Kitchen, North Escanaba, has been appointed local surgeon for the Chicago, Milwaukee and St. Paul Railway.—Drs. John Van der Laan and Frank W. Garber, Muskegon, have resigned as trustees of the Hackley Hospital in that city.—Dr. Roger S. Morris, Ann Arbor, instructor in internal medicine and demonstrator of clinical medicine in the medical department of the university, has accepted an appointment in the Johns Hopkins Hospital, Baltimore.—Dr. and Mrs. R. Adlington Newman, Detroit, sailed for the Mediterranean January 26.

MINNESOTA.

New Hospitals.—The George B. Wright Memorial Hospital, Fergus Falls, was opened to the public January 1. It has accommodation for about twenty-five patients.—The German Lutherans of Mankato have decided to erect a hospital, to cost \$50,000, and with accommodation at present for forty-five patients.—A site has been donated for the Norwegian Hospital, Minneapolis. The buildings are expected to cost about \$100,000.—The St. Paul Commercial Club has decided to erect a public hospital in that city to cost \$14,000.—Bethesda Hospital is to be erected in Crookston, as the \$12,000 fund required has been subscribed.

Personal.—Dr. Justus Ohage and family, Minneapolis, sailed for Naples from New York, February 24.—Dr. Andrew J. Gilkinson, Osakis, has been appointed a member of the State Board of Health.—Dr. Julian A. Du Bois, Sauk Center, has been appointed a member of the board of managers of the School for Deaf and Blind, Faribault.—Dr. Frank Murphy, Caledonia, has been appointed physician of Houston County.—Dr. Otto C. Quitmire, Parker's Prairie, has been appointed local surgeon for the "Soo" System.—Dr. Charles W. More, Eveleth, has been reappointed a member of the State Board of Health.—Dr. Edmund W. Bayley, Sleepy Eye, has been ap-

pointed brigade surgeon, Minnesota National Guard, with rank of major.—Dr. J. V. Johnson has been appointed health commissioner of Eveleth.—Dr. and Mrs. Samuel D. Flagg, St. Paul, have gone to the Mediterranean.—Dr. Eduard Boeckman, St. Paul, has gone abroad.—Dr. Charles Freeman, St. Paul, has been elected secretary and treasurer of the Anglo-American Club of Berlin.—Dr. Christopher J. Woolway, St. Paul, has been appointed chief physician for the Delaware Mine in Keweenaw County.

NEW JERSEY.

Hospital Changes Name.—Bishop O'Connor and the trustees of the new Roman Catholic hospital, Orange, have decided to change its name from the Hospital of the Immaculate Conception to St. Mary's Hospital.

Recovers Damages.—The suit of Dr. Reginald S. Bennett, Asbury Park, to recover \$20,000 damages from Adolph Busch, St. Louis, whose automobile ran down the physician and his wife and child in June last, was decided February 7, and a verdict of \$1,292 was given the plaintiff.

Personal.—When Dr. Charles Brewer completed his duties as house physician in the New Jersey state prison, the officers of the prison presented a silver tea service to him. Dr. Brewer was house surgeon for fourteen years. He is succeeded by Dr. S. F. Stanger, formerly president of the board of prison inspectors.

Funds for Hospitals.—William T. Evans, the artist, has donated \$20,000 to Mountainside Hospital, Montclair, for the erection of a home for nurses. Miss Margaret S. Jarvie has also made a donation of \$5,000 to the institution.—Mrs. Everett Colby has sent \$5,000 to the New Jersey Orthopedic Hospital and Dispensary, Orange.

Contagious Disease in Camden.—The secretary of the board of health reported the number of cases of contagious diseases for the past month to be 71. Of these reported only two were of typhoid fever. This demonstrates the value of Camden's water supply, there having been practically no cases of typhoid fever since the installation of the artesian wells in this city.

Personal.—Dr. J. Walter Stiles, Jr., assistant physician at the Essex County Hospital for the Insane, Newark, was operated on for appendicitis, January 31.—Dr. William F. Ridgewood has been appointed city physician of Atlantic City, vice Dr. Leon H. Armstrong.—Dr. Charles C. Phillips, Deerfield, who has been a practitioner for fifty-two years in that place, expects to move to Pitman Grove.—Dr. and Mrs. C. D. Martinetti, Orange, returned from Europe by the *Princess Irene* January 25.—Dr. Joseph B. Shaw, Trenton, was thrown from his automobile and seriously injured, January 25.

NEW YORK.

Appeal for Stony Wold.—In order that this institution may claim the conditional gift of \$13,500, \$1,926 must be secured by March 1. The directors have been successful in raising \$17,575 and are making a great effort to get the balance required.

Work on State Hospitals.—The State Lunacy Commission has awarded contracts for work to be done on the state hospitals at Rochester, Poughkeepsie and Willard. At Rochester the north building of the hospital group is to be remodeled. At the Hudson River State Hospital a refrigerating apparatus is to be installed at a cost of \$7,395. At Willard a contract was let for the construction of a new cold storage building to cost \$10,131, and the installation of refrigerating machinery at a cost of \$7,163.

State Board of Charities.—Some of the recommendations for legislation contained in the recent report of this body are: That the appropriations to the state institutions be subdivided in the appropriation bill so that fixed sums shall be appropriated for food supply and clothing apart from the appropriations for salaries and other fixed charges; that the Craig Colony for Epileptics be enlarged as rapidly as possible, that it may be able to take epileptics of all classes from almshouses and other places where they can not receive proper care.

Against Consumption Colony.—A bill has been introduced to prevent New York City from establishing a consumptive colony in Richmond for which appropriations have already been made. The bill seeks to make an amendment to the New York City charter giving local boards of improvement the power to recommend the establishment of penal institutions and hospitals within their districts, and further making provision that no such institution or hospital shall be established in any borough, if such local board, by vote of three-fourths of its members, disapproves.

State Health Report.—Dr. Eugene Porter reports that during the past year 1,554 deaths from typhoid fever occurred in the state, and that it was no exaggeration to say that almost every one was caused by infected water. The efforts of the health departments to prevent pollution of public waters should be supplemented by legislation which will give it further control of potable waters of the state by providing that all plans for public water supplies be approved by the state commissioner of health, and also to secure inspection of proposed and existing sewer systems. Not only was it important that all sewer systems in the different towns and municipalities in the state be investigated, comparison made and examinations conducted, but it was equally important that every sewer system, sewage disposal plant, manufacturing establishment, every municipality and summer resort should be thoroughly examined at least once a year and a competent report made in every case. The registration of births was far from satisfactory. The most incomplete registration was shown in Troy and Albany, where a birth rate of but 10.1 per 1,000 as against a resident death rate of 16.7 was recorded. In Troy the birth rate was 11.8 and the death rate 19.1. It was doubtful whether one-half of the births occurring in these cities were reported. The registration of marriages was also unsatisfactory. For this he recommended that a marriage license be required from the county clerk of the county in which the contracting parties resided. The following cities reported fewer births than deaths: Albany, Troy, Binghamton, Cohoes, Corning, Fulton, Hudson, Ithaca, Middletown, Newburg, Oswego, Rensselaer, Rome and Watervliet. The vital statistics for the year showed 172,259 births, 137,816 deaths and 78,261 marriages as against 165,014 births, 141,363 deaths and 74,677 marriages in 1904. Based on the recent census population the birth rate is 21.3 per 1,000 and the death rate 17.

New York City.

Personal.—Dr. John N. Drury of Bellevue Hospital has gone to his home in Lowell, Mass., to undergo treatment for blood poisoning. It is feared that he will lose his arm.

Harvey Society Lecture.—The tenth lecture in the Harvey Society course will be delivered at the New York Academy of Medicine by Prof. Charles S. Minot, February 24, on "The Nature and Cause of Old Age."

Low Death Rate.—At the annual meeting of the trustees of the Hebrew Infant Asylum it was reported that the death rate of the institution for the past year was 1 per cent. It was thought that this was the lowest death rate in any children's institution in the United States.

Poor Food for Steerage Passengers.—The captain of the steamship *Erny* of the Austro-American Line has been arrested charged with providing unwholesome food for infants in the steerage. Several other captains of ships in the immigrant trade have also been arrested for failing to obey the statutes relating to accommodations for steerage passengers.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended February 10, 1,390 cases of measles with 49 deaths; 432 cases of diphtheria with 49 deaths; 349 cases of tuberculosis with 161 deaths; 215 cases of scarlet fever with 16 deaths; 34 cases of typhoid fever with 7 deaths; 20 cases of cerebrospinal meningitis with 17 deaths, and 151 cases of variella—a total of 2,591 cases with 299 deaths.

Out-Door Pneumonia Treatment.—Preparations are being made to remodel additional parts of the roof of the Presbyterian Hospital for the open-air treatment of pneumonia. This treatment has proved so successful that it is hoped the increased facilities will be available before the end of the winter. At present only children can be treated this way, as adults can not conveniently be carried on the roof and consequently receive treatment in small rooms with windows open.

Wood Alcohol in Communion Wine.—Health Commissioner Darlington told the alderman's committee on salaries and officers that the adulteration of the food and drink sold in this city had become so general that it had spread to communion wines, some of which are alcoholic. He had the contents of a bottle labelled "communion wine" analyzed and found wood alcohol, hard acid and anilin coloring matter. Dr. Darlington has planned a crusade against adulterated foods and drinks on a small scale. To make a complete job he thinks would cost the city \$500,000 a year. He has asked for power to appoint a supervising chemist at \$1,800 a year. When samples are found containing substances injurious to health he proposes to prosecute the makers and sellers. The committee decided to report favorably on Dr. Darlington's application.

NORTH CAROLINA.

Personal.—Dr. George A. Coggeshall, Henderson, is critically ill with pneumonia.—Dr. Isaac W. Faison, Charlotte, who has been seriously ill, is reported to be improving.—The vacancy in the office of coroner of Buncombe County, caused by the recent death of Coroner Dr. W. E. Hemphill of Arden, has been filled by the election of Dr. E. R. Morris of Asheville.

To Keep Water Pure.—Superior Court Judge Ferguson has made permanent the injunction recently obtained by the city of Durham against the Eno cotton mills near that city, restraining them from emptying their sewage into Eno Creek. The company is further ordered to provide a suitable system of sewage disposal at once, the method to be subject to the court's order, to the approval of the State Board of Health. The result is complete victory for the city of Durham and her efficient health officer, Dr. T. A. Mann.

Test Compulsory Vaccination.—The right of the state to enforce vaccination of school children is again to be tested in the courts of this state in a case now being developed in Union County. The county superintendent of health, Dr. H. D. Stewart, Monroe, went to the school house to vaccinate Mr. H. G. Griffin and his pupils, as there had been cases of smallpox in the vicinity and a general vaccination had been ordered. Principal Morgan declined to be vaccinated himself or to allow the children to be, alleging that their parents had forbid it being done. At the trial the teacher held that as the parents had forbidden the vaccination, had he permitted its being done he would have been personally and legally liable to them for damages, while the health officer contended that he should not have resisted the order of the health board. The final decision (which was reserved until March 10), rests on the rules adopted by the county board of health, the code of North Carolina saying it is a misdemeanor to violate the laws as passed by a county board of health, or to obstruct its operation, but it seems the code has been the subject of revision and a copy of the revised code, which went into effect only a few days ago, was not in court, hence the reserving of the decision.

OHIO.

Hospital Closed.—The Marion City and County Hospital was closed February 6.

Gifts for Hospital.—At the annual meeting of the trustees of Lakeside Hospital, Cleveland, gifts were announced aggregating \$300,000.

Pay Ward Reopened.—The board of public service has decided to reopen the pay ward of the Cincinnati Hospital, holding, however, the right to close it again if the hospital should become so overcrowded as to necessitate its use for public cases.

Fires.—The residence of Dr. Leonard E. Warren, Marietta, was damaged to the extent of about \$300 February 1 by an explosion of natural gas.—Longview Hospital was damaged to the extent of \$1,000 by a fire which started in the superintendent's departments, February 10.

Cuspidors in Street Cars.—The State Board of Health has adopted a rule requiring companies owning and operating steam and electric cars not confined wholly within one municipal locality to provide cuspidors, and declaring it dangerous to public health to spit on the wall or floors of any such cars.

Distillers Object.—As was to be expected, considerable opposition has developed as a result of Health Officer Allen's recommendation to the Cincinnati health board to prohibit the sale of distillery slop to dairymen. If Dr. Allen's recommendation is adopted it will mean a loss of thousands of dollars a year to the breweries and distilleries, which, of course, is nothing to the owners of this otherwise unmarketable article, they claiming probably that it is an extremely useful article of diet for the milch cow.

Personal.—Dr. W. A. Dickey, Toledo, who was recently injured in a street-car accident, is convalescent.—Dr. Goodhue Kinson, Cincinnati, has been appointed assistant at the Ohio Hospital for Epileptics, Gallipolis.—Dr. Oscar W. Bonner has been reappointed health officer of Delaware.—Dr. Orlando T. Maynard, Elyria, sailed for England February 6.—Dr. Frank C. Reed and family, Akron, left for a Mediterranean trip February 6.—Dr. Harry D. Belt, Kenton, has been reappointed physician of Hardin County.—Dr. James G. Shirera has been appointed surgeon of the B. & O. System at Newark.—Dr. Charles A. L. Reed, Cincinnati, has been chosen president of the Smoke Abatement League.—Dr. James A. Leech, Columbus, has been appointed physician at the workhouse.—Dr. Paul D. Hale, Dayton, is convalescent after a severe attack of pneumonia.

Non-Political Management of Hospital.—At the regular meeting of the Cincinnati Academy of Medicine, January 29, a resolution was adopted providing for a committee of five who were to devise some means by which it would be possible to take the department of health and the City Hospital out of the hands of the political party in power; in other words, to form a non-partisan board for the governing of these two important departments of the city service. As the law now stands these departments come under the management of the governing power of the city and can not be taken from them except by act of legislature. Theoretically, everyone is prepared to admit that it would be for the good of the city and for the best interests of the physicians if these two branches of city government were in charge of non-partisan boards, but whether the idea can be carried out at the present time is problematical.

PENNSYLVANIA.

Smallpox at Bryn Athyn.—Three cases of smallpox were reported in one home in Bryn Athyn during the past week. Dr. Fred Johnson, chief medical inspector of the state health board, has been detailed by the health commissioner, Dr. Dixon, to take charge of the situation. The village may be placed under state quarantine on account of the refusal of many of its residents to submit to vaccination.

Philadelphia.

Bequests.—The will of the late Araminta P. Banks bequeaths \$25,000 each to the Home for Consumption, the Sunday Breakfast Association, and the Midnight Mission.

Health Report.—The deaths reported from all causes during the week numbered 612. This is an increase of 28 over last week, and an increase of 13 over the corresponding week of last year. The principal causes of death were: Typhoid fever, 37; measles, 14; diphtheria, 16; meningitis, 4; consumption, 81; cancer, 18; apoplexy, 14; heart disease, 55; acute respiratory diseases, 120; enteritis, 28; cirrhosis of liver, 10; Bright's disease, 45; old age, 14; accidents, 14, and marasmus, 4. There were 544 cases of contagious disease reported, with 59 deaths, as compared with 530 cases and 44 deaths reported in the preceding week. There were 429 new cases of typhoid fever, 725 of measles, 160 of pneumonia, 152 of tuberculosis, 78 of diphtheria, 51 of chickenpox, 37 of scarlet fever, and 4 of meningitis.

WISCONSIN.

New Building for Hospital.—St. Mary's Hospital, Milwaukee, is to be torn down and a new building erected on its site to cost about \$200,000.

Medicine Peddler Found Guilty.—On February 6 S. R. King, a medicine peddler of Beloit, was found guilty of practicing medicine without a license, and fined \$50 and costs.

District Society Meeting.—At the meeting of the Eleventh District Medical Society, held recently in Ironwood, Dr. Matthew S. Hosmer, Ashland, was made president, and Dr. Charles D. Conkey, Superior, secretary-treasurer.

Personal.—Dr. George D. Ladd, Milwaukee, was stricken with cerebral hemorrhage while performing an operation at Milwaukee Hospital, January 20.—Dr. Thomas W. Nuzum, Brodhead, has gone to Europe.—Dr. Patrick H. McGovern, Milwaukee, has succeeded Dr. John R. Currens, Two Rivers, as a member of the State Board of Medical Examiners.—Dr. Henry J. Stalker, Kenosha, was taken seriously ill at a banquet in Racine, February 6.—Dr. Lawrence Mayer, Hudson, has been appointed a member of the State Board of Health.

Fox River Society Meeting.—The Fox River Valley Medical Society held its annual meeting and banquet at Green Bay, Wis., January 16. The following officers were elected for the ensuing year: President, Dr. Robert E. Minahan, Green Bay; vice-presidents, Drs. Walter R. Hicks, Menominee, Mich., and Henry W. Abraham, Appleton, Wis.; secretary and treasurer, Dr. Chester M. Echols, Appleton, Wis., and censor, Dr. William E. Fairfield, Green Bay, Wis. The secretary was instructed to thank *Collier's Weekly* in behalf of the society for its vigorous campaign against injurious nostrums.

Anniversary Meeting.—The Milwaukee Medical Society celebrated its twentieth anniversary by a banquet at the University Club, January 12. The toastmaster was Dr. Horace Manchester Brown. The regular toasts were responded to by Drs. Samuel W. French, W. H. Washburn, G. J. Kaunheimer, A. T. Holbrook and T. L. Harrington. The society has increased from eight to 150 members in twenty years; has a library, reading-room, pathological museum and assembly-room on the third floor of the Goldsmith building; owns a library of 5,000 volumes, and subscribes to 100 periodicals annually. Meetings are held bi-monthly and are well attended.

GENERAL.

Warren Essay Prize.—The Warren triennial prize was founded by the late Dr. J. Mason Warren in memory of his father, and his will provides that the accumulated interest of the fund shall be awarded every three years to the best dissertation (if any is considered worthy), on some subject in physiology, surgery or pathology; the arbitrators being the physicians and surgeons of the Massachusetts General Hospital. The prize for 1907 will be \$560. Essays will be received until April 14, 1907. A high value will be placed on original work. Dr. Herbert B. Howard, resident physician, may be addressed for further particulars.

Army Medical Corps Examinations.—Preliminary examinations for appointment of assistant surgeons in the Army will be held on May 1 and July 31, 1906, at points to be hereafter designated. Full information concerning the examination can be procured on application to the Surgeon General, U. S. Army, Washington, D. C. The applicant must be a citizen of the United States, between 22 and 30 years of age, a graduate of a legally authorized medical school, of good moral character and habits, and with at least one year's hospital training or its equivalent in practice. Applications must be in possession of the surgeon general on or before April 1. There are at present twenty-five vacancies in the medical corps of the Army.

CANADA.

Tuberculosis in Toronto.—There were 271 deaths in Toronto from tuberculosis in 1905, a rate of 1.03 per thousand. During the year 39 patients were sent to the Gravenhurst sanitarium and 75 to the Toronto institution.

Fee Schedule for Life Insurance Examinations.—At the regular monthly session of the Medical Society of the County of Colchester, Nova Scotia, January 30, a resolution was carried unanimously, and signed and agreed to by all the medical practitioners in the county, making the minimum charge for medical examination for life insurance, including all fraternal societies, \$5.

Toronto Will Disinfect All Houses After Consumption.—The local board of health of Toronto, at its meeting February 7, decided to instruct its medical health officer, that hereafter all houses and apartments which have been occupied by patients suffering from tuberculosis must be disinfected. As all death certificates go through the hands of the medical health officer, his inspectors will be instructed to perform this duty the same as in cases of diphtheria.

Ask Aid of Government to Entertain the British Medical Association.—Physicians of Toronto, representing the local branch of the British Medical Association, appeared February 7 before the premier and the provincial cabinet to ask for assistance in entertaining the association next August, \$7,500 being the amount requested. The dominion government has partially promised \$10,000, and the city of Toronto is expected to contribute \$5,000, according to the newspapers.

Toronto Branch Victorian Order of Nurses.—The seventh annual meeting of the Toronto branch of the Victorian Order of Nurses was held February 14. The official report showed that during 1905 the nurses in connection with the institution cared for 522 patients, necessitating 6,842 visits, 500 being night visits. Two hundred and seventy-four physicians now employ nurses of the Victorian order. Of the 522 patients, 419 fully recovered, 45 improved, 15 sent to various hospitals and 14 died.

Ontario to Have Better Health Laws.—The Ontario medical health act is to be amended and consolidated at the present session of the Ontario legislature. The board of health has recommended the better enforcement of enactments regarding vaccination, the disinfection of railway cars, street cars and other vehicles, and that no municipality shall have power to adopt a water system unless sanctioned by the board of health of the province. More stringent legislation will also be sought relative to sewage disposal methods.

The Marriageable Age in Manitoba.—The Medical Society of Winnipeg, Man., at the regular meeting February 3, passed the following resolution unanimously with regard to child marriage: "The members of the Winnipeg Medico-Chirurgical Association are of the opinion that the marriageable age for females should not be less than 16 years, owing to physical immaturity before that age, and the almost certain procreation of weaklings in a large number of cases; and we believe child marriage from a scientific and humane standpoint to be a great evil to the individual and to the state."

Hospital News.—By the will of the late Mrs. Agnes Elizabeth King of Montreal the Montreal General Hospital receives a bequest of \$100,000.—The trustees of the estate of the late Mr. George Gooderham of Toronto, who was for many years chairman of the board of trustees of the Toronto General Hospital, have contributed \$25,000 to that institution.—Mr. D. D. Mann of Toronto and Winnipeg has donated \$10,000 to the Toronto General Hospital.—There were 51 patients in residence in January at the Toronto Free Hospital for Consumptives, 38 of these being inmates on city orders from Toronto.—The old Vancouver (B. C.) General Hospital is likely to be used for housing the wards of the Children's Aid Society of that city.—The Vancouver (B. C.) hospital board is considering a memorial signed by 35 practitioners of that city, asking that staff appointments be made for five years. At present the staff consists of 12 physicians in ordinary attendance, 11 consultants and 2 ophthalmologists.—During the week ending February 10 the total number of patients treated in the Winnipeg General Hospital was 361, of whom 200 were men, 107 women and 54 children.—Fire caused \$10,000 damage to the Rockwood Provincial Hospital at Kingston, Ont., on the night of February 9.—One hundred and ninety patients were received during 1905 into the Protestant Hospital for the Insane at Verdun, P. Q., 49 per cent. of whom were persons born outside of Canada. The total number in the institution at the end of 1905 was 654—343 men and 311 women.

FOREIGN.

Plague in Japan.—Dr. Moore, of the Public Health and Marine-Hospital Service, reports that the plague situation in Japan seems to be ameliorating, though the disease has not yet been entirely suppressed.

Orthopedic Congress in Germany.—The German Society for Orthopedic Surgery holds its fifth annual congress April 3, 1906, at Berlin. Adolf Lorenz of Vienna will preside. Dr. Joachimsthal, Berlin W. Magdeburgstrasse 36, is the secretary.

Roentgen Congress in Germany.—The German Roentgen Society announces its second annual congress April 1-2, 1906, at Berlin, preceding the German Surgical Congress. The general secretary is Dr. M. Immelmann, Berlin W. 35, Lutzowstrasse 72.

British Medical Association and Proprietary Preparations.—The *British Medical Journal* states that an advisory committee has been formed to assist the editor in deciding what proprietaries shall be noticed in the columns of the journal. The members of this committee are Drs. Cushty, Dunstan and Dawson Williams, and Mr. R. H. Kinsey. Dr. Dawson Williams is editor.

Plague in Persia.—It is reported that plague appeared in January in Seistan, on the border of Lake Naryzan, Persia. All precautions were immediately taken by the Persian authorities, acting in conjunction with the Russian and British consuls. A sanitary cordon was established, with a period of observation of five days, isolation of the sick, and preventive vaccination. There are European physicians in the epidemic area. At the time of the report, January 18, the disease had caused about 200 deaths.

Other Congresses in Germany in April.—The German Congress for Internal Medicine will be held at Munich, April 24-27, and the Congress for Experimental Psychology at Würzburg, April 18-21. Külpe of Würzburg is in charge of the arrangements for this latter congress, and will open the proceedings with an address on the "Present Status of Experimental Esthetics." Krüger will follow with an address on the "Relations Between Experimental Phonetics and Psychology"; Schumann on the "Psychology of Reading"; Sommer on "Psychiatry and Individual Psychology," and Weygandt on "Psychologic Examination of the Congenitally Mentally Defective."

Sanitation in City of Mexico.—The board of health of the City of Mexico has entered on its campaign against insanitary conditions. It will require householders to keep their premises clean and landlords to increase the supply of water in tenement houses. Bath houses will be built at all police stations and dirty members of the lower classes will be arrested on the streets and compelled to bathe. Persistent beggars will be banished from the city. The dirty clothing of the very poor will be burned and they will be provided with new raiment. The congested population in the tenements will be dispersed and inspectors of health boards will be invested with extraordinary powers. This sounds energetic.

The Anglo-American Medical Association.—The English-speaking physicians residing in Mexico have organized an asso-

ciation for scientific annual reunions. The first was held at Torreon, January 24-26, with Dr. D. Robinson in the chair. Dr. W. W. Ashurst of Chihuahua is chairman of the section for general medicine. Among the subjects discussed were tropical fevers, neuroses, practice of obstetrics in Mexico, mercury cyanid in treatment of syphilis, etc. The *Escuela de Medicina* for January 31 gives the program in full of each of the four sections. Scientific communications were presented by twenty-three different physicians. Our exchange deplores the avowed determination of the founders to restrict the addresses and discussions to English.

Yellow Fever in Bocas del Toro.—It is reported that Bocas del Toro, off the coast of Colombia, is a yellow fever center and that the Public Health and Marine-Hospital Service has been requested to take charge of the island and clean it out. The party of southern health officers who are making a tour of inspection of Central American fruit ports, state that the conditions at Bocas were so deplorable that every member of the party realized that unless something was done immediately Bocas would not be given the least consideration by the health authorities of the southern ports, and would prove such a menace to the other Central American ports that it would interfere with the desire to preserve comparatively open communication with them. It is stated that there is no pretense of enforcing health regulations. A pernicious form of malaria is also prevalent. An examination of water tanks and barrels showed them to be swarming with the *gambia*.

Ramon y Cajal.—The Madrid Faculty of Medicine has recently published a list of the scientific works of Ramon y Cajal, its great histologist. Although only 54 years old, he has published 162 works, and has received the Fauvel prize, the Helmholtz medal and the prize given by the International Medical Congress at Moscow, and has been invited to deliver the Croonian and other important lectures in foreign lands. He is also honorary member of two dozen scientific societies outside of Spain. The *Siglo Medico* of Madrid comments with amazement on what this great scientist has accomplished alone, without means and without aid, almost forgotten by the immediate circle around him until reminded of his existence by the honors heaped on him from foreign countries. His father was professor of anatomy at Saragossa, and his own first official position was the chair of anatomy at Valencia. His works have mostly been published in book form, or in the *Revista Trimestral Micrografica*. He visited this country in 1899 to lecture on invitation at Clark University.

Plague and Smallpox in India.—It is reported that the plague mortality in India is gradually rising. During the first week in January the United Provinces reported the greatest number of deaths, about 1,100; Bengal followed with 1,000. In Bombay presidency there were only 800 deaths; in the Punjab, 500; in the Central provinces, 200, and in Burmah about 100. Sixty-one deaths from smallpox were reported in Calcutta during the first week in January, and it is probable that many more cases existed, not including concealed cases. The epidemic began in Wategunge, Kilderpore, but probably on account of the work of the vaccination department, which made over 3,000 vaccinations in that district during December. The disease has been practically mastered, and the returns there are about normal. Other districts and wards have been attacked, and the present outlook is certainly grave. All the vaccine stations, fifteen in number, are doing their utmost to vaccinate and to induce guardians and parents to permit their children to be vaccinated.

International Medical Congress.—This congress at Lisbon bids fair to be one of unusual importance, although the number in attendance probably will be smaller than when it has been held in some of the larger capitals. Papers will be presented by some of the leading lights of the profession in Europe. The meetings will be held at the Medical School of Lisbon, which is a large building. Everything will be under one roof, and everyone will know where to find everything connected with the congress, as well as everything that is needed in a general way. There will be the office of the president, secretary and treasurer of the congress, telephone room, typewriting room, press room, information room, where one can find out all particulars regarding the various routes of travel; halls for showing different apparatus; amphitheaters for giving lantern exhibitions; a postoffice and telegraph office, registration room, money exchange, and a room where papers, cigars, cigarettes, etc., will be on sale. The opening exercises will be in the Geographical Society building, where a colonial exposition will take place during the meeting, under the auspices of the sections on colonial and naval medicine. Addresses will be delivered each afternoon at the general

meeting by distinguished representatives of different countries. Sir Patrick Manson will represent England; Prof. E. von Bergmann, Germany; Professor Reclus, Paris; Professor Neumann, Austria; Prof. Prince Jean Tarschanoff, Russia; Prof. Azevedo Sodré, Brazil; Dr. José Maria Esquerdo, Spain; Dr. P. Aaser, Norway. The names of those from other countries are not yet announced. Dr. Nicholas Senn of Chicago has been invited to deliver the oration for the United States. The amusements will include three large general fêtes, besides receptions and dinners. A large steamer will go from London and one from Hamburg, and these will serve as hotels during the stay there. One of the steamers can accommodate 300 passengers. The hotel and other accommodations are in the hands of Mr. Manuel José da Silva. Rédaction du *Annuaire Commercial de Portugal*, Praça dos Restauradores, Palacio Foz, Lisbon, to whom all communications concerning board and lodging in Lisbon should be addressed. All communications regarding the scientific part of the congress should be addressed to Dr. Ramon Gutierrez, secretary American National Committee, 75 West Fifty-fifth Street, New York. All questions regarding transportation to Lisbon and return should be addressed to Dr. Charles Wood Fassett, St. Joseph, Mo. Arrangements are to be made by him in a few days for hotel accommodations in Lisbon for his party.

Pharmacology

THE GREAT AMERICAN FRAUD.

The Fundamental Fakes.

The sixth of Mr. Adams' contributions in *Collier's Weekly*, February 17, contains little that is new, but it emphasizes several important facts which have contributed to the financial success of a number of well-known patent medicines. Foremost among these stands advertising, both in the lay newspapers and in medical journals. Mr. Adams says that advertising and testimonials are respectively the aggressive and defensive forces of the Great American Fraud. Without the columns of the newspapers and magazines, wherein to exploit themselves, a great majority of the patent medicines would peacefully and blessedly fade out of existence. He has found that the strongholds of the fraud are the dailies, great and small, the cheap weeklies, and the religious press. Mr. Adams says that in one respect some of the medical journals are far below the average of the newspapers, and on a par with the worst of the religious journals. They offer their reading space for sale, and he reproduces a letter from a well known medical monthly making such an offer.

Mr. Adams is convinced of the gullibility of the American public as regards patent medicines. He speaks at length of the manner in which testimonials are obtained, often at great expense, from totally irresponsible persons. The geographical distribution of these indorsements is, he thinks, suggestive. Out of 100 specimens selected at random from the Pierce testimonial book, 87 are from small remote hamlets, whose very names are unfamiliar to the average man of intelligence. Only five are from cities of more than 50,000 inhabitants.

Mr. Adams' closing paragraph is significant, and portrays things as they are. He says: "Our national quality of commercial shrewdness fails us when we go into the open market to purchase relief from suffering. The average American, when he sets out to buy a horse or a box of cigars, is a model of caution. Show him testimonials from any number of prominent citizens, and he would simply scoff. He will, perhaps, take the word of his life-long friend, or of the pastor of his church, but only after mature thought fortified by personal investigation. Now observe the same citizen, seeking to buy the most precious of all possessions, sound health. Anybody's word is good enough for him here. An admiral whose perile vanity has betrayed him into a testimonial, an obliging and conscienceless senator; a grateful idiot from some remote hamlet; a renegade doctor, or a silly woman who gets a bonus of a dozen photographs for her letter—any of these are sufficient to lure the hopeful patient to the purchase. He wouldn't buy a second-hand bicycle on the affidavit of any of them; but he will give up his dollar and take his chances of poison on a mere newspaper statement which he doesn't even investigate. Every intelligent newspaper publisher knows that the testimonials which he publishes are as deceptive as the advertising claims are false. Yet he saves his conscience with the fallacy that the moral responsibility is on the advertiser and the testimonial giver. So it is; but the newspaper shares it.

When an aroused public sentiment shall make out public men ashamed to lend themselves to this charlatanism, and shall enforce on the profession of journalism those standards of decency in the field of medical advertising which apply to other advertisers, the Proprietary Association of America will face a crisis more perilous than any threatened legislation. For printer's ink is the very life blood of the noxious trade. Take from the nostrum venders the means by which they influence the millions, and there will pass to the limbo of pricked bubbles a fraud whose flagrancy and impudence are of minor import compared to the cold-hearted greed with which it grinds out its profits from the sufferings of duped and eternally hopeful ignorance."

Mr. Adams also points out that as a convincing argument many nostrums guarantee, not a cure, as they would have the public believe, but a reimbursement if the medicine is unsatisfactory. Other concerns send their remedies free, on trial, and still others go so far as to offer a reward for proof that the stuff will not perform the wonders advertised. Mr. Adams says that if every subscriber to a newspaper who is interested in keeping his home free from contamination would protest and keep on protesting against advertising foulness of this nature, the medical advertisers would soon be restricted to the same limits of decency which other classes of merchandise accept as a matter of course, for the average newspaper publisher is sensitive to criticism from his readers. Furthermore, no perpetrator of unclean advertising can afford to go to court on the ground of breach of contract by the newspaper publisher, because his case is indefensible.

No Longer Members of the Proprietary Association.

The Horlick's Malted Milk Company, Racine, Wis., asks us to announce that the firm is no longer a member of the Proprietary Association of America.

Price of Phenacetin (Acetphenetidinum) to Be Reduced.

The patent on phenacetin expires on March 27, and after that date it will be sold at 33 cents in ounce lots. If bought or purchased under the pharmacopeic name—acetphenetidinum—the price will be \$1.15 a pound or 7 cents an ounce.

Ayer's Cherry Pectoral.

BOSTON, MASS., Feb. 12, 1906.

To the Editor:—I have been interested in the formulae of "Ayer's Cherry Pectoral" thus far submitted. Here is another from the note book of my father, Dr. J. L. Stevens, who many years ago practiced in Eastern Maine, and copied by him from Braithwaite's Retrospect in 1848:

| | |
|------------------------|--------|
| R. Morph. acet. | gr. iv |
| Tt. sanguinaria | 3ij |
| Vin. tart. antim. | |
| Vin. ipecac. 3ij | 3iij |
| Syr. pruni virg. | 3iij |

G. B. STEVENS, M.D.

DULUTH, MINN., Feb. 15, 1906.

To the Editor:—In Olcott's "Secret Nostrums and Lists of Medicines," published in 1891 in Chicago, is given the same formula of Ayer's Cherry Pectoral as given in THE JOURNAL February 10, except that the earlier formula, taken from the *Pacific Medical and Surg. Journal*, contains gr. iij (instead of gr. iss) of morphin acetate in the three ounce mixture—double the amount of acetate morphin given out by the Ayer people.

HOMER COLLINS, M.D.

Leucoplasmia.—Lacapere (*Archives Gén. de Méd.*, 1905), does not believe that a non-syphilitic leucoplasmia exists. He thinks that two conditions are usually requisite for its appearance, first, the existence of persistent or recurring mucous patches; this is the primary cause; second, chronic inflammation at the locations of the ulcerations, due chiefly to irritation by the use of tobacco, alcohol, etc., and, secondarily to this, of the constant muscular movements of the parts. He does not say that this absolutely explains all cases. There may be possibly a leucoplasmia occurring without preceding mucous patches, but if such a condition exists it must account for only a small proportion of cases.

Medical Legislation

The Postoffice Attitude Toward Nostrums.

The chairman of the National Legislative Committee addressed the heads of the various departments of the national government requesting information relative to proposed medical legislation. These communications were sent in November under the impression that the meeting of the National Legislative Council would be held in December. Events, however, showed that it would be better to defer that conference until Jan. 9, 10 and 11, 1906, at which date it was held. All of the departments manifested their appreciation of the interest thus shown by the American Medical Association. One of the most appreciative letters and one dealing with exceedingly important subjects was from the postmaster-general, as follows:

OFFICE OF THE POSTMASTER-GENERAL.

WASHINGTON, D. C., Jan. 12, 1906.

Dr. Charles A. L. Reed, Chairman, Cincinnati:

My Dear Sir:—Apologies are due you for the delay in answering your communication of November 4, stating that a meeting of the Legislative Committee of the American Medical Association is to be held at Washington in December, and expressing the wish that you be advised of any legislation on medical subjects which may be desired by the Postoffice Department. This delay has been due to the desire to give full consideration to the question of the department's attitude regarding proposed legislation.

The Postoffice Department will recommend to Congress legislation authorizing the exclusion from the mails of all publications and circular matter promiscuously advertising or promoting the sale to the general public of remedies or appliances for the treatment of private or sexual diseases, or proffering to the public personal services in the treatment of such diseases, and making it an offense to deposit such matter in the mails; expressly providing, however, that circular matter advertising such remedies or appliances may be mailed to physicians and legitimate dealers, under cover of envelopes. This department has suppressed many concerns advertising and selling through the mails such remedies or appliances, on evidence that purchases of them were being induced by means of fraudulent representations. In other cases in which conclusive evidence of fraud could not be obtained, the advertising matter has been held to be indecent and its revision required. Other concerns carrying on similar enterprises, however, have so far succeeded in evading the law, and it seems impossible to reach and to suppress them without additional authority from Congress. It is believed that a statute making it an offense to deposit in the mails matter advertising any such remedy, appliance, or treatment, and authorizing its confiscation when found therein, would have a most wholesome moral effect, as well as afford needed protection to credulous and unfortunate persons.

Section 3893 of the Revised Statutes, as amended by the act of Sept. 26, 1888 (1 Supp. R. S. 621), provides for the punishment by fine and imprisonment of any person depositing or causing to be deposited in the mails any "article or thing designed or intended for the prevention of conception or procuring of abortion," or any "article or thing intended or adapted for any indecent or immoral use," or any "written or printed card, letter, circular, book, pamphlet, advertisement or notice of any kind giving information, directly or indirectly, where or how, or of whom or by what means" any of the articles or things enumerated may be obtained or made. The opinion has been expressed by the United States district attorneys that the sending through the mails of information indicating where abortions will be performed or can be obtained, whether in the form of a circular or newspaper advertisement, is not forbidden by this statute; and they have accordingly declined to institute criminal proceedings in such cases. These are frequently arising, and it is desirable that this defect in the statute be remedied by amendment.

It is believed that with these exceptions the existing laws afford as complete authority as the Post Office

Department can effectively exercise in the direction of purifying the mails and safeguarding the public from fraud and other imposition practiced in connection with the sale of medicines, appliances, etc.

This department will be pleased to receive and consider any suggestions offered by the American Medical Association in the matter of legislation along these general lines. Very truly, yours,

GEORGE B. CORTELYOU.

All of the foregoing letter following the first and preceding the last paragraph has been reduced to the form of a memorandum to which the Committee on Legislation has appended the following:

Resolved, By the American Medical Association that the recommendations of the Postmaster-General, contained in the foregoing memorandum be, and are hereby, approved, and that their enactment into a law is hereby respectfully urged on the Congress.

Physicians and Legislation.

In several states bills are now before the legislatures relating to the control of the "patent-medicine" and food-adulteration evils. The relation of physicians to the health problems of the community gives them vital interest in these bills, and, instead of contenting themselves with talking about the bills at medical societies and passing resolutions which are never heard of outside the medical profession, physicians should appear before the committees to which the bills are referred. More than any other persons, physicians have positive evidence to prove the fraudulent or dangerous character of most patent medicines. In commenting on this subject the *Maryland Medical Journal* says:

"Last winter a bill to regulate the 'patent-medicine' business was introduced in the legislature of Massachusetts. The advocates of the measure argued that its provisions were approved by a great weight of medical opinion, but this argument was disposed of easily and completely. The opposition said: 'There is no evidence whatever that this bill is supported by the medical profession. If physicians really favored the measure, they would do as other citizens do—appear before the committee and urge its passage. No physicians have appeared before the committee, and for us the proof is conclusive that the few lay people, who have appeared, represent the full strength of the proposition, and that the people of Massachusetts, including the physicians, do not want any such legislation.'"

Correspondence

Interstate Reciprocity.

DETROIT, Feb. 15, 1906.

To the Editor:—I have read with more than ordinary interest the article entitled "Interstate Reciprocity," by Dr. George W. Webster, president of the Illinois State Board of Health and secretary of the Council on Medical Education of the American Medical Association, published in THE JOURNAL of February 10. Dr. Webster enumerates several of the fundamental facts entering into the question of interstate reciprocity. To nearly all of such facts quoted I can very heartily subscribe, namely:

First.—Medical education and the license and control of the practice of medicine is purely a state function.

Second.—The state medical board is the only body authorized by the state to determine the conditions and qualifications under which a medical license is granted.

Third.—Medical laws are enacted for the benefit of the people, rather than for the benefit or profit of the medical profession.

Fourth.—Each state has constitutionally established standards of its own, and such standards in consequence lack uniformity.

Fifth.—Each of the 157 medical colleges practically sets its own standard. (This is only true in a degree.)

Sixth.—Various associations of medical colleges and medical societies have established standards, but such standards are ineffective in law from want of authority of both associations and societies.

I have substituted medical societies for "medical boards" in Dr. Webster's text, as the latter could not have been meant and, therefore, is clearly an error, but Dr. Webster, in his enumeration of facts, has omitted at least two sets of facts which are not only fundamental ones, but which are most important from the standpoint of a practical solution of the difficulties met with in the administration of the several state reciprocity clauses, namely:

Seventh.—The great majority of states recognize, and, therefore, have legalized, three or more distinct schools of practice, no one school of which in law is less or greater than the other, and that in all questions involving standards, reciprocity and administration no one school, however prepondering its membership, has the authority to settle such a vital question as reciprocity without the co-operation and support of all the schools of practice recognized in the several states.

Eighth.—No proper or effective medical law has been enacted in any state except by and with the co-operation of the several schools of practice legalized in such states.

Dr. Webster, having omitted in his statement of facts a large percentage of the most material facts connected with and necessary to the success of interstate reciprocity, it naturally follows that his suggestions for a solution of the difficulties met with in the question of interstate indorsement of licenses, based entirely on his defective presentation of facts, must, therefore, be impractical and subject to criticism and deserved opposition, and can not possibly result in any good to the cause which he seemingly advocates.

His statement of facts under "Second," viz., that the state medical board is the only body authorized by the state to determine the condition and qualifications under which a medical license is granted, and his proposed remedy, namely, "Equal requirements, uniformity in entrance requirements, uniformity in length and character of the medical course, uniformity in the scope and character of the examinations, should be done through the organized profession, as embodied in the American Medical Association and by its Council on Medical Education," has only to be quoted to show absolutely the impracticability of his proposition. His proposed remedy is not only in direct conflict with his statement of facts under "Second," but also in direct conflict with the remaining divisions of facts, including "First" to "Eighth," inclusive. It is possible for Dr. Webster, or, for that matter, any one else, or any association of persons, except a state legislature, to confer on the Council of Medical Education of the American Medical Association, of which he is secretary, the authority which he truly states is solely vested in state medical boards?

The proper and equitable administration of the reciprocity clauses of the several states is a matter solely within the authority of the state medical boards interested. These medical boards are capable of fulfilling the duties and responsibilities with which they are charged by the state, and do not require unauthorized persons or associations to measure their authority or to perform their legal duties. The boards, however, are appreciative of intelligent assistance from associations in carrying out their difficult duties, provided there is no usurpation of the authority of the state responsible for their status.

I would very diffidently inform Dr. Webster, as he seemingly has forgotten the matter, that some four years ago a confederation of state medical boards was founded on the basis of the fundamental facts as subscribed by himself. This confederation, with a membership at present of nearly 50 per cent. of all the states, has succeeded in establishing practical medical reciprocity in some twenty-one of the better states, including Dr. Webster's own state, Illinois. It has also adopted an itemized standard of preliminary and medical education, which standard has also been adopted and is being enforced by the Association of American Medical Colleges. It has also, at the solicitation of Dr. Webster, adopted a "scope and character of examination." In the brief period of four years it has already more than fulfilled all the several divisions of basis for reciprocity advocated by Dr. Webster. No confederation or association ever founded in this or any other country has accomplished such a quality and quantity of practical work in so short a period, and while Dr. Webster seemingly

has overlooked the existence and deeds of the American Confederation of Reciprocating, Examining and Licensing Medical Boards, a lesser authority, perhaps, the Association of American Medical Colleges, gives it due praise and credit.

It may be of interest to the profession to know that this Association of American Medical Colleges and the American Confederation are working together harmoniously and practically along similar lines, having in view the unification of the standards of preliminary and medical education. I will prophesy that at the next meeting of the Association of American Medical Colleges, to be held at Pittsburg, March 19, 1906, its membership will be astounded at the amount of practical work accomplished since its last meeting, and also at the quality of such work.

I would suggest to Dr. Webster and to his committee the virtue of co-operation with the above association, in which much practical good along the lines of the committee's legitimate objects could be accomplished, as opposed to his entering a field entirely without the range of the committee's power and status.

B. D. HARRISON.

Secretary Michigan State Board of Registration in Medicine.

Johns Hopkins Course Not to be Lengthened.

BALTIMORE, Feb. 13, 1906.

To the Editor:—In your last issue I find a statement that I should be glad to have you correct. The statement is this:

"The authorities of the Johns Hopkins University are considering the question of lengthening the course in the collegiate department from three to four years, and that in the medical school from four to five years."

A committee is working on the problem of the college course, but what that committee will report I do not know. There is absolutely no foundation for the statement that the authorities of this university are considering the question of lengthening the course in the medical school from four to five years.

IRA REMSEN, President.

Prophylaxis of Venereal Diseases.

SEATTLE, WASH., Feb. 14, 1906.

To the Editor:—As chairman of the committee of venereal prophylaxis of the Washington State Medical Association, I desire to appeal to your readers to aid this committee in securing the names and addresses of physicians who would forward notice of any legislative action, state or municipal, or action taken by any society, corporation, or individual that would bear on this subject.

The object sought is to classify and to redistribute such literature in a condensed form and thus lead to a more uniform and concentrated action.

At the same time, we wish to compile a list of the physicians who desire to receive and to exchange literature, abstracts, papers, or reprints bearing on this subject and later, if possible, to establish a bureau of inquiry to which references may be made by any of those desiring knowledge on this subject.

Therefore, we should be very pleased to receive the names and addresses of any physicians who would like to take part in the work of advancing this branch of preventive medicine. Such a list would not be given publicly.

G. S. PETERKIN, M. D.

Prostitution.

LOS ANGELES, CAL., Feb. 17, 1906.

To the Editor:—Articles on such subjects as that discussed by Dr. Howard A. Kelly in THE JOURNAL, February 10, usually provoke prolific discussion. Medical men are generally aware of the futility of regulation. Such movements are usually promoted for the graft, for which they afford an unequal opportunity.

Dr. Kelly's suggested remedy is very discouraging, in view of the fact that this evil has attained its present magnitude in a nation of Puritan origin, in which human belief in divine intervention is widely prevalent. Dr. Kelly's deserved reputa-

tion as a surgeon is dependent on his knowledge of pure surgical science, divested of all dogmatic tradition. Religion is a large factor in the prevention of evil; publicity and public opprobrium is a still greater deterrent, but the Moses who will lead us out of the sexual wilderness must take his cue from Nature. Nature's method (and she will ultimately triumph) is to subdue sexual sins against society by causing sterility and death of the sinner. This is a slow process, but might be materially hastened by our co-operation.

When will mankind cease to overvalue the life of criminals; and to extend to them the privilege of reproducing their kind? The greatest obstacle to the accomplishment of these ends is dogma.

FRANK GORDON.

Psychopathic Manifestations of Non-Insane Psychoneuroses.

NEW YORK, Feb. 16, 1906.

To the Editor:—In a letter published in THE JOURNAL, Dec. 16, 1895, I said that the term "psychosomatosthenia," coined and introduced by Dr. John Panton, belonged to what I am in the habit of calling "Lexicon-Greek." I also said that phrenosomatitis might express the same meaning, but that I would not dare to offer it for adoption before consulting Greek friends regarding its acceptability. I wrote to my esteemed friend Dr. B. Leonardos, the director of the Museum of Inscriptions in Athens, who is a physician and a philologist, and received the following information: "The word phrenosomatitis does not seem to me appropriate. Psychosomatosthenia is to be rejected. I believe that the disease can not be named with one word, and that even two words which will correspond exactly with the meaning can not easily be found."

A. ROSE, M.D.

A. W. Orriss Is Wanted.

ORIOLE, MD., Feb. 12, 1906.

To the Editor:—Any one having any information which will lead to the location of a man calling himself A. W. Orriss, M.D., will confer a favor on the members of the profession in Somerset County, Maryland, by communicating with the undersigned. This man represents himself to be the proprietor of a medical book store and calls on physicians offering to exchange new editions of medical works for the old editions in the physician's library. He exacts a payment from the physician "to cover freight charges and as an evidence of good faith," so he says, and departs, and this is the last any one sees of him. He operated in Somerset county to a very profitable advantage to himself and any information which would lead to his arrest would be greatly appreciated.

RALPH L. HOYT,

Secretary Somerset County Medical Society.

Marriages

EUGENE A. STURM, M.D., to Miss Mae Salb, both of Jasper, Ind., February 12.

H. J. H. HOVEY, M.D., to Miss Pearl Brown, both of Des Moines, Iowa, February 2.

WILLIAM L. DUNN, M.D., to Mrs. Gussie Bergman, both of Oakland, Cal., February 8.

ROBERT C. CHAMBERLAIN, M.D., to Miss Aleta McCall, both of Tiffin, Ohio, February 15.

WILLIAM E. LUTER, M.D., to Miss Eleanor Maury, both of San Antonio, Texas, February 6.

HENRY LOUIS HAMMOND, M.D., Dayville, Conn., to Miss Cora Ward of Niles, Mich., February 6.

BENJAMIN VAN DORN HEDGES, M.D., Plainfield, N. J., to Miss Adele Cuts Williams of Chicago.

JOSEPH HAMILTON, M.D., Fruitvale, Cal., to Miss Jessie Aitken of Alameda, Cal., February 2.

BENJAMIN F. LEHMAN, M.D., Home City, Ohio, to Miss Edith Saylor of Cincinnati, February 20.

ALBERT W. SLAUGHTER, M.D., Paris, Ill., to Miss Mary Golden of Urbana, Ill., February 10.

STUART Z. PEOPLES, M.D., to Miss Helen Marie Anderson, both of Petaluma, Cal., February 4.

WILLIAM KEITH MITTENDORF, M.D., to Miss Marie Alvina Borchers, both of New York, February 15.

JOSEPH SPENCER DE JARNETTE, M.D., to Chestney Hopkins, M.D., both of Staunton, Va., February 14.

WLADISLAW A. KUCLEWSKI, M.D., Chicago, to Miss Angeline R. Cwiklinski of Buffalo, N. Y., February 21.

WILLIAM C. PETERS, M.D., to Miss Adah Bryant, both of Bangor, Maine, at Concord, Mass., February 1.

EBER D. MCKINLEY, M.D., Atlanta, Ind., to Miss Effie L. Howard of Athens, Ohio, at Indianapolis, February 7.

RAYMOND DEAN TOMPKINS, M.D., Jasper, Fla., to Miss Elizabeth Wisling Massey of Philadelphia, February 21.

MAJOR FREDERICK P. REYNOLDS, M.D., U. S. Army, to Miss Hortense Cecilia Child of Los Angeles, Cal., February 21.

JEHIEL WESTON CHAMBERLIN, M.D., St. Paul, Minn., to Mrs. Jane Huntington Yale of Minneapolis, Minn., February 15.

JOHN P. REDMOND, M.D., Dysart, Iowa, to Miss Freda C. Schley of Iowa City, Iowa, at Cedar Rapids, Iowa, February 7.

Deaths

Newell E. Landon, M.D. College of Physicians and Surgeons in the City of New York, 1876; a member of the American Medical Association, New York State Medical Association, Central New York Medical Association, Wayne County Medical Association, and New York & New England Railway Surgeons' Association; surgeon for the New York Central, West Shore and Pennsylvania Railways; consulting physician to the State Custodial Asylum for Feeble-minded Women; three times president of the village of Newark, N. Y., and one of the most prominent physicians of Wayne County, died at his home in Newark, February 7, from cerebral hemorrhage, after an illness of two months, aged 52.

John Slade Ely, M.D. College of Physicians and Surgeons in the City of New York, 1886; assistant in pathology in his alma mater; professor of pathology in the Women's Medical College and later pathologist at the Bellevue Hospital; professor of theory and practice of medicine, Yale University Medical Department, New Haven, and one of the most brilliant members of that faculty; in 1896 president of the New York Pathological Society, died at his home in New Haven, February 7, from concussion of the brain, the result of an accident two days before, when he was thrown from his horse, sustaining a fracture of the skull, aged 45.

Francis Noel Burke, M.D. Medical College of Ohio, Cincinnati, 1856; a surgeon in the Army during the Civil War and at its close chief surgeon of the Department of the Gulf; instrumental in the organization of the Phillips County (Ark.) Medical Association and also of the Arkansas Medical Society; for many years president of the local board of examiners of pensions, Helena, died at the residence of his brother in Jacksonville, Ala., January 27, from cerebral hemorrhage, after an illness of two years, aged 77.

John C. Spray, M.D. Chicago Medical College, 1873; of Chicago; from 1878 to 1889 medical superintendent of the Cook County Hospital for the Insane, Dunning; an alienist of national repute and one of the earliest advocates of the idea that amusement should not be overlooked in the treatment of the insane, died at the People's Hospital, Chicago, February 20, from pneumonia, after a short illness, aged 60.

Thomas G. Wright, M.D. Albany (N. Y.) Medical College, 1896; a surgeon in the New York National Guard assigned to the Second Regiment, Company D, died at his home in Troy, N. Y., from cerebral hemorrhage, after a long illness, aged 32. He was a member of the Rensselaer County Medical Society and of the Medical Society of Troy and Vicinity.

Harry M. Nickerson, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1889; a member of the American Medical Association; for two years city physician of Portland, and for two years surgeon of the Maine Naval Reserve, died in the Maine Insane Hospital, Augusta, February 2, aged 41.

Oscar Wiley Woods, M.D. University of Virginia Medical Department, Charlottesville, 1898, assistant surgeon U. S. Army,

who saw service in Cuba during the Spanish-American War and afterward served three years in the Philippine Islands, died at the home of his brother in Roanoke, Va., from tuberculosis, February 10, after a long illness, aged 35.

Robert S. Kennedy, M.D. Jefferson Medical College, Philadelphia, 1866, of New Sheffield, Pa., for nearly thirty years editor of the *Beaver County Star*, died at the home of his sister in Spring Garden, Pa., February 8, from cerebral hemorrhage, aged 64.

Thomas B. Hunt, M.D. University of Louisville Medical Department, 1864, assistant surgeon in the Fifty-fourth Kentucky Mounted Volunteer Infantry during the Civil War, died at his home in Warsaw, Ill., Nov. 16, 1905, from rheumatic endocarditis, after an illness of four days, aged 75.

James E. Miller, M.D. Missouri Medical College, St. Louis, 1881, died recently at his home in Louisiana, Mo., and was buried February 1. The physicians of Louisiana at a meeting February 2 unanimously adopted a resolution setting forth their respect and esteem for their deceased brother.

Francis Griffin, M.D. Rush Medical College, Chicago, 1869; a veteran of the Civil War; for many years treasurer for the local school district, died at his home in Mapleton, Iowa, February 6, from heart disease, after an illness of two years, aged 59.

George Janeway Howell, M.D. the University and Bellevue Hospital Medical College, New York City, 1901, a member of the Perth Amboy (N. J.) Board of Health, died at his home in that city, February 3, from pneumonia, aged 25.

Daniel M. MacMartin, M.D. College of Physicians and Surgeons in the City of New York, 1877, a specialist in diseases of the eye, ear, nose and throat, died at his home in Spokane, Wash., from valvular heart disease, aged 52.

Noble W. Mountain, M.D. State University of Iowa College of Medicine, Iowa City, 1873, a member of the Medical Society of the State of California, died recently at his home in Placerville, Cal., and was buried February 4.

Joseph Foulke, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1854, of Philadelphia, died at the home of his daughter in Milwaukee, February 10, after an illness of two weeks, aged 79.

Ogden Backus, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1883, of Rochester, N. Y., died at the City Hospital, Rochester, from postoperative pneumonia, February 10, aged about 50.

William M. Shoemaker, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, died at his home in Georgetown, Washington, D. C., February 8, after an illness of more than a year, aged 83.

Florence De Hart, M.D. Women's Medical College of the New York Infirmary, New York City, 1893, resident physician of the State Home for Girls, Trenton, N. J., died suddenly in that city, February 12, from intestinal disease.

E. F. Darby, M.D. Hospital College of Medicine, Louisville, Ky., 1884, formerly a practitioner of Columbia, S. C., died at his home in Lynchburg, S. C., February 9, after a short illness.

John Findlay Warren, M.D. McGill University Medical Department, Montreal, 1896, of Leeds, N. D., died at a hospital in Fargo, February 10, from hemorrhage of the lungs, aged 37.

Harry Y. Graham, M.D. Cincinnati College of Medicine and Surgery, died at his home in Winton Place, Cincinnati, February 10, from dropsy, after a prolonged illness.

Culvin Foree Violette, M.D. University of Louisville Medical Department, 1843, died at his home near Napoleon, Ky., January 10, from senile debility, aged 86.

Reuben B. Mayes, M.D. Memphis (Tenn.) Hospital Medical College, 1886, died at his home in Myrtle, Miss., February 4, from pneumonia, after a short illness.

Samuel C. Latham, M.D. College of Physicians and Surgeons of Keokuk, Iowa, 1870, died at his home in Enfield, Ill., after a long illness, January 28, aged 72.

James G. Conner, M.D. Rush Medical College, Chicago, 1867, health officer of Ionia, Mich., died suddenly at his office in that city, and was buried February 11.

J. E. Mann, M.D. Hahnemann Medical College and Hospital, Chicago, 1884, of Louisville, Ky., died in Liberal, Kan., February 5, after a long illness.

William A. Hahn, M.D. College of Physicians and Surgeons, Baltimore, 1882, died suddenly at his home in Baltimore, February 14, aged 49.

Robert C. Pearson, M.D. New York University, New York City, 1860, assistant surgeon of the Fifty-eighth North Carolina Infantry, C. S. A., died at his home in Morganton, N. C., January 28, aged 68.

William Wakefield, M.D. University of Louisville Medical Department, 1859, died at his home in Humboldt, Kan., January 30, aged 83.

F. M. Attlebury, M.D. Missouri Medical College, St. Louis, 1896, died at his home in Needmore, Mo., January 28, from pneumonia.

Deaths Abroad.

A. Filippi, M.D., professor of medical jurisprudence at Rome, and author of popular manuals on the subject, died at Rome, December 30, aged 69.

D. Chiara, M.D., professor of obstetrics and gynecology at Florence from 1883 to 1893, died at Turin, December 8, after ten years of illness, aged 68.

J. V. Wichmann, M.D., professor of pediatrics at Copenhagen, died recently. His name is familiar to readers of Scandinavian medical literature to which he was a frequent contributor.

E. Pasquali, M.D., president of the Italian Obstetrical Society and director of the gynecologic clinic at Rome, died at Rome, January 5, aged 81. He was professor of obstetrics for thirty-five years, and a pioneer in gynecology in Italy.

J. Cnopf, M.D., died at Nuremberg recently, aged 84. He was a leading spirit in professional matters, a popular pediatricist and a frequent contributor to periodical literature to the very last. His youthful vigor at his advanced age was frequently remarked.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Feb. 17, 1906:

Hoff, John Van H., asst.-surgeon-general, relieved from further duty at Fort Leavenworth, Kan., and, on expiration of leave of absence, to proceed to Omaha, and report to the commanding general, Department of the Missouri, for duty as chief surgeon of that department.

Bushnell, Geo. E., surgeon, Munson, E. L. and Hutton, Paul C., asst.-surgeons, appointed members of a board of officers to meet at the General Hospital, Fort Bayard, N. M., March 12, for the examination of such officers of the medical department as may be ordered before it to determine their fitness for advancement.

Barney, Chas. N., asst.-surgeon, ordered to report on March 12, 1906, to Major Bushnell, surgeon, president, examining board, General Hospital, Fort Bayard, N. M., for examination to determine his fitness for advancement.

Reynolds, Charles R., Hutton, Paul C., Dale, Frederick A., Roberts, William M., and Farr, Charles W., asst.-surgeons, are advanced from the grade of first lieutenant to that of captain, with rank from Feb. 11, 1906.

Hallock, H. M., surgeon, sick leave of absence extended 30 days. Woodson, R. S., surgeon, ordered to proceed from Fort McDevell, Cal., to Presidio of San Francisco, to accompany detachment of First Battalion, 4th Infantry, to Fort Slocum, N. Y. On completion of this duty Major Woodson will return to his proper station.

Stephenson, William, surgeon, granted 30 days' leave of absence. Millikin, John D., dental surgeon, arrived at Fort Leavenworth, Kans., for duty.

Werlebaeker, Clark L., contract surgeon, returned to Madison Barracks, N. Y., from leave of absence.

Peck, Luke B., contract surgeon, returned to Fort Andrews, Mass., from leave of absence.

Schellenberger, James E., contract surgeon, relieved from duty at Fort Sam Houston, Texas, and ordered to Fort Ringgold, Texas, for duty.

Macy, Fred S., contract surgeon, arrived at Fort Adams, R. I., for duty.

Eber, Albert H., and Dickenson, Clarence F., contract surgeons, left San Francisco on transport *Mcade* for Philippine service.

Davis, Oscar F., contract surgeon, relieved from duty at Jefferson Barracks, Mo., and ordered to duty at Fort Des Moines, Iowa.

Barnell, Julius M., contract surgeon, arrived at Fort McDevell, Cal., for duty.

Richardson, William H., contract surgeon, returned to Fort Sheridan, Ill., from leave of absence.

McCallum, Francis M., contract surgeon, granted leave of absence for one month.

Dougherty, James C., contract surgeon, relieved from duty at Fort Slocum, N. Y., and ordered to Fort Jay, N. Y., to accompany 8th Infantry thence to Philippine service.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Feb. 17, 1906:

Marsteller, E. H., surgeon, detached from the *Columbia* and ordered home to wait orders.

Paze, J. E., surgeon, detached from the *Franklin* and ordered to the *Columbia*.

Stone, E. P., surgeon, detached from the Naval Academy and ordered to the *Rhode Island*, February 19.

Cerr, D. B., surgeon, detached from the *Boston* and ordered home to wait orders.

Bell, W. H., surgeon, ordered to the *Nevada*, February 24.

Cook, F. C., surgeon, detached from the *Nevada* and ordered to the Naval Academy.

Richardson, R. K., P. A. surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the *Boston*.

Porter, F. E., asst.-surgeon, detached from the Naval Hospital, New York, N. Y., and ordered to the *Rhode Island*, February 19.

Bosman, F. M., P. A. surgeon, detached from the Naval Hospital, Yokohama, Japan, and ordered home to wait orders.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended February 14:

Irwin, Fairfax, surgeon, detailed as member of Revenue Cutter Service Refitting Board, to meet in Philadelphia, Pa., February 15.

Oakley, J. H., P. A. surgeon, granted leave of absence for one month from March 1.

Cumming, H. S., P. A. surgeon, relieved from duty at San Francisco Quarantine Station, and directed to proceed to Yokohama, Japan, for duty in office of American Consulate, relieving P. A. Surgeon Daniel Moore.

Robertson, H. McF., assistant surgeon, detailed as member of Revenue Cutter Service Refitting Board to meet in Philadelphia, Pa., February 15.

Bailey, C. A., acting asst.-surgeon, granted thirty days' leave of absence from February 13.

Ballard, J. T., acting asst.-surgeon, granted leave of absence for thirty days from February 13.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended February 10, 1906:

SMALLPOX—UNITED STATES.

California: San Francisco, Jan. 27-Feb. 3, 21 cases, 2 deaths; District of Columbia: Washington, Feb. 3-10, 1 death.
Florida: Jacksonville, Feb. 3-10, 2 cases, 1 death; Cynthiaua, 2 cases; Espanola, 3 cases.
Georgia: Augusta, Feb. 6-12, 5 cases.
Indiana: Allen County, Dec. 1-31, 1 death.
Kentucky: Covington, Feb. 3-10, 1 case.
Louisiana: New Orleans, Feb. 3-10, 4 cases.
Maryland: Baltimore, Feb. 3-10, 7 cases, 1 death.
Missouri: St. Louis, Feb. 3-10, 6 cases.
Ohio: Cincinnati, Feb. 2-9, 7 cases.
South Carolina: Georgetown, Feb. 15, 1 case (imported).
Tennessee: Memphis, Jan. 24-Feb. 7, 5 cases, 1 death.
Wisconsin: Appleton, Feb. 3-10, 1 case; La Crosse, 1 case.

SMALLPOX—FOREIGN.

Brazil: Pernambuco, Dec. 15-31, 39 deaths.
New Brunswick: Kings County, Feb. 4, present; Queen's County, present, Sunbury County, present, York County, present.
Canada: Toronto, Jan. 27-Feb. 3, 1 case.
China: Shanghai, Dec. 23-30, 1 death.
France: Paris, Jan. 27-Feb. 2, 13 cases, 2 deaths.
Gibraltar: Jan. 1-Feb. 4, 5 cases.
Greece: Athens, Jan. 8-15, 1 death.
India: Bombay, Jan. 9-16, 2 deaths; Calcutta, Dec. 30-Jan. 6, 61 deaths; Karachi, Jan. 7-14, 4 cases, 4 deaths; Madras, Jan. 6-12, 19 deaths; Rangoon, Dec. 30-Jan. 6, 10 deaths.
Italy: General, Jan. 18-25, 66 deaths.
Japan: Formosa, Dec. 1-31, 3 cases.
Russia: Moscow, Dec. 23-Jan. 13, 5 cases, 3 deaths; Odessa, Jan. 13-27, 38 cases, 4 deaths; St. Petersburg, Dec. 30-Jan. 20, 19 cases, 7 deaths.
Spain: Barcelona, Jan. 21-31, 7 deaths.

YELLOW FEVER—FOREIGN.

Cuba: Habana, Feb. 11, 1 case.
Honduras: El Paraiso, Jan. 19, 1 death.
Mexico: Merida, Jan. 28-Feb. 3, 2 cases, 2 deaths; Vera Cruz, Jan. 21-27, 2 cases, 2 deaths.
Nicaragua: Managua, Dec. 23-30, 1 death.

CHOLERA—FOREIGN.

India: Calcutta, Dec. 30-Jan. 6, 72 deaths; Madras, Jan. 6-12, 1 death; Rangoon, Dec. 30-Jan. 6, 3 deaths.
Russia: Government of Lomza, Jan. 4-14, 6 cases, 2 deaths; Government of Plock, Dec. 18-29, 21 cases, 13 deaths.

PLAQUE—INSULAR.

Hawaii: Kaula, Feb. 13, 2 deaths.

PLAQUE—FOREIGN.

Africa: Mozambique, Nov. 19-Dec. 6, 3 deaths. Total to Dec. 6, 78 cases, 28 deaths.
India: Bombay, Jan. 9-16, 24 deaths; Calcutta, Dec. 30-Jan. 6, 25 deaths; Karachi, Jan. 7-14, 9 cases, 8 deaths; Madras, Jan. 6-12, 1 death; Rangoon, Dec. 30-Jan. 6, 30 deaths.
Japan: Formosa, Dec. 1-31, 13 deaths; Kagawa, 1 Ken, to Jan. 10, 2 cases; Kobe, 34 cases, Nara Ken, 2 cases; Osaka, 140 cases; Yamaguchi (Shimonoseki) 8 cases, 1 death.
Mauritius: Dec. 14-28, 7 cases, 5 deaths.
Persia: Selistan, Jan. 18, 200 deaths.

Book Notices

INFANTILE MORTALITY AND INFANTS' MILK DEPOT. By G. F. McCleary, M.D., D.P.H., Medical Officer of Health of the Metropolitan Borough of Battersea. Cloth. Pp. 135. Price, 6 shillings net. London: P. S. King & Son, 1905.

This book deals with the problem of infant mortality and the measures taken to reduce it in various countries, in France, England and the United States. Attention is called at the outset to the declining birth rate, both in England itself and in one of the colonies, especially Australia. It is a declining fertility which has evidently stimulated McCleary to write the book. He points out the urgent necessity of reducing the high mortality among infants in order to offset the low birth rate, and in discussing the causes of this high mortality gives the chief place to improper feeding. To correct this he lays down two general principles: First, a more general encouragement of breast feeding, and, second, where this is impossible the provision of a pure, properly prepared cow's milk. The elaboration of these two principles constitutes the bulk of the book, and while throughout due emphasis is laid on the superiority of breast feeding, McCleary concerns himself mainly with a discussion of the methods in vogue to attain the second, i.e., the supply of a pure substitute food. This resolves itself into a detailed account of the now well-known "milk laboratories," "stations" or "depots" as they are conducted in different countries.

Two institutions in France are first described; the *Consultation de Nourrissous* and the *Goutte de Lait*. The former has for its chief object the encouragement of breast feeding, food and money prizes being awarded to nursing mothers whose infants make satisfactory progress, the mothers with their infants reporting at stated intervals to a dispensary or hospital. As a natural development from this institution arose the *Goutte de Lait*, the purpose of which is the provision of a pure milk, whole or modified, to such infants as have been deprived of their natural food supply. Rigid medical oversight of the infants is maintained in both of these organizations; if they do not report regularly the milk is stopped.

The American laboratories are next described, the Strauss stations in New York being taken as a type. Lastly, the English "depots" are described much in detail. McCleary considers these various institutions in the order in which he apparently thinks they have been established, but makes no mention of the first one of the kind ever started, that in Boston in the summer of 1890 under the direct supervision of Rotch. The first *Goutte de Lait* is reported as being established in Paris in 1892, the first "depot" in England in 1899. The wide distribution of these stations is evidenced from the list given, showing their establishment throughout England, in Europe, North and South America. Most of the English "depots" are under municipal control, all in America under private control except the one at Rochester, which is a municipal organization. This is mentioned in high terms by Dr. McCleary as being superior to any similar "depot" in England. One of the best features of this laboratory, by the way, is the modifying which is done at the farm in the country. The importance of the farm and dairy end of the milk problem is duly emphasized throughout the book.

The work as a whole is an extremely interesting account of the world-wide movement for a better and purer milk for infants, a movement arising in France and England from a contemplation of the declining birth rate and the consequently greater necessity of preserving the infants actually born, and arising in the United States from humanitarian motives, pure and simple. It is of interest mainly, however, to health officials and to those pediatricians actively engaged in obtaining for city infants a supply of pure milk. It is of no help to a physician in solving the problem of a given case of difficult feeding. No details are given. To those familiar with the methods in vogue in American cities there is nothing new in the book, and they will derive but little help in solving the problem of city milk. In this respect at least our confrères across the water have taken a leaf out of the Yankee book and adapted an American institution to their own municipal peculiarities.

A TEXT-BOOK OF THE DISEASES OF THE EAR, NOSE AND PHARYNX. By D. B. St. John Roosa, M.D., LL.D., and B. Douglass, M.D. Cloth. Pp. 621. Price, \$3.00 net. New York: The Macmillan Co., 1905.

This volume contains over eighty pages devoted to the anatomy and a brief review of the physiology of the ear. The subject of foreign bodies in the ear is set forth very fully and in a most interesting manner. Eighty-two pages are devoted to the diseases of the nose, throat and nasopharynx, to which so many aural affections owe their origin. This section is fairly complete, although the student might desire somewhat fuller directions. Thus, speaking of cauterization of the turbinates, "a flat nasal electrode attached to a proper electric apparatus" is recommended. And when enlarged tonsils are present with adenoids the authors advise the removal of the tonsils before attacking the adenoids, but do not express any preference as to the method. Their reasons for dividing chronic non-suppurative inflammation of the middle ear into catarrhal and proliferous inflammation, and the diagnosis between both and diseases of the labyrinth by means of the tuning-fork, are elaborated. They protest against the tendency of some neurologists to call all cases in which vertigo is a symptom Ménière's disease, and would limit the term to disease of the labyrinth. Various radical operations, including Roosa's, for mastoid disease are described in detail. A chapter on deaf-mutism, with suggestions for the mechanical relief of deafness, closes the volume. There are 108 cuts illustrating the text, but in a few cases the letters referred to in the legends are lacking. The text is generally clear and the diction good. We find a few long, involved sentences, such as the second paragraph on page 340. A few grammatical and rather numerous typographical errors will no doubt be corrected in subsequent editions. The book may be recommended as a safe guide.

THE PATHOLOGY OF THE EYE. By J. H. Parsons, B.Sc. Vol. II. Histology.—Part II. Cloth. Pp. 770. Price, \$3.50. New York: G. P. Putnam's Sons, 1905.

In the second volume of this elaborate work Mr. Parsons has placed the science of medicine in general and that of ophthalmology in particular under a deep obligation. He reviews and profusely illustrates the histology of the crystalline lens, the vitreous, choroid, retina, optic nerve, orbit and the lacrimal apparatus. It must be borne in mind that the histology spoken of refers not only to normal conditions but to pathologic ones, so that this work is practically a textbook dealing with abnormal conditions generally found in the structures mentioned. Probably the most valuable portion of the work is that touching the various tumors of the eye, and we know of no monograph on the subject that compares with it in a practical demonstration of the changes found in this class of tissue alteration. Although the micro-photographs and illustrations generally are no better in quality than those seen in other books of the kind, they serve their purpose very well, and even when only diagrammatic, are useful. We especially commend the index of illustrations and think that many other writers might well take a leaf from Mr. Parsons' monograph in this particular. Space does not permit a reference to the many important original observations of the author, but we can not refrain from drawing the reader's attention to the elaborate descriptions of choroidal changes, especially of the neoplasms, and to affect that membrane. We are certain that the work will long stand as an important contribution to the pathology as well as to the normal histology of the eye.

A SYSTEM OF MEDICINE. By Many Writers. Edited by T. C. Allbutt and H. D. Rolleston. New Edition. Revised Throughout with Additions. Vol. I. Cloth. Pp. 1269. Price, \$5.00. New York: The Macmillan Co., 1905.

This is the first volume of the second edition of this system. It is the intention of the authors to revise and bring out one volume a year, each new volume corresponding to one of the first edition, so that the original edition will gradually be superseded by the new. Besides the prolegomena, Volume I contains some of the acute affections, such as erysipelas, influenza, diphtheria, infective endocarditis, cerebrospinal fever and enteric fever. Cholera and plague have been transferred to the tropical medicine section. The first article, on the history of medicine, is a new contribution by Allbutt. The article on medical statistics has been rewritten entirely. The arrangement of the article on dietetics has been altered somewhat, and

this chapter also contains a section on the physiologic principles of dietetics. New articles on exercise in the treatment of disease and on x-rays are added. The chapter on the clinical examination of the blood and its significance is contained in this volume, while the article on atheroatherapies has been transferred to another volume. Among other things discussed in Volume I are climate in the treatment of disease, massage, hydrotherapy, the hygiene of youth, principles of drug therapeutics, old age, life insurance, inflammation, fever, the general pathology of nutrition and of new growths, and nursing.

BACTERIOLOGY OF PERITONITIS. By L. S. Dudgeon, M.R.C.P., and P. W. G. Sargent, M.A., M.B., B.C., F.R.C.S. Cloth. Pp. 243. Price, \$2.50 net. Chicago: W. T. Keener & Co. 1905.

The authors state that they have attempted to place the bacteriology of acute peritonitis on a sound basis, and to deduce from the knowledge thus gained some facts which may serve to guide the surgeon in the treatment of the various diseases which are grouped under the names of septic or suppurative peritonitis. The relationship of the various affections of the contents of the abdomen to peritonitis are discussed at great length, and the rôle of the phagocytes in peritonitis also receives considerable attention. Speaking of the treatment of this condition, the authors state that the question between local irrigation and dry sponging, carried out with gentleness, is better than irrigation. The question of drainage, drug and serum treatment are discussed briefly. The authors believe that in the large majority of cases of acute peritonitis it is the colon bacillus which kills the patient. The only serum, therefore, which would be of value in helping to diminish the mortality of peritonitis is a multivalent anti-coli serum. The indiscriminate use of antitoxic sera is condemned as being both useless and unscientific.

PATHOGENIC MICRO-ORGANISMS INCLUDING BACTERIA AND PROTOZOA. A Practical Manual for Students, Physicians and Health Officers. By W. H. Park, M.D., assisted by A. W. Williams, M.D. Second Edition, Enlarged and Revised. 165 Illustrations. Cloth. Pp. 556. Price, \$3.75. New York: Lea Brothers & Co., 1905.

The most notable feature of this edition is the part devoted to the protozoa. Hitherto textbooks on bacteriology have failed to recognize the importance of animal organisms in the causation of disease. Obviously it is advisable that these organisms should be discussed together with the vegetable organisms. Sixty pages are devoted to the discussion of the ameba, trypanosomes, the spirochetes of relapsing fever and syphilis, the malarial organisms and the protozoan-like bodies found in smallpox and allied diseases. In the appendix the author discusses the aggressins, the hemolysins, the diplococcus of Morax-Axenfeld and the relation of the stegomyia to yellow fever. The part on bacteria also has been revised carefully, thus making the work a valuable summary of the present-day knowledge in this field of medicine.

A TEXT-BOOK ON THE PRACTICE OF GYNECOLOGY. For Practitioners and Students. By W. Easterly Ashton, M.D., LL.D., Professor of Gynecology in the Medico-Chirurgical College of Philadelphia. Octavo. 1,079 pages, with 1,046 Original Line Drawings. Price, \$6.50 net. Philadelphia: W. B. Saunders & Company, 1905.

Ashton appreciates that the average young practitioner has received only most superficial information regarding the technic of gynecologic operating and the diagnosis of diseases of women. He therefore takes up clearly and succinctly each step of each procedure, so that it is impossible to misunderstand his meaning. In place of the routine practice of devoting a general chapter or chapters to physical examination the author details the method of examinations of each organ before considering its diseases. More than a thousand illustrations are shown, none of which is old or hackneyed; all are new line drawings made from apparatus, living models, the cadaver or the descriptions of operations by other operators. The book will be found decidedly practical.

THE SURGEON-GENERALS OF THE ARMY OF THE UNITED STATES OF AMERICA. A Series of Biographical Sketches of the Senior Officers of the Military Medical Service from the American Revolution to the Philippine Pacification. By James Evelyn Pilcher, M.D., Ph.D., LL.D., Major and Surg. U. S. V.; Cap. Ret. U. S. A.; Secretary of the Association of Military Surgeons, and Editor of the *Journal of the Association of Military Surgeons of the United States*, Svo. Cloth. Pp. 114. Carlisle, Pennsylvania, The Association of Military Surgeons, 1905.

In addition to well written and comprehensive articles on the surgeon-generals of the United States Army, Major Pilcher

has given us in this book biographic notices, with portraits, of Samuel Preston Moore, surgeon-general of the Confederate Army; of James McHenry and William Eustis, military surgeons who became secretaries of war, and of Benjamin Rush, the whole constituting a volume of interest not alone to the military medical officers but to the profession at large. All interested in the lives and achievements of medical men who have helped in the making of the history of this country will find recreative reading in this book.

DOSE-BOOK AND MANUAL OF PRESCRIPTION-WRITING, with a List of Official Drugs and Preparations and Many of the Newer Remedies with Their Doses. By E. Q. Thornton, M.D., Ph.G. Third Edition. Revised and enlarged, with 115 Illustrations. Cloth. Pp. 392. Price, \$2.00 net. Philadelphia: W. B. Saunders & Co., 1905.

This book is of value to the student as a guide to the proper construction of the prescription. It includes directions for converting the apothecary weights into the metric system, and vice versa. That part devoted to prescription writing and incompatibilities is of especial value. The appendix includes a list of the common poisons and methods of treatment of poisoning. This edition also contains a list of the drugs with their doses arranged in accordance with the recent changes established by the new Pharmacopeia.

MASSAGE AND THE ORIGINAL SWEDISH MOVEMENTS, their Application to Various Diseases of the Body. By K. W. Ostrom. Sixth edition, revised and enlarged, with 115 Illustrations. Cloth. Pp. 184. Price, \$1.00. Philadelphia: P. Blakiston's Son & Co., 1905.

The physician's knowledge of the general methods of massage, together with his familiarity with anatomy and physiology, enable him to work out the details of mechanical treatment, but he would far better have some such book as this by Ostrom as a guide. Details are given for massage of all portions of the body and the illustrations make it easy to understand the directions. This sixth edition has been thoroughly revised and a number of new portions added. The physician who is not using any of these methods in his treatment is omitting a valuable part of the therapy that is open to him.

A TEXT-BOOK OF LEGAL MEDICINE. By Frank Winthrop Draper, A.M., M.D., Professor of Legal Medicine in Harvard University. Fully Illustrated. Cloth. Pp. 573. Price, \$4.00 net. Philadelphia: W. B. Saunders & Co., 1905.

Draper writes with the inspiration of his own realization of the importance of the subject. He urges on the medical student careful study, because of the likelihood of medicolegal complications in the first case undertaken in his practice. Draper feels that not enough attention is paid to this subject in medical colleges. The reader finds in this book the sympathy of a man of wide experience and most practical ways of viewing things. The book has been carefully kept within reasonable limits, and except for the departments of toxicology and psychiatry will be found a full text-book on medicolegal affairs.

LEHMANN'S MEDIZINISCHE ATLANTEN. Band V. Atlas Typischer Röntgenbilder vom normalen Menschen. By Dr. med. Rudolf Grashey. Mit 97 tafelförmigen (Autotypen) in Originalgrösse und 42 Kontrollzeichnungen (davon 11 als Uebersichten), ferner 14 schematischen Figuren im Einleitungstext. Cloth. Pp. 92. Price, \$4.00. Munich: J. H. Lehmann's Verlag. New York: P. B. Hoeber.

This atlas consists of 97 reproductions of radiographs of the various parts of the body, particularly of joints, which are likely to be injured by a trauma and in which the diagnosis may be subject to doubt. Each illustration is accompanied by a suitable explanatory text. The book also contains 42 outline drawings and 14 diagrammatic sketches. The radiographs are excellent and the work can not fail to elicit the appreciation of those who are interested in roentgenology.

VITAL QUESTIONS. By H. D. Chapin, M.D. Cloth. Pp. 189. Price, by mail, \$1.10. New York: T. Y. Crowell & Co.

The title of this volume may be amplified by saying that the work discusses the fundamental problems of the physician's life and activity. Some of the "Vital Questions," as subdivided by chapters, are: "Unequality—the Question of Opportunity"; "The Unfit—the Question of Survival"; "Poverty—the Question of Subsistence"; "Success—the Question of Achievement"; "Death—the Final Question" etc. The entrance of the physician into politics, into work for social betterment, into medical society work, etc., is due to his thought on these same problems which Chapin discusses. This book will stimulate the endeavor to be of service to humanity.

SPERMANN'S HISTORISCHER MEDICINAL-KALENDAR, bearbeitet von Prof. Dr. J. Pügel und Prof. Dr. J. Schwabe in Berlin. Paper. Pp. 184. Price, 75c. Munich: J. F. Lehmann's Verlag. New York: P. B. Hoeber.

This calendar is in the form of a tablet, each leaf of which represents two days of the year. At the head of each page is a reproduction either of a famous painting dealing with some medical subject or of some well-known caricature drawing or the portrait of a medical celebrity. Besides this, under each date are noted one or more occurrences of importance in medicine, the announcement of the birth or death of a man prominent in research work and in practice, and pertinent aphorisms. Many astronomical data are also recorded.

SKIASCOPY AND ITS PRACTICAL APPLICATION TO THE STUDY OF REFRACTION. By E. Jackson, A.M., M.D. Fourth Edition. Revised and Enlarged, with 28 Illustrations. Cloth. Pp. 117. Denver: Herlek Book and Stationery Co., 1905.

With a view to making this little treatise more complete, Jackson has added two chapters, one on exact skiagraphy and the other on auto-skiagraphy. In the first chapter are discussed the procedures necessary to render skiagraphy valuable, such as the dark room, the source of light, mirror, etc. In the second chapter the reader is instructed how to measure his own refraction by the use of an ordinary looking-glass, in addition to the apparatus commonly employed for the test.

MATERIA MEDICA AND THERAPEUTICS. An Introduction to the Rational Treatment of Disease. By J. M. Bruce. New and Enlarged Edition. Cloth. Pp. 632. Price, \$1.75 net. Chicago: W. T. Koener, 1905.

A change, which the author believes will be regarded as an improvement, is the introduction of greater detail respecting the chemical and pharmaceutical relations of the individual drugs. An entirely new part has also been added, containing an account of the materia medica and therapeutics of the drugs mentioned in the Indian and Colonial Addendum to the British Pharmacopæia.

READY REFERENCE HANDBOOK OF DISEASES OF THE SKIN. G. T. Jackson, M.D. 91 Illustrations and 3 plates. Fifth edition. Cloth. Pp. 676. Price, \$2.75 net. Philadelphia: Lea Brothers & Co., 1905.

The present edition is considerably larger than the preceding one because of the addition of new sections on affections of the skin recently recognized. As heretofore, the symptoms, diagnosis and treatment are especially considered, and the alphabetical arrangement of the diseases, a feature which has made this work popular, is preserved. Many new prescriptions have been added to the appendix.

A MANUAL OF BACTERIOLOGY. By H. U. Williams, M.D. Revised by E. M. Bolton, M.D. 108 Illustrations. Fourth Edition. Revised and Enlarged. Cloth. Pp. 357. Paper, \$1.75. Philadelphia: P. Blakiston's Son & Co., 1905.

This edition maintains the characteristic features of previous editions, but contains many additions, especially in the chapters on bacterial poisons and on immunity. The appendix is devoted to a consideration of several pathogenic protozoa, the *Ameba dysentericæ*, the *Plasmodium malarie*, trypanosomes and organisms found in smallpox and vaccinia.

PHYSICAL DIAGNOSIS. Including Diseases of the Thoracic and Abdominal Organs. A Manual for Students and Physicians. By E. Le Veure, M.D. Second Edition. Revised and Enlarged. Cloth. Pp. 479. Price, \$2.25 net. Philadelphia: Lea Brothers & Co., 1905.

Among the new features of this edition are the very complete revision of the chapter on topographic and rational anatomy and the many new illustrations, including a number of radiographs of diseases of the heart and aorta. Such revisions as were necessary to bring the work up to date have been made.

OIL WELLS IN THE WOODS. By J. C. O'Day, M.D. With Illustrations by Miss Ethel Farmer, and Photographs Collected by the Author. Cloth. Pp. 359. Deposit, N. Y.: The Opuscula Press, 1905.

Dr. O'Day has written a tale that is interesting, but which is not notable for literary merit. The love story is woven about scenes in the oil wells of Pennsylvania, and its decided local flavor gives evidence of the author's intimate knowledge of the oil fields.

Catatonia.—Mouratoff after a critical study of this type of mental ailment and of its literature concludes that it is entitled to be considered rather as a morbid species by itself, with a somewhat definite though varied symptomatology, but with one symptom always constant, and a generally constant termination in dementia.

Miscellany

Graft.—Not many years since, a half-page advertisement of a sanitarium appeared in a well-known medical journal, offering stock of the sanitarium company on very advantageous terms to doctors sending patients to that institution. It did not lessen the insult of this intimation to learn that the leading spirit of the sanitarium company was a fellow of a learned medical organization of this state. A certain mineral springs company has recently, it is said, offered its stock to physicians, so as to induce them to advocate the use of its waters to their patients. Who does not know that in this city some opticians give, and some oculists shamefully accept, commissions on sales made to patients? The public should realize that an oculist, who insists on his patients buying their glasses at one or two special stores, lays himself open to the suspicion of being bribed to do so by a commission from the dealer. The same suspicion attaches to the doctor who unduly urges patients to buy medicines from one apothecary. It is true that spectacles and medicines should be accurately made and compounded; but there are usually too many reliable dealers, especially in large cities, to necessitate so restricted a choice for the mere benefit of the patient. Another scheme, to impose on the patient and extract from him what is practically two fees, consists in giving him a prescription for medicine under a special name, agreed on by the doctor and the druggist with whom he is in collusion. The patient is then obliged to go to the apothecary mentioned by the doctor, even if it be several miles out of his way, under the impression forsooth that no other apothecary prepares the remedy so carefully. This business enterprise is not unlike that practiced by some hospitals, which, to obtain a large and interesting accident service, keep beer and whisky ready for the men running the patrol wagon. Little wonder is it that the injured are at times driven many unnecessary squares and that certain institutions can show an unusually long list of accident cases. Whether these institutions similarly profit by using their private wards and rooms as boarding houses for members of state legislatures and their friends, who visit the centers of gayety for pleasure or business, need not be discussed in this paper.—J. B. Roberts.

The Logical Basis of the Sanitary Policy of Mosquito Reduction.—Sir Donald Ross, in *Science* (vol. xxi, No. 570, page 689, Dec. 1, 1905), said that the life of gnats, like that of other animals, is governed by fixed laws. Local reduction, that is, artificial reduction of the density of population, practically resolves itself into (a) direct destruction, and (b) artificial creation of unfavorable conditions. Suppose a box containing a million gnats were to be opened in the center of a large plain, and that the insects were allowed to wander freely in all directions. During the first minute most of the insects would fly toward every point of the compass. At the end of a minute a few might fly straight on and a few straight backward, while the rest would travel at various angles to the right or left. At the end of the second minute the same thing would occur. At last, after their death, it would be found that an extremely small proportion of the insects had moved continuously in one direction; and that the majority of them had wandered more or less backward and forward and had died in the vicinity of the pool or box from which they originally came. The law determining the behavior of these insects may be called the centripetal law of random wandering. It obtains that when living units wander from a given point, guided only by chance, they always tend to revert to that point. Mosquitoes guided either by chance or by search for food are not likely to wander continuously in one direction. They will always tend to persecute most those houses which lie in the immediate vicinity of their breeding pool. This is not understood by many who think that mosquitoes radiate as rays of light from a center, and argue that, therefore, it is useless to drain local breeding pools because of the influx of mosquitoes from without. Such an influx certainly exists, but it can not generally compensate for local destruction. Consider a tract of country over which numbers of mosquito-breeding pools are scattered, with houses and other feeding places lying among them. Drain away all

the pools to the right of a straight line drawn across this country, leaving all those to the left of it intact. How many mosquitoes will there now be on the right side, compared with those on the left side? We suppose that, before the drainage was effected, mosquitoes were then breeding fairly uniformly over the whole country; that there was a certain amount of migration across the line, both ways; and since the density was equal on both sides, this migration must also have been equal and opposite—that is, as many emigrants must have been constantly passing from right to left as from left to right. After drainage the following changes would occur: The insects breed as before on the left side of the line, and some continue as before to cross over into the drained country; but in the latter, on the right of the line, propagation is entirely checked and the migration from it to the left of the line now ceases. Hence, not only must there be a decrease of mosquito density on the right side of the line, but also a decrease on the left of the line—that is to say, the drainage has affected the mosquito density not only up to the line of demarcation, but beyond it. And moreover, since the migration was formerly equal from both sides of the line, the mosquitoes gained by immigration into the drained country must be exactly lost by the undrained country. The number of immigrants, therefore, into any area of operations must, for practical purposes, be very small or inappreciable a short distance within the boundary line. The effect of wind requires examination. With a wind blowing continuously from one direction, the indication would be to extend the drainage further in that direction. Obviously, wind may scatter mosquitoes, but it can not create them nor prevent the total average reduction due to anti-propagation measures, as some people seem to think. It is, however, very doubtful whether wind does drive or scatter mosquitoes to any great degree; they are extremely tenacious of locality. The statement is often made that mosquitoes are brought into towns in trains, carts and cabs. The number introduced in this manner must always be infinitesimal compared with those that fly in or which are bred in the town itself. Moreover, if vehicles bring them in they may also take them out. In conclusion, as a general rule for practical purposes, if the area of operations be of any considerable size, immigration will not very materially affect the result.

The Proper View to Take in Organization.—We can accomplish nothing outside of co-operative and organized work; and though we fail to realize all we hope for, we can attain much that will improve our present condition. Is it not childish for us to permit personal prejudices and predilections as to methods and men turn us aside from the attainment of this power we so plainly need? All great accomplishments demand the sacrifice of the smaller things for the greater in view; and if we could serve best the great profession to which we belong, and the present generation and those to come who look to us with hope and confidence, we must follow this rule that obtains in all great enterprises. Let us not be too ready to criticize methods and men; we ourselves are fallible. The future will work out many problems that perplex us now; and under broader and more intelligent views the needs will be met and the bad in men and methods will be thrown aside. The more strongly and heartily we combine now for this great object, forgetting the little differences that must come up, the sooner will we accomplish this great purpose. The profession of medicine will rise to a higher plane of proficiency and will occupy a higher place in the esteem of the people.—B. F. Eager, in *Kentucky State Medical Association Bulletin*.

The Right to Use Any Beneficial Method.—The right to select remedies and methods with absolute freedom is so generally recognized by all the so-called schools that sects are sects now only in name. Surgery is alike in all; dietetics and nursing know no school. Homoeopathy no longer pretends to administer infinitesimal doses of inversely potentized medicines, expecting them to produce symptoms like those of the disease treated; eclectics no longer assume to have a monopoly of wisdom in the selection of therapeutic remedies, and physio-medicals can boast of no useful information that may not be known by all. Then why should we not have a united profes-

sion? Many believe that we may have an undivided profession and have declared in favor of union by the simple abandonment of sectarian names. These designations have lost their original meaning, and are retained presumably for some supposed advantage in the proclamation which they make to the public. The constitution of the reorganized state and county societies wisely provides that any reputable physician who will agree to practice nonsectarian medicine shall be eligible to membership in these societies and thereby in the American Medical Association. This has raised the question as to what is implied in the practice of nonsectarian medicine. It is the practice of medicine and surgery without proclaiming to the public that such practice is based on any exclusive method or system. Truth as one sees it is to be the light, judgment as now to be the guide. The only restriction being that one is to refrain from using a sectarian designation which at best serves only to hold out a claim to the public that one has some remedy or method not possessed by our confrères.—*Columbus Medical Journal*.

The Extensor Digitorum Communis Reflex.—A. Morselli (*Rivista di Patologia nervosa e mentale*), has studied this reflex in various pathologic conditions and concludes that it is a phenomenon of muscular reaction dependent on the tone and trophic condition of the nervous centers. It is constantly present in normal individuals and is induced by percussion of certain points near the humeral condyles and on the forearm and appears in the form of extension of the fingers and the hand. It may not be present in children under 3 years and is dulled in old age. In pathologic conditions it may be exaggerated, weakened or abolished. In some nervous affections the intensity of this reflex may be a differentiating symptom, as, for example, between tabes and pseudo-tabes from alcohol, and between traumatic and alcoholic neuritis, since in the toxic forms the muscular reaction is torpid or feeble while in the others it is exaggerated. In hysteria and hystero-epileptic conditions it may be exaggerated while in epileptic states and in some neurasthenics it is weakened and finally abolished. In alcoholic and morphine insanity the reflex is torpid while on the other hand in dementia precox, in paresis and in mania it seems to be exaggerated.

Quacks in Turkey.—The Constantinople correspondent of the *Lancet* states that in Turkey quacks of all kinds flourish. He reports that the Turkish physician, Dr. Nouri Effendi, recently made a tour in the provinces and reported a deplorable state of affairs occasioned by the utter ignorance of the population and the inability to meet the difficulties arising out of different contagious maladies. The people never attach any importance to the first manifestations of the disease, but in later stages they call in all sorts of persons professing to be well versed in occult sciences. These persons attribute every malady to an evil eye. Their routine treatment is to administer a potion of water into which melted lead has been dropped, the draught to be taken during the recital of an incantation. The shapes assumed by the lead dropping into the water are pointed out to have various, generally menacing, significances. Other quacks prescribe a diet which has to be adhered to for 70 days and which consists of dry bread without salt. If the condition disappears the skill of the quack is praised. If the disease persists then it is due to the unhappy star of the patient's destiny. Dr. Nouri Effendi declared also that in consequence of such quackery and ignorance preventable and curable maladies are propagated with disastrous results.

Poisoning of a Child by Strychnin Tablets.—Dr. Vinnege reports in the *Lancet-Clinic*, May 6, 1905, an instructive case indicating the necessity of care in dispensing medicine. A physician left nine red tablets, each containing 1/60 of a grain of strychnin, on a table in a bedroom by a patient, with instructions for their use. The patient, not being confined to bed, left the room some time later, and on her return saw that the pills which had not yet been taken had disappeared. She found that one of the children had swallowed them. The child died. The attending physician, in his sworn statement before the coroner, said that as he went into the house he noticed the children playing in the front room. In spite of this, the dan-

ger of leaving the tablets loose on the table apparently did not occur to him. Dr. Vinmead, who reports the case with the consent of the attending physician for the sake of the warning it contains, quotes from the law of Indiana on the subject, from which it appears that the only restraint and guide the physician has is his reasonable care and diligence." The lesson is obvious that no tablets which would even be harmful to patients, should be dispensed in the manner spoken of.

Value of Discussions at Society Meetings.—I must admit that many of these long, so-called original papers I pass over, and simply read the discussions on them. The discussions generally contain the meat of the nut. They cover the ground in a condensed and concise manner. We can in this way obtain a knowledge of the papers read by reading a few words in place of reading a great many. Discussions of papers are usually limited to five minutes. A great deal can be said in five minutes, provided the one speaking confines himself closely to the subject matter. But when he speaks one-half of the time in complimenting the speaker, then some time in excuses, he can not say very much in the two minutes remaining. I think it would be well if the complimentary part was understood, and that no excuse or apologies were made, but let the five minutes be used in actual discussion of the papers.—George J. Munroe, in *Cincinnati Lancet-Clinic*.

Floating Hospital in Northern Africa.—It is reported that the Presbyterian Board of Foreign Missions has established a floating hospital on one of the tributaries of the Nile. In this way medical aid will be given to natives along the shores who suffer from pulmonary and eye diseases. The hospital boat will be equipped with all modern appliances for the treatment of trachoma and other eye diseases, and will make two trips each month from the mouth of the Sobat, a tributary of the Nile, to its source. The boat is named in memory of James A. Elliott.

State Boards of Registration

COMING EXAMINATIONS.

MAINE State Board of Registration of Medicine, City Building, Portland, March 13. Secretary, Wm. J. Maybury, Saco.

CONNECTICUT Medical Examining Board, City Hall, New Haven, March 13-14. Secretary, Charles A. Tuttle, New Haven.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, March 13-14. Secretary, Edwin B. Harvey, Boston.

Minnesota January Report.—Dr. O. E. Linjer, of the Minnesota State Board of Medical Examiners, reports the written examination held in St. Paul, Jan. 2-4, 1906. The number of subjects examined in was 12; total number of questions asked, 95; percentage required to pass, 75. The total number of applicants examined was 27, of whom 19 passed and 8 failed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|---|---------------------------|------------|-----------|
| Queen's University, Ontario (1896) 77.1; (1901) 77.5; (1903) 81.4 | | | |
| Columbia University, New York..... | (1905) | | 85.1 |
| Barnes Med. Coll., Chicago..... | (1905) | | 76.5 |
| University of Minnesota..... | (1905) 75, 77.7, 83.5, | | 83.7 |
| University of Illinois..... | (1905) | | 78.7 |
| McGill University..... | (1902) | | 88.7 |
| Jefferson Med. Coll., Philadelphia..... | (1905) | | 77.9 |
| Hahnemann Med. Coll., Chicago..... | (1905) | | 77.6 |
| Harvard University..... | (1886) | | 85.5 |
| University of Pennsylvania..... | (1905) | | 81.7 |
| Laval University, Quebec..... | (1899) | | 78.3 |
| Northwestern University..... | (1905) | | 85.8 |
| University of Leipzig, Germany..... | (1833) | | 80.1 |
| University of Michigan, Homeo. Dept.,..... | (1904) | | 85.3 |
| Omaha Med. Coll.,..... | (1902) | | 69.9 |
| Jefferson Med. Coll.,..... | (1897) | | 74 |
| Hahnemann Med. Coll., Chicago..... | (1904) 63.8; (1905) 70.9, | | 75.1 |
| University of Minnesota..... | (1905) | | 73 |
| Laval University, Quebec..... | (1902) | | 72.2 |
| Rush Med. Coll.,..... | (1902) | | 68.9 |

FAILED.

* Low mark in the important branches.

New Requirements in Nebraska.—The following resolution, effective July 1, 1906, has been adopted by the Nebraska State Board of Health: "Resolved, That applicants for a license to practice medicine in the state of Nebraska shall present to the board of examiners evidence of having university or college

degree or a high school diploma of college entrance standard or in lieu thereof applicant must pass a satisfactory examination before the state superintendent of public instruction."

South Dakota January Report.—Dr. H. E. McNutt, secretary of the South Dakota Board of Medical Examiners, reports the written examination held at Sioux Falls, Jan. 10-11, 1906. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 12, of whom 11 passed and 1 failed. Twelve candidates were granted license by reciprocity. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|--|-------------------------|------------|-----------|
| University of Nebraska..... | (1905) | | 81.6 |
| University of Nashville..... | (1904) | | 75.9 |
| American Coll. of Med. & Surg., Chicago..... | (1904) | | 78.7 |
| University of Toronto..... | (1890) | | 83.7 |
| Freighton Med. Coll.,..... | (1905) 82.7, 83.4, 88.7 | | |
| College of P. & A.,..... | (1906) 77.9, 85.6 | | |
| Lincoln Med. Coll.,..... | (1906) | | 79.5 |
| University of Iowa..... | (1903) | | 78.2 |

FAILED.

University of Vermont..... (1899) **72.3
* Reciprocity, with supplemental examination, 4 subjects.
Failed on previous examination; this was his second examination.

** Third examination.

SURGERY.

1. What is the point of selection for resection of the ribs, and why? 2. Name the conditions requiring, and the usual method of performing, a thoracotomy. 3. Describe the mechanism of a fall from a chair in a saloon and receives a slight scalp wound. He goes to bed and is found, four hours later, in a state of coma. To what may the coma be due, and how would you treat the patient? 4. What are the symptoms of stone in the bladder? 5. What complication is apt to result from a fracture of the tibia and fibula immediately below the knee joint, with backward displacement of the proximal fragments? Treat the fracture. 6. Name the different varieties of urethral stricture, and describe the methods of treating them. 7. How would you treat a septic infection of an extremity? 8. State what you consider, giving your reasons, to be the most suitable suture material for (a) intestinal anastomosis, (b) uniting the peritoneum, (c) uniting the muscular layers of the abdominal wall, (d) closing the skin. 9. What general principles must be followed in treating a fracture occurring at or near joints? 10. What is a sprained ankle? Give treatment. 11. What precautions should be observed in producing general anesthesia with (a) chloroform; (b) ether; and local anesthesia with cocaine?

BACTERIOLOGY.

1. What bacteria are associated with inflammation and suppuration? 2. What are Koch's postulates? 3. Give in detail a method of staining for the tubercle bacillus. 4. Is the Widal reaction always conclusive? Describe the method of producing it. 5. To what uses is his ordinary work can a general practitioner put a microscope?

ANATOMY.

1. Describe the first, ninth, tenth and eleventh dorsal vertebrae. 2. Draw a diagram of and describe the ulna. 3. Mention the muscles of the forearm, and give origin and insertion of any two of them. 4. Describe the distribution of the trigeminal, facial and iliac vein. 6. Give nerve and blood supply of the pancreas. 7. Describe the canal of Wirsung. 8. Describe the hepatic duct. 9. Describe the larynx. 10. Describe Meckel's ganglion.

DISEASES OF WOMEN.

1. Give cause, diagnosis and treatment of "erosion of the cervix." 2. Give differential treatment of extrauterine pregnancy and intrauterine fibroma. 3. Give treatment of membranous dysmenorrhea. 4. Give diagnosis and treatment of gonorrhea. 5. Describe infantile uterus. Give treatment.

EYE AND EAR.

1. Define blepharitis, epiphora, photophobia, pterygium and hyperopia. 2. Sketch cross-section of eyeball in antero-posterior plane. Name and show relation of parts. 3. Define dacryocystitis. 4. Give treatment of acute case. 4. Outline cause, treatment and prophylaxis of neonatorum. Give preventive treatment. 5. Name symptoms which would justify a mastoid operation.

SKIN AND VENEREAL.

1. How would you treat a case of acute gonorrhea, and how would you positively diagnose gonococci microscopically? 2. Describe and treat lupus vulgaris. 3. Differentiate eczema and seborrhea of the scalp, and treat the mechanism of treatment and its chance. How would you treat a patient who has one? 5. Name four (4) contagious diseases that have diagnostic skin eruptions. Describe the eruptions of each.

PHYSIOLOGY.

1. Describe chyme and chyle. 2. Give the normal constituents, reaction and specific gravity of urine. 3. Whence do bones derive their nourishment? 4. Give the mechanism of respiration and its purpose. 5. Give examples of morbid reflex action. 6. Describe the temporary and permanent sets of teeth. 7. What are the functions of the lungs? Describe their action. 8. How is animal heat produced. 9. Describe the physiology of vision. 10. Name the active principles of the digestive secretions, and describe how each affects the food.

OBSTETRICS.

1. Describe the internal organs of generation and their anatomic relations, giving blood and nerve supply of each. 2. Describe a transverse presentation, giving diagnosis and your management of the same in a given case. 3. Give symptoms indicating death of child *in utero*. 4. Give usual relative time of the different stages of labor. 5. Give the indications of apoplexy in the newborn child. 6. How would you manage a prolapsed funis? What are the dan-

gers? 7. Define uterine inertia, and give its immediate and remote significance. Give treatment. 8. Describe in full your management of the third stage of labor. 9. When would you use forceps with head in the upper strait? Describe manner of so using them. 10. Give causes of lacerated cervix, also time and manner of treatment.

GENERAL PATHOLOGY.

1. How should sputum be examined when tuberculous infection is suspected? 2. What is a giant cell? 3. What degenerative changes occur in arteries? 4. Give the causes of edema. 5. Where do we generally find myofibromata?

THERAPEUTICS AND REGULAR PRACTICE.

1. How do borax and boric acid differ chemically and therapeutically? 2. How would you use croton oil? 3. Describe the proper method of giving hypodermic injections. 4. What do you know of the uses and effects of scopolamin? 5. Mention a soluble and insoluble salt of lead, and tell how and for what purpose they are used in medicine. 6. Name one important complication, one sequel, and give ordinary care limit of typhoid fever. 7. How should apoplexy from cerebral hemorrhage be treated? 8. Define hysteria. 9. Differentiate abscess and cancer of liver. 10. What do you understand neurasthenia to be?

ECLECTIC MATERIA MEDICA, THERAPEUTICS AND PRACTICE.

1. In what pathological conditions is camphor used? Give doses used internally. 2. Give some of the therapeutic uses of cuprum sulphate, also the doses. 3. Name and give dose of a hydragogue: also of a cholagogue. 4. Name some of the best remedies to control vomiting, and give dose of each. 5. For what is apomorphine used? Dose of same. 6. Give symptoms and treatment of a case of malarial fever. 7. Write a prescription for insomnia. 8. Give the dose of (a) nitroglycerin, (b) atropin, (c) potassium iodid. 9. Give symptoms and antidote in opium poisoning. 10. Give differential diagnosis between alcoholism and apoplexy.

CHEMISTRY.

1. What do you understand by chemical action? Give examples. 2. Distinguish between synthetic and analytic reactions. 3. What group of elements (radicals) is characteristic of all hydrates, carbonates, nitrates, sulphates? 4. What are alkaloids? Name the essential alkaloids of opium. 5. Give chemical name and formula of lunar caustic, caustic potash, fire damp. 6. Give a chemical test for pus and mucus in urine. 7. What sediments are soluble (a) when heated in supernatant urine, (b) with acetic acid, (c) with hydrochloric acid? 8. What causes hardness in well water? 9. What chemical is in ratbane, rat cheese and poison fly paper? What are the best antidotes for poisoning by it, and how may the antidotes be most conveniently prepared? 10. What is iye chemically considered? What antidotes for poisoning by it?

HOMOEOPATHIC THERAPEUTICS.

1. How do you treat pneumonia? Give remedies used in each stage. 2. Outline your treatment of membranous croup. Give indications for remedies. 3. Give the best remedies for the treatment of three prominent remedies in the treatment of diarrhea. 4. Differentiate between belladonna, china, and scalle in uterine hemorrhage. 5. Give characteristic symptoms calling for rhus in rheumatism; also in typhoid. 6. Name two remedies (giving indications for their use) in nervous affections. 7. Outline your treatment of purpural eclampsia, giving dose and potency of remedies used. 8. Differentiate nux vom, ipecacodum and ipecac in stomach troubles. 9. Describe a case fully in which you would use sulphur. 10. Differentiate arsenicum, hepar sulphur and silica in pus affections.

MEDICAL JURISPRUDENCE.

1. What are the powers of the coroner? 2. Of what importance is the gaping of the wound? 3. What are the postmortem appearances peculiar to death by strangulation? 4. Differentiate rigor mortis from the rigidity of hysteria, catalepsy. 5. When called as a medical witness, (a) must a physician obey the summons of the court? (b) must he be satisfied with the fee of an ordinary witness? or (c) when may he charge more for his services? and (d) why?

Virginia December Report.—Dr. R. S. Martin, secretary of the Medical Examining Board of Virginia, reports the written and oral examination held at Richmond, Dec. 12-15, 1905. The percentage required to pass was 75. The total number of candidates examined was 125, of whom 40 passed, including 6 who were licensed by reciprocity; 17 failed. Sixty-seven undergraduates took a partial examination. One candidate handed in no paper. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|--|------------------------------|------------|-----------|
| Hospital Coll. of Med. | (1903) 78; | (1905) 76 | |
| University of Virginia. (1887) 95; (1900) 86; (1901) 86; (1904) 78, 80, 82, 85; (1905) 79. | | | |
| College of P. and S., New York. | (1883) 75 | | |
| Pulte Med. Coll. | (1905) 75 | | |
| Leonard Med. Coll. | (1904) 75, 75; (1905) 76 | | |
| Columbian University. | (1891) 80 | | |
| Medical College of Virginia. | (1905) 75, 76, 77 | | |
| Medical College of Ohio. | (1867) 75 | | |
| University of Pennsylvania. | (1902) 86; (1903) 85 | | |
| University Coll. of Med. | (1894) 80; (1905) 76, 76, 70 | | |
| National University, Washington. | (1903) 81 | | |
| Walt Home. Med. Coll. | (1905) 75 | | |
| University of Maryland. | (1905) 77 | | |
| George Washington University. | (1886) 75; (1905) 85 | | |
| Maryland Med. Coll. | (1905) 75 | | |
| Tennessee Med. Coll. | (1880) 75 | | |
| Vanderbilt University. | (1890) 85 | | |

LICENSED BY RECIPROCY.

| | |
|---|--------|
| Woman's Med. Coll., Baltimore. | (1905) |
| Columbian University. | (1899) |
| University of Maryland (2 candidates). | (1905) |
| Johns Hopkins University. | (1905) |
| Maryland Med. Coll. | (1905) |

FAILED.

| | |
|--|------------------------------|
| University of Maryland. | (1903) 67 |
| University of the South. | (1904) 50; (1905) 74 |
| Howard Med. Coll. | (1904) 74 |
| Leonard Med. Coll. | (1904) 73, 73, 73; (1905) 73 |
| University of Virginia. | (1904) 74 |
| Medical College of Virginia. | (1905) 71, 73, 74 |
| Medico-Chirurgical College, Philadelphia. | (1904) 67 |
| Hospital Coll. of Med. | (1904) 60; (1905) 33 |
| Maryland Med. Coll. | (1904) 67 |
| Baltimore Med. Coll. | (1905) 69 |

Wyoming January Report.—Dr. S. B. Miller, secretary of the State Board of Medical Examiners, reports the written examination held at Laramie, Jan. 17, 1906. The number of subjects examined in was 11; total number of questions asked, 110; percentage required to pass, 75. One candidate was examined and passed.

| College. | PASSED. | Year Grad. | Per Cent. |
|---------------------------|---------|------------|-----------|
| Jefferson Med. Coll. | (1891) | | 85.9 |

Medical Organization

What Can the County Society Do?

XII. STOP TESTIMONIAL GIVING.

At one of the "business" meetings during the year the subject of discussion may with great profit be "testimonials." Starting with the text that the giving of testimonials for any article employed therapeutically is reprehensible, the subject in its various aspects can be freely discussed. Every effort should be made to utilize the occasion to secure an agreement among all the doctors in the county that no testimonials whatever will hereafter be given. An appropriate proceeding would be, after proper notice, to bring the subject up in the form of a resolution declaring the society's adhesion to the pronouncement on this subject of the "Principles of Ethics" of the American Medical Association. Possibly in some societies this might best be done at the same meeting at which there is full consideration of the proprietary medicine evil.

XIII. EXPOSE SWINDLING.

At an early meeting to which some of the laity are invited the two articles by Mark Sullivan in the *Ladies' Home Journal* for January, 1906, should be read and submitted for general discussion. The revelations of swindling in the patent-medicine traffic are therein so dramatically and so convincingly laid bare that much good to the community is sure to follow their general public discussion. As before observed, the joint meeting with the laity is one of the very best methods of popular instruction in matters pertaining to the public health. Every county society can readily adopt the method, and these timely topics of discussion furnish admirable opportunity to arouse public interest in the establishment of the custom.

Businesslike Methods Desirable.

The conscientious physician must have due regard for the commercial side of his profession, because a poor physician, one who can not provide himself with the proper and necessary equipment, one who can not keep in touch with medical progress, is a dangerous man; and in order to equip himself properly and to keep abreast of the times he must make a satisfactory income. He should keep his accounts accurately and see that his bills are rendered promptly and every effort made to collect them, save in cases of destitution. People in general have more respect for a man who manages his affairs in a businesslike way than for one who is careless and shiftless. There is no more reason why the physician should give his patients a year or more credit, provided they are able to pay, than there is for the grocer or the butcher to do so. "Short

accounts make long friends." A course on business methods would be a very good thing for every county medical society to arrange, and undoubtedly much betterment would result; betterment not only to the physicians themselves, but to their patients and the community generally. With a harmonious profession and an active county medical society in which are all reputable physicians of the county, there will be fewer well-to-do families getting their medical attendance free, year in and year out. While commercialism, as such, has no part in the professional life of a physician, common sense or "horse sense" has, and it should be applied literally to the physician's business methods.

Benefits in Attending Medical Society Meetings.

The *Southern Practitioner* says editorially:

"Take a careful look at the membership of the American Medical Association during its entire existence for many years or of any state or local organization, and you will find enrolled therein the ablest, the most successful, the most prominent medical men of the particular time under consideration. Our busiest members have found time to participate in the meetings, if not every year, at least a great proportion of the time. Occasionally we have made overtures to professional men in regard to participating in society work, and have been met with the statement, 'We are too busy,' 'Could not spare the time'; yet a careful observation has forced the conclusion that such would have done better if they had never opened a medical book, and had devoted their time and talents to some other vocation. Unquestionably times do occur that professional or other duties will prevent attendance on a given meeting of a local or state society, and all can not attend the annual meetings of the national association; yet, if each member of the profession will but endeavor to participate in as many meetings of his local society, and occasionally attend a meeting of his state organization, he will find that the time so spent will be of more intrinsic value in the end than double the time spent in any other duty—yes, we regard this as a duty incumbent on any practitioner acting for the best interests of himself and those dependent on him for professional services. This may be regarded as a strong statement, yet it is the result of careful observation during more than forty years of professional life, and we know will be substantiated by the leading medical men of this and all other enlightened and civilized countries.

"Much has been said about the benefits and advantages of organization. Its results are seen everywhere, and to no body of men is it so important, so necessary and essential, as it is to the members of the medical profession. Except in occasional instances of consultation, their very work leads them to segregation and isolation. A daily duty of making visits as a duty renders to some extent social visiting irksome; and even though one is an omnivorous reader of standard and periodical literature, he is apt to get into a groove, be limited in his views and resources, narrow in his observation—all of which is overcome by an occasional meeting with a collective number of others, some his inferiors, others his peers, and possibly a few his superiors in like work. By such association he adds his experience to that of others, and has the far wider experience of others added to his. Not all at one time, but a little at this meeting, more at another, and when he has established the habit—we are all more or less creatures of habit, of becoming a regular attendant at even local society meetings—it is astonishing how his entire methods, measures, manners, and life in all its technical details are broadened, advanced, and materially increased.

"By organization and regular meetings personal jealousies, petty bickerings, slanderous and scurrilous backbitings disappear and are supplanted by a broad and liberal ambition and emulation as to who can excel and who can add the more to the sum of professional knowledge, skill, and correct technic. Nor is it alone from the papers, essays, and discourses thereon that we can and do derive a national benefit. Some of the most practical and valuable ideas and suggestions ever received have been obtained in the personal conversation with other medical men in attendance on a meeting. While many valuable ideas and thoughts have resulted from careful attention to the regular program, yet some of far more value have been obtained in the social intercourse and conversation on assembling before the meeting as called to order and after its close."

Arizona.

SANTA CRUZ COUNTY MEDICAL SOCIETY.—At the annual election of officers of the Santa Cruz County Medical Society, held at Nogales, February 1, the following was the result: President, Dr. Adolphus H. Noon; vice-president, Dr. Harry W. Purdy; secretary and treasurer, Dr. Albert L. Gustetter; delegate to Arizona Medical Association, Dr. Ray Ferguson, and censor, Dr. Nicholas K. Noon, all of Nogales. This society was recently organized on the standard plan and begins its work with good promise for the future.

California.

TEHAMA COUNTY MEDICAL SOCIETY.—Physicians of this county met at Red Bluff, Dec. 6, 1905, and after an address on organization by Dr. Philip Mills Jones, San Francisco, secretary of the state society, organized a county society on the standard plan, electing the following officers: President, Dr. John M. West; vice-president, Dr. Frank J. Bailey, and secretary, Dr. Frank L. Doane, all of Red Bluff.

PIKE COUNTY MEDICAL SOCIETY.—Under the guidance of Dr. Mallie A. Clark, Macon, counselor for the sixth district, a county society on the standard plan was organized at Barnesville, Dec. 19, 1905, with an initial membership of 13, and the following officers: Dr. John C. Beachamp, Williamson, president; Dr. John A. Corry, Barnesville, vice-president; Dr. M. M. Head, Zebulon, secretary and treasurer; and Drs. George M. McDowell, Molena; John M. Anderson, Barnesville, and William M. Aycock, Williamson, censors.

Connecticut.

BRISTOL MEDICAL SOCIETY.—The physicians of Forrestville, Plainville and Terryville have organized a medical society.

Georgia.

TALIAFERRO COUNTY MEDICAL ASSOCIATION.—Physicians of the county met at Crawfordville February 6, and with the aid of Dr. W. W. Pilcher, Warrenton, counselor for the tenth district, organized a county medical association, with the following officers: President, Dr. Arthur C. Davidson, Sharon; vice-president, Dr. John A. Rhodes, Crawfordville; secretary, Dr. A. H. Benzley, and censors, Drs. Lawrence R. Brown, Sharon; Power, and John A. Rhodes, Crawfordville.

SPALDING COUNTY MEDICAL SOCIETY.—Physicians of the county met at Griffin, Dec. 8, 1905, and organized a county society on the standard plan with the following officers: President, Dr. Nicholas B. Drevry, Griffin; vice-president, Dr. William M. Byne, Zetella; secretary, Dr. Joseph M. Thomas, Griffin, and treasurer, Dr. Thomas J. Collier, Griffin.

MCDUFFIE COUNTY MEDICAL SOCIETY.—On January 16 the physicians of the county met with Dr. William Z. Holliday, Augusta, president of the Medical Association of Georgia, and Dr. W. W. Pilcher, Warrenton, counselor for the tenth district, at Thomson, and organized a county society on the standard plan. The constitution and by-laws approved by the state association were adopted, and the following officers elected: Dr. Edward S. Harrison, Thomson, president; Dr. Sterling R. Gibson, Thomson, vice-president; Dr. B. F. Riley, Jr., Thomson, secretary and treasurer; Drs. F. N. Ware, Thomson, and Aaron J. Mathews, Thomson, and Z. Daniel Story, Winfield, censors, and Dr. Z. Daniel Story, Winfield, delegate to the state association. Every physician in the county has joined the society.

Kentucky.

NICHOLAS COUNTY MEDICAL ASSOCIATION.—The physicians of the county met in Carlisle, January 26, for the purpose of reorganizing the county association. Dr. Robert J. R. Tilton, Carlisle, was elected president; Dr. Oliver S. Kash, Moorefield, vice-president, and Dr. George B. Spencer, Carlisle, secretary and treasurer.

Louisiana.

FRANKLIN PARISH MEDICAL SOCIETY.—The physicians of Franklin Parish met January 19 at Jonesboro and organized a medical society in affiliation with the Louisiana State Medical Society, with the following officers: Dr. Mallory B. Culpepper, Hood's Mill, president; Dr. George E. Cannon, Jonesboro, vice-president; Dr. J. A. Gaar, Jonesboro, secretary; Dr. Isaac M. George, Jonesboro, treasurer.

Maine.

MEDICAL ASSOCIATION OF KENNEBEC COUNTY.—At the regular meeting of this association, held in Waterville, January 24, Dr. Seth C. Gordon, Portland, delivered an address on organization, giving the history of the work already done in that line through the efforts of the American Medical Association.

Michigan.

ALLEGAN COUNTY MEDICAL ASSOCIATION.—This association has been consolidated with the Kalamazoo Academy of Medicine.

Missouri.

LAWRENCE COUNTY MEDICAL SOCIETY.—Twelve physicians of this county met at Mount Vernon recently and organized a county society, adopting the standard constitution and applying for a charter to the Missouri State Medical Association. The following officers were elected: President, Dr. James A. Harris, Mount Vernon; vice-president, Dr. F. S. Stevenson, Aurora; treasurer, Dr. John P. Andrews, Marionville; secretary Dr. Charles A. Moore, Aurora, and censors, Drs. Alphonso H. Madry, Aurora; Charles W. Shelton, Mount Vernon, and John B. Fleming, Aurora.

New Jersey.

MERCER COUNTY MEDICAL SOCIETY.—At a meeting of this society in Trenton, January 9, a complete report was made by the committee which had had in charge the consideration of the reorganization of the society on the standard plan.

North Dakota.

TRAIL-STEELE COUNTY MEDICAL SOCIETY.—The physicians of Trail and Steele counties met in Mayville, January 31, and organized a society on the standard plan with the following officers: Dr. Kristian A. Wadel, Portland, president; Dr. George McIntyre, Mayville, vice-president; Dr. Edward C. Haagensen, Hillsboro, secretary, and Dr. Archibald N. Currie, Hatton, treasurer.

South Carolina.

FOURTH DISTRICT MEDICAL SOCIETY.—Physicians of the fourth district met in Greenville, February 5, and organized a district society on the standard plan. Dr. J. Wilkinson Jervey, Greenville, counselor for the fourth district, was elected chairman, and Dr. Edgar A. Hines, Seneca, secretary.

Texas.

SMITH COUNTY MEDICAL SOCIETY.—The medical society of this county has changed its method of work, and on January 9 began a series of monthly postgraduate courses in medicine to which every physician in the county was invited. A program of clinical work for the day was arranged, cases and demonstrations being given in tuberculosis, heart diseases, diseases of the kidneys and diseases of the skin. This movement is a gratifying evidence of the beneficial results of the work done in Texas by Dr. McCormack in the fall.

Utah.

CACHE VALLEY MEDICAL ASSOCIATION.—A number of physicians from the Cache valley, including some from Preston and Franklin, Idaho, met in Logan City, January 24, and organized a medical association in uniformity with the state association. The following officers were elected: President, Dr. Russell J. Smith, Smithfield; vice-president, Dr. G. W. States, Franklin; secretary and treasurer, Dr. Heber K. Merrill, Logan, and program committee, Dr. R. J. Smith, Smithfield; Dr. Albert H. Cantril, Hyrum, and Dr. Emery, Preston.

Virginia.

RAPPAHANNOCK VALLEY MEDICAL SOCIETY.—The physicians of Fredericksburg have reorganized this society and have elected Dr. Joseph N. Barney, president, and Dr. W. Jeffries Chewning, secretary and treasurer. The first meeting of the reorganized society was held January 5.

Society Proceedings

JEFFERSON COUNTY MEDICAL SOCIETY.

Regular Semi-monthly Meeting, held at Birmingham, Ala., Jan. 22, 1906.

The Gospel of Patent Medicines.

Dr. J. ROSS SNYDER read a paper with the above title. He said that the medical profession had been accused by some ministers of harboring skepticism and infidelity. After denying the breadth of this charge, Dr. Snyder suggested that the attitude of many leading ministers toward patent medicines was so inconsistent with high standards of morality that physicians

in turn might well speak skeptically of the ministers. Many ministers lend encouragement to patent-medicine frauds, some by testimonials, others by soliciting and publishing advertisements in the religious papers over which they have control.

In a recent issue of the *Alabama Christian Advocate* there were seventy advertisements in all, twenty of which were of patent medicines. In the *Alabama Baptist*, out of fifty-two advertisements twenty-two were of patent medicines. Dr. Snyder gave the names of the medicines advertised in both papers, but did not discuss in detail all of them. He thought this not necessary, for the fraud contained in many of the advertisements was too glaring to permit any plea of ignorance by the publishers of the papers. A few of the advertisements, however, he discussed in detail.

The proprietors of Dr. Lord's headache powders had admitted to Dr. Snyder that the preparation contained about two grains of acetanilid to the dose. The deleterious and sometimes fatal effects following the continued use of acetanilid were illustrated. Dr. Snyder suggested that the Alabama State Medical Association ought to father a bill prohibiting the sale of acetanilid except on a physician's prescription.

Physicians can only deal successfully with tumors and cancers by using the knife. "Dr." Bye, however, says he can remove any of these with oils. That any oil, potent enough to take the place of the knife in the removal of tumors and cancers, can be either "balm" or "soothing" is a contradiction striking enough to be ludicrous.

Mrs. Winslow's soothing syrup advertisements found conspicuous space in both papers. The active ingredient in this syrup is opium. The physiologic action of opium, the susceptibility of children to the drug, and the opium habit were discussed. Soothing syrups were characterized as the most damnable of all nostrums.

"Mrs. M. Summers" advertised in one of these religious papers a preparation for the cure of all female troubles. Dr. Snyder showed that back of this advertisement is not a woman, but a pharmaceutical house which manufactures seventeen doubtful preparations. The advertisement is a deception meant to obtain from women their secret conditions, revealed in the belief that they are communicated to one of their own sex.

The "Marvel whirling spray syringe" was cited as another indecent advertisement. If the publishers of the paper do not know that this is sold chiefly as an instrument for preventing conception they are less discerning than a majority of their readers. It requires no stretch of the imagination to trace the downfall of a young girl to too close reading of a religious paper.

Some states and some secular papers prohibit the publication of obscene and indecent advertisements. It is a remarkable comment on Christian churchmen that they are less discriminating on this question of morality. Attention was called by Dr. Snyder to the inconsistency of any paper pleading for the temperance cause and publishing in the same column the advertisement of alcoholic patent medicines.

In reply to a subscriber's criticism of the patent-medicine advertisements in a certain religious paper, one of the editors said in the paper that "there is plenty of good reading in the paper except those who were scenting around for something to object to; the patent-medicine advertisements are only intended for people wanting something of that kind." This editor was compared to a minister who would build a brothel, a saloon and a church under one roof, and who would defend himself by saying that the church was big enough for all good people, and only those "wanting something of that kind" need get into the other two places.

After expressing the hope that the evil of "patent medicines" was becoming generally admitted, the ministers were invited to "come over on the Lord's side."

DISCUSSION.

DR. THOMAS D. PARKE sustained the general charge and stated that reform along this line had been earnestly urged on the press by the society more than once during the past ten years.

The editors of the two local religious papers had been notified in advance of the topic for discussion, and had been invited to be present. They were accorded the privileges of the floor and were invited to express themselves on the charges preferred.

REV. FRANK W. BARNETT, editor and proprietor of the *Alabama Baptist*, acknowledged a realization of the impropriety of some advertisements carried by his paper, and stated that he was engaged in an investigation looking toward the possibility of discontinuing such, when apprised of the nature of the meeting. He further explained that he found himself bound by a three-year contract to carry many of these advertisements until the expiration of this agreement, and would, when possible, discontinue the advertising of such nostrums as might be proved to be of a harmful character. Going into the methods of advertising agencies, as explained to him through their representatives, he stated that one department had charge of all "patent-medicine" advertising in all religious papers in the southern states; that the refusal of one or more advertisements by one or more papers in a state might nullify the contract for the agency or its representative, and that such arguments were adduced by said representatives as obligations on the papers to continue such advertising *in toto*. He confessed that he had failed to see the fraudulency or impropriety of certain advertisements which Dr. Snyder believed to be self-evident.

REV. J. D. ELLIS, editor of the *Christian Advocate*, corroborated in the main the defensive plea offered by the preceding speaker. He cited one clearly indecent advertisement which had appeared twice in his paper, to be withdrawn, and believed Dr. Snyder should be given due credit for such action, and for the expressed intention of discontinuing some advertisements when found possible.

DR. SNYDER stated his failure to discover reasonable evidence of intention or efforts toward a proper reformation and reiterated his charges.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting, Jan. 24, 1906.

The President, DR. CHARLES K. MILLS, in the Chair.

SYMPOSIUM ON THE CARE OF THE INDIGENT INSANE.

Public Care of the Insane.

DR. JOHN B. CHAPIN, of the Pennsylvania Hospital for the Insane, likened the Philadelphia Hospital to an enlargement of the county poorhouses of early days, caring for the sick, poor, paupers, idiots and insane. It was stated that from a general observation the majority of the insane poor were, previous to the insanity, self-supporters, rent-payers, and in a sense indirectly tax-payers. They were, therefore, entitled to relief and care. The first essential in their care was said to be an absolute divorcement of the insane from an almshouse with its associations and traditions. The new hospital should be in the country. There should be a qualified medical director, clothed with ample power, possessing a reasonable tenure of office and in no way subject to a so-called warden, who would soon or late stand for some political organization. Among some of the results realized by the chronic class of patients would be the formation of orderly habits of living and occupation afforded by the opportunities of a farm and a large community, decided improvement in the mental condition of the whole number and the restoration of many to their families.

Whether this work should be undertaken by the city or state was considered immaterial, provided it was well done. If undertaken by the state there will be a reasonable guaranty that a higher standard of care would be maintained and the institution be free from the demoralizing influences of politics. Accommodation should be provided for at least 1,800 patients, together with the necessary officers and employees, and a scheme agreed on to meet the inevitable annual permanent increment. The plan of erecting plain, substantial blocks, or detached buildings, supplemental to an administration building, which

could be added to from time to time, furnishes a suggestion for the scheme which is now proposed. The detached blocks furnish extraordinary facilities for classification of special cases and reduces the danger of destruction by fire to a minimum. Any plan presented should permit of additions and expansion as necessary.

Assuming the removal to the country of the pauper population, Dr. Chapin believes there should be provided on the present site a hospital for the reception of emergency cases, acute cases of delirium from any cause and persons arrested requiring temporary detention on the sudden outbreak of insanity. Many such cases, he believes, would be discharged without transfer to the colony. This institution should be a hospital in name and fact, equipped for the best hospital care of acute cases.

The adoption of some such plan as outlined, Dr. Chapin believes the only one which will solve the present problem of the disposition of the large number of chronic insane persons now in the Philadelphia Hospital. Each patient should have a proper allotment of cubic and superficial space, and a dietary should be established to meet the wants of the able-bodied as well as the sick and feeble. There should be organized a medical service of a high standard for the emergency wards. This, in Dr. Chapin's opinion, the medical profession has a right to demand as citizens and sympathizers with a distress that may afflict any one in the community. If this is well done he does not think tax-payers will question the expenditure. To do less than is proposed he believes will result in the gradual degeneration of the whole service, as has been shown in every municipality where the attempt has been made to care for the insane poor apart from state supervision and control.

State Care of the Insane in New York.

DR. FREDERICK PETERSON, ex-president of the New York Commission in Lunacy, in reading this paper said that it was a singular circumstance that a stranger should speak to Philadelphians on the humane care and treatment of the insane, for Philadelphia had been the first city in the Union to preach the gospel of sickness for these unfortunates and the first to practice the doctrine. More than 150 years ago Philadelphia established a hospital for the insane, which was a long step in advance of that period. Dr. Rush, of Philadelphia, was the Pinel of America. He abolished whipping as a remedial measure for insanity and discarded manacles and chains.

Dr. Peterson reviewed the progress of the insanity legislation in the State of New York, the first step of which was taken fifty years subsequent to the establishment of a hospital for mental disorders in Philadelphia. By 1896 all of the indigent insane of the State of New York had been placed under state care. The fourteen state hospitals and the twenty-three private retreats for the insane are all under the jurisdiction of the State Commission in Lunacy, consisting of a physician, a lawyer and a business man. These private retreats are supervised and inspected, and licenses may be revoked on failure to comply with the regulations of the commission. This body has not only supervision over the state hospitals, but the entire management of the expenditures for the maintenance of the patients and the construction of new buildings. The old idea of separate provision for the acute and chronic patients was long ago abandoned.

A summary was given of changes in contrast to the methods employed in the county management. Among these were the establishment of training schools for nurses in all of the state hospitals, a central pathologic institute or school of psychiatry at Ward's Island in the New York City asylums, to which all the assistant physicians from the various hospitals of the state go for instruction in the latest scientific methods of study and treatment of the insane. This is under the directorship of Dr. Adolf Meyer. Most of the hospitals have staffs of consulting physicians from neighboring cities. A woman physician, a salaried dentist and an oculist are required at each hospital. Each hospital is thoroughly equipped with everything needed in medical and surgical instruments and appliances. Emergency commitments now in force give speedy access to hospital care. Restraint by means of straps, etc., has been almost abandoned, and some wards have unbarred windows and doors. Occupa-

tions for the patients have multiplied and the work of the able-bodied in shops, gardens, fields have monetary value. Wards and rooms have been made attractive and religious services are held by salaried chaplains. Special tuberculosis hospitals have been constructed at several of the county asylums, and several of the hospitals have small colonies at a distance for the care of convalescent patients in charge of air and scene.

New York State has appropriated \$300,000 to construct a psychopathic hospital on Manhattan Island to act as a distributing center for the insane of all classes. It was urged that every great city should have emergency pavilions in connection with the hospitals to which patients supposed to be insane can be at once taken, not only for observation, custody and diagnosis, but for immediate treatment.

DISCUSSION.

DR. W. M. L. COPLIN thought that no large city could properly care for the insane and the indigent not insane in its corporate limits on account of the value of the ground and because of the higher cost of maintenance than in the country districts. The general influence of the outlying districts, he felt, was better than that of the city. He favored the establishment of detention or observation wards similar to those in New York for the treatment of cases curable within a reasonable time and for cases in which careful study might offer better methods of treatment. Such quarters should accommodate from 200 to 300 patients and should be exceedingly elastic to prevent possibility of overcrowding. They should be well officered with eight or ten volunteers, and in addition men of experience and competent to teach the volunteers. Above these there should be a consulting or directing staff, composed of men of eminence. He would have the tuberculosis cases treated separately from those not tuberculous. He regarded the present unfortunate condition of the insane poor of Philadelphia largely the result of an increase in numbers, which had exceeded the growth of facilities, and said that it was difficult to impress on governing bodies who distribute the public funds the fact of the increase of numbers of the insane poor and the advances made in the treatment of insanity.

The question of hired help was also considered. Intelligent help would naturally work in those institutions in which the environment was in accord with their own individuality, and the city institution would probably receive what was left. The point to be realized by the medical profession was that law-making and appropriating bodies would give that which was desired if the matter were kept before them and the urgency shown. It was well to drive home to the people the necessity of such reforms and have their sympathy.

DR. F. X. DERGUM said that specific and practicable plans should be outlined, and believed that the psychopathic hospital which should take the place of detention wards was a necessity and a feasibility. The stigma of a commitment also by this means would be obviated. He would favor caring for the insane of the city at Norristown, where there are ample grounds for buildings; and, because of its ready access from Philadelphia, patients could be readily transferred from the psychopathic hospital. He expressed his hearty accord with the idea of convalescent wards and colonies if they be proven practicable. He thought all were painfully impressed with the difference in the care of the insane of Philadelphia and that of New York, and felt that it was largely dependent on the profession to make known the wants of the insane and to maintain the agitation until something definite shall be achieved. He realized the difficulty of securing the highest-class attendants at the almshouse, but thought it might be overcome by the establishment of training schools. He would favor the establishment of a training school for men similar to that in New York who would take charge of the male wards in the hospital and in the psychopathic department. The pupils should receive little or no pay and leave at the end of a definite time with a definite earning power. To get along with the no-restraint method there would be a larger number of attendants and better paid attendants required. He agreed with Dr. Coplin that the authorities would grant the improvements asked for by the medical profession.

DR. CHARLES W. BURR said that he knew of no new argu-

ment for a change of conditions at Blockley, that it was a perfectly well-known fact that the insane department of the Philadelphia Hospital and, indeed, of Blockley itself, was not an honor to the city of Philadelphia. It was also known, or ought to be known, that it was the fault of no one but the citizens of Philadelphia. They were blameworthy, first, because they do not like to spend money, and, second, because until very recently they were perfectly willing to be robbed, so long as the money was not taken out of their individual pockets. The one way to straighten out the difficulty was to take the care of the insane poor entirely out of the hands of the city. He favored the establishment of the psychopathic ward in which cases of acute mental disease could be taken at once.

DR. WILLIAM G. SPILLER said that no one could doubt the needs of Blockley, that until within the last few weeks patients had been sleeping on the floors. The subject which Dr. Coplin had brought before the public was not a new one. He recalled the hopefulness entertained by many of the staff for a few years previous when looking about for a site, which efforts, however, had fallen into the background, and it was not surprising that a pessimistic view had overtaken some. Personally he was delighted to know of the hopeful outlook held by Dr. Coplin. In listening to Dr. Peterson's paper he felt the difference existing between New York and Pennsylvania in the care of the insane. Reference was made to the high class of work done by Dr. Meyer on Ward's Island. He asked that Dr. Peterson would describe the non-restraint system. It had been his misfortune to have a patient jump out of a window; this, he felt, was also likely to occur among those slightly insane.

DR. WILLIAM PICKETT believed that the immense advance in New York State in the care of the insane was largely due to the fearless and energetic work of Dr. Peterson. During the ten years of Dr. Pickett's association with Blockley he had seen several plans developed, all of which had failed. The present movement he believed would succeed under the management of Dr. Coplin. He felt strongly that it was an ordinary commonsense proposition that Philadelphia should have an emergency ward for the insane. In 100 admissions to the insane wards he had found that thirty patients recovered in two months or less, twenty-four in six weeks or less and that about sixteen recovered within a month. All of the trouble, expense and stigma—if there be such—of a commitment could be thus saved by the emergency ward or hospital. Such a ward he believed in addition to lessening the number of chronic insane in the state hospitals, would diminish the tendency to recurrence of insanity, and above all, would save from an insane asylum many of the cases of puerperal insanity, and confusional insanity in terminal Bright's disease, pneumonia and other physical disorders. In such a psychopathic hospital there should be accommodations for at least 300 patients.

DR. ALFRED GORDON emphasized strongly the necessity of first instructing the general practitioner in the psychiatry. Should the hospital for the insane be removed from the city, he thought there would be removed the practical means of giving this instruction, and that the future general practitioner would know still less than is known at present of the science and treatment of insanity. He said that in France the study of insanity was made one of the branches in the general curriculum, and that there the general practitioner was able to talk with the laity in an intelligent manner if the necessity arose. He believed that the general hospitals should have a special or psychopathic ward for receiving patients who in the course of pneumonia or other infectious disease might develop delirium. Regarding the insane department of the hospital he would suggest that the staff of alienists take full charge of it, each member of which staff should give at least six months attendance. In addition to this a large number of resident physicians should be appointed. He would place the superintendency in the hands of a layman who would work under the absolute direction of the staff. The psychopathic ward should also be under the full charge of the staff of alienists, for cases even slightly confused at the beginning should be under the care of eminent men.

DR. HAWK thought that the state should have immediate care of the city insane. He said that those in charge at

Blockley were greatly handicapped by insufficient funds, and that for the more than 1,800 patients there was a totally inadequate number of physicians. The work of the internes as alienists he regarded as practically useless. At times 15 to 20 cases were admitted in a day. Only within the last month had the full quota of assistants been allowed by councils. Last year there had been paroled and discharged over 12 per cent. of the whole number of patients under treatment. In the majority discharged as recovered it was meant that they were possibly as well as they had been for some time prior. In 4 or 5 per cent. there was absolute recovery. The death rate had been 13 per cent. plus. This was due to the fact that many of the cases are of senile dementia with a large proportion between the ages of 70 and 100 years. Such cases had been transferred to the insane department because there was no other means to take care of them. Dr. Hawk thought the average for other cases would compare favorably with those of many of the New York asylums, and said that every endeavor had been made to keep the standard at Blockley high, but that the means had been entirely inadequate for the purposes desired.

Dr. A. R. MOULTON feared the idea would go out that the medical work at Blockley was not well done. He had, however, had opportunity for observing the work at Blockley and could say that the medical work in the insane department was most excellently done, and this was emphasized by the fact of the very large number of patients and the small number of medical attendants. He felt it a duty, as it was also a pleasure, to state that Dr. Hawk had done most excellent work in the Philadelphia Hospital.

Dr. WILLIAM S. WADSWORTH referred to the housing of the insane, pointing out that all could not be housed in the same manner; some could not be put into tents; the working insane should not be housed with the feeble bodied, nor the maniacal with those only temporarily insane. Tents were regarded as undesirable because of the difficulty of keeping them clean. He favored the use of pavilions with the buildings running north and south and placed sufficiently far apart that each would get the east and the west sunlight on the sides of the buildings. There should be connection with the main hospital and as well the ability to isolate any ward at a moment's notice.

The matter of occupation he regarded of extreme importance. There should be something for them to do which would abstract that moral and mental tension which was their destruction. Without a due regard to this element the subject was only partially covered. As medical men, he thought the profession was prone to think principally of the sick insane. There should be something to keep the patient from thinking of himself and so sitting in the darkness of their own minds.

Dr. PETERSON approved of Dr. Wadsworth's suggestions of occupation for the patients and said that the colony system included this. He thought the effort in Philadelphia should be to establish the psychopathic hospital in the city for emergency cases and then, as soon as possible get all the other insane into the country. He suggested that the passage of a law providing for the maintenance and equipment of such an institution on condition that Philadelphia furnish the land and erect the building might be helpful in the project. In New York such a law had been passed in securing their psychopathic hospital.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Arteriosclerosis.

Arteriosclerosis, according to Sir James Barr, in the *British Medical Journal*, is a disease which causes the death of more men in the prime of life and vigor of manhood than any other. The etiologic factors which enter into the cause of this disease are lead, alcohol, excessive nitrogenous foods, age, sex (being more common in men), physical strain, which is a potent factor

in causing high arterial tension and cardiac hypertrophy, leading to early degeneration, as shown in athletes and in laborers. Cold is also regarded by the author as an agent which raises the general blood pressure sufficiently high to produce general arteriosclerosis by long contraction of the superficial vessels and their vasa vasorum. Worry, anxiety and all forms of mental strain are also powerful factors in the production of this condition. He speaks of Americans as being more liable to this disease than natives of other countries, stating that at the age of 60 the majority of Americans are old. In the treatment of this disease the first and important thing to be considered is diet. Too much nitrogenous food should not be consumed. In this connection he refers to the work of Professor Chittenden on the physiologic economy in nutrition. Although he recommends diet of low proteid value for healthy adults and for those suffering from arteriosclerosis, for growing individuals whose tissues are not fully developed a more liberal allowance of nitrogenous substance should be given. Not only should the amount of food be considered, but the mastication should be slow and the food should be thoroughly divided. A good rule which is laid down in this respect is never to eat until you have an appetite, then to eat slowly, to masticate thoroughly, and never to eat to repletion. Exercise should be prescribed to suit the different individuals, according to age and physical development.

Regarding the administration of medicines, he makes the statement that there are two classes of drugs which he never, or very seldom, prescribes, namely, digestive agents and hypnotics, for if a man can not sleep or can not eat there is something wrong with him and he should be treated and not palliated. As in this condition the man eats too much, his digestion fails him, the insomnia depends on high blood pressure, consequently the cause in each instance must be removed rather than the symptoms treated.

The thyroid preparations are spoken of as very useful in the treatment of arteriosclerosis, as it has been shown that they dilate the arteries. Iodin is often more valuable than thyroid extract, as its metabolic effects are attained by a stimulating action on the thyroid gland. The author prefers the tincture of iodine and the syrup of iodine and tannic acid to the more stable iodids. Adrenalin is, as a rule, injurious in arteriosclerosis, but when combined with thyroid extract or iodine it occasionally does good by maintaining arterial tone and stimulating the heart.

THE CITRATES.

The citrates, according to A. E. Wright, have a decidedly decalcifying effect on the blood. At first they lessen the coagulability, but after prolonged use this is increased, and is due, according to Wright, to the fact that the citrates dissolve the lime salts out of the tissues.

THE BENZOATES.

The benzoates have been favored remedies with this writer, especially in that form of arteriosclerosis associated with kidney involvement. Uremic convulsions cease under their free administration, and they are said to convert uric acid into the more solid hippuric acid and to eliminate other purin bodies. Acting similarly to the salicylates, they have a cholagogue action.

THE SULPHATES.

The sulphate and the hyposulphite of sodium, sulphate of magnesium and numerous purgative mineral waters have a good effect in clearing out the intestinal tract and in lowering blood pressure.

THE CHLORIDS.

The chlorids should be limited, as they are depressor agents. Calcium chlorid should not be administered unless there be some definite indications for its use, such as a severe hemorrhage or cardiac failure. Sodium chlorid should only be taken by gouty individuals and in limited quantities. As to other depressor agents, the hippurates of ammonium and sodium are recommended. The nitrites are valuable agents in cases of emergencies, but their effects are too rapid to render them desirable for constant use.

Corneal Ulcers.

Lawson, in an abstract in the *Medical Press*, states that corneal ulcers may be relieved by the treatment with quinin,

especially those large ulcers involving the true cornea, and which are not very infectious; marginal ulcers, scalloped and ring ulcers; all infiltrating and infective ulcerations which are not undermining the edges; neuropathic ulcers. He does not recommend quinin in the treatment of the small superficial ulcers, which usually heal readily under simple and less irritating lotions. The form of quinin solution he recommends is the following combination:

| | | |
|---------------------------|--------|----|
| R. Quinine sulphatis..... | gr. iv | 20 |
| Aque dest. | 3i | 30 |

M. Sig.: The eye is to be thoroughly douched with the solution for five minutes by means of an ordinary eyebath, and repeated four or five times a day.

To the foregoing combination the least possible amount of dilute sulphuric acid should be added to dissolve the quinin salt. Atropin should be instilled twice a day and a bandage applied.

Treatment of Cystitis.

Dr. Howard A. Kelly, in the *Dominion Medical Monthly*, states that in the etiology of cystitis the important predisposing factors are localized congestion, traumatism, retention of urine, reduced health. The exciting causes are the various organisms which have been found in this condition. The clinical forms, according to the writer, are the catarrhal, desquamative, ulcerative, granular, papillary and bullous edema. In the treatment of this condition he states that three important factors should be considered: First, a carefully written analysis of the case, including a description of the appearances in the bladder; second, a well-defined course against the disease; third, great patience on the part of the physician and the patient. In the prophylactic treatment he speaks of not only thoroughly sterilizing the catheter before introducing it, but at the same time cleansing the internal meatus. Further, when there is reason to fear cystitis, and always when the catheter is used, it is well to use hexamethylenamin (urotropin) for a few days in from 5 to 10 grain doses three times a day as a prophylactic. He states that cystitis will rarely occur if this precaution be taken.

The systematic treatment includes medicines by the mouth, injections into the bladder, direct topical treatments of the vesicle walls and surgical treatment, including incision of the bladder. The patient should be put to bed, with complete quiet; the diet should be regulated, tonics administered, with the proper regulation of elimination by the bowels, and massage and baths. As to medicines by the mouth, he recommends large quantities of water. Hexamethylenamin (urotropin) in from 5 to 10 grain doses is of great value in the more recent cases, especially when there is a tendency to alkaline changes. When the urine is too acid, potassium citrate is of value. Boric acid is useful when it is desired to render the urine acid. The administration of the fluid extract of cornsilk (*Zea mays*) in teaspoonful doses will not infrequently have an ameliorating effect on the symptoms. Irrigation, however, is the most important means of treatment of this disease. The simple daily cleansing of the bladder is of exceeding benefit, and by this means he speaks of bringing some very rebellious cases to a successful end. He speaks of the surgical treatment of this disease as consisting of minor surgery in some cases, while major surgery must be resorted to in others.

Rheumatism.

The following combinations are recommended by the *Journal of Medicine and Science* for the local treatment of rheumatism:

| | | |
|---------------------------|----|----|
| R. Acidi salicylici | 3i | 4i |
| Lanolini | 3v | 20 |

M. Ft. unguentum. Sig.: Apply locally to the affected joint. Or:

| | | |
|-----------------------------|--------|-----|
| R. Extracti belladonnæ..... | gr. v | 30 |
| Acidi salicylici | | |
| Sodii salicylatis, aa..... | gr. xx | 120 |
| Lanolini | 3iv | 15 |

M. Ft. unguentum. Sig.: Apply locally. Or:

| | | |
|--------------------|--------|------|
| R. Ichthvoli | 3i | 4i |
| Lanolini | 3ii-vi | 8-24 |

M. Ft. unguentum. Sig.: Apply locally.

Medicolegal

Vermont View of Compounds Containing Alcohol.

The Supreme Court of Vermont says that, in the case of *State vs. Costa*, where the main question was whether the defendant kept a certain "malt extract" to sell for medicinal uses only, or whether he kept it to sell for use as a beverage, the trial court permitted the actual amount of alcohol and of the other ingredients of the extract to be shown, and properly did so, for the character of a liquid containing more than 1 per cent of alcohol may be such that its use as a beverage is impossible, as is the case with some virulent poisons. The mere fact that a liquid can be and is swallowed does not make it a beverage. So it must be said, in the case of extracts, tinctures, essences and compounds having a legitimate use for medicinal, culinary or toilet purposes, that the mere presence, as a solvent, preservative or otherwise, of more than the proportion of alcohol named in the statute, does not make the preparation one to which the statute applies. In respect to such articles the inquiry is not simply whether they contain more than 1 per cent. of alcohol, but there is the further inquiry whether or not the articles are sold to be used as a beverage. In respect to the sale of such preparations the intent governs. If there is no intent to sell these preparations for other than legitimate uses there is no offense. If, however, a preparation is capable of being used as a beverage, and is sold or kept for sale with the purpose, intent or understanding that it is to be used as a beverage, then, if it contains more than 1 per cent. of alcohol, an offense is committed.

Injurious Substances in Bottles—Fear of Death.

The Supreme Court of Georgia holds, in the case of *Watson vs. Augusta Brewing Company*, that a manufacturer who makes and bottles for public consumption a beverage represented to be harmless and refreshing is under a legal duty not negligently to allow a foreign substance which is injurious to the human stomach, such as bits of broken glass, to be present in a bottle of the beverage when it is placed on sale; and one who, relying on this obligation and without negligence on his own part, swallows several pieces of glass while drinking the beverage from a bottle, may recover from the manufacturer for injuries sustained in consequence. The court says that the case of *Blood Balm Co. vs. Cooper*, 83 Ga., 457, while differing somewhat as to its facts, furnishes strong reasons to support the principle announced. The composition of patent or proprietary medicines is usually shrouded in mystery, and it is generally understood that many such remedies contain ingredients which, if taken in sufficient quantities, will produce injurious results on the person taking them. If, then, one who buys a patent medicine may rely on the obligation of the manufacturer not to place therein ingredients which, if taken in the prescribed doses, will injure his health, certainly the purchaser of an alleged harmless and refreshing beverage should have the right to rest secure in the assumption that he will not be fed on broken glass. Moreover, the duty not negligently to injure is due by the manufacturer in a case of the particular character of the one under consideration, not merely to the dealer to whom he sells his product, but to the general public for whom his wares are intended.

A somewhat peculiar ground of demurrer, the court further says, was one advanced in this case which sought to place on the plaintiff the burden of showing "the size and kind of glass" that he swallowed. Courts have gone far in requiring particularity of pleading, but this court is not aware of any rule which would require a man who has unconsciously swallowed several pieces of glass to make a note of the shape, size, color and character of the pieces after they have been removed from his stomach, in order to describe them in bringing suit to recover from the one who is responsible for his having swallowed them.

On the question of whether or not the plaintiff in this case could recover for mental suffering growing out of his injury, and, if so, to what extent, the court says that it is a familiar principle that, where a physical injury has been sustained, the injured may recover for mental suffering caused by or growing out of his bodily hurt. One may not recover, however, for mental suffering which is not reasonable or which is merely fanciful. It can hardly be disputed that a reasonable fear of death constitutes mental suffering of a very keen sort. It is not unreasonable, this court thinks, for one who has swallowed several pieces of glass to entertain a very vivid and poignant apprehension of an untimely end, and the mental anguish caused by this dread may constitute an element of damage in a suit for damages on account of the physical injury. But after the glass has been removed from his stomach and he is apparently restored to his former condition of health and vigor, his fears, so far as a damage suit is concerned, should cease. He may not continue for an indefinite period to vex his soul with dread on account of having been "cut on the inside" and hold the defendant liable for his apprehensions.

Admissibility of Evidence of Experiments by Experts.

The Supreme Judicial Court of Massachusetts says that one of the questions claimed at the trial of the defendant in the homicide case of Commonwealth vs. Tucker to be material was whether the azygous vein of the victim was severed by the stab in the back, the commonwealth contending that it was and the defendant contending to the contrary. One witness, a medical expert, called by the defendant, on direct examination testified at first, in substance, that while it was barely possible that the vein was thus severed, yet it was highly improbable, and finally said that to him it seemed impossible. He was then asked whether he had made any experiments for the purpose of "ascertaining that opinion," and in reply he said that he had. He was further asked whether or not he had made experiments on a body approximating the size of the body of victim in this case described by him, and he said that he had. But, objection being made, he was not allowed to show the nature of the experiment. This, the court holds, was correct.

Whether the details of an experiment not otherwise material may be shown as having some bearing as substantive evidence on a question on trial, the court says, depends on the nature of the question and that of the experiment. If, for instance, the question be with reference to the operation, chemical or otherwise, of some natural force which acts uniformly under any given conditions, and the conditions under which the experiment is made are shown to be so similar to those which existed in the case on trial that the court can see that the experiment may be really of assistance to the jury, the details of the experiment may be put in as independent evidence. The true ground of admitting the details and result of such an experiment is that it may be of assistance, but the question whether it may be or whether it may or may not lead to too many collateral questions, is largely within the discretion of the court. It is manifest that in view of the nature of the question in dispute here, namely, whether the azygous vein was cut by the stab in the back, taken in connection with the difference necessarily existing between the conditions in the case on trial and those under which the experiment was performed and the obvious difficulty, if not impossibility, of ascertaining whether such difference had any material effect on the result, the court was fully justified in excluding the experiment or any inquiry into its nature.

It was argued, however, that inasmuch as an expert has the right to explain the reasons for his opinion, it was competent for the witness to state this experiment in detail, to fortify his opinion. But, the court says, it is settled in Massachusetts that the rule allowing an expert to give the reasons for his opinion has its limitations, and one of them is thus stated: "A party can not put in evidence incompetent facts under the guise of fortifying the opinion of his witness, even if the evidence might have been properly admitted on the cross-examination of the expert." The experiment in question being incompetent as substantive evidence, the court properly excluded all evidence as to its nature, even whether made on a dead or a living body, although offered under the guise of a reason for the opinion of the witness.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

February 10.

- 1 *Arteriosclerosis as a General Disease. A. Stengel, Philadelphia.
- 2 *Asthma. J. R. Arnell, Dever, Colo.
- 3 The Problem of Psychiatri in the Functional Psychoses. (Concluded.) E. Cowles, Boston.
- 4 *Treatment of Mediastinal Carcinoma with the Roentgen Rays. G. E. Pfahler, Philadelphia.
- 5 *Case of Cerebrospinal Meningitis. G. C. Merriman, Scranton, Pa.
- 6 Edibility of Animal Spleens. E. T. Williams, Boston.

1. Arteriosclerosis as a General Disease.—Stengel says that three stages of the disease may be recognized: 1. A preliminary one difficult of recognition in its beginnings and confusing to the clinician in his first efforts to distinguish what part the etiologic factors have contributed to the symptom-complex and what part has resulted from the arterial disease itself. 2. A middle period, during which the arterial disease is easy to recognize, but in which secondary organic changes have a rôle of variable importance. 3. A final stage of failure of circulation, organic failure and terminal infection. In the more advanced stages of arteriosclerosis the disease may be classified under the following headings: 1. The thoracic (a) cardiac or disturbances incident on special involvement of the coronary arteries; (b) aortic, referring not merely, to aneurism, but also to a sclerotic and calcareous roughening without dilatation but causing embarrassment of cardiac action. 2. Abdominal (a) renal, manifesting itself in the symptoms of chronic interstitial nephritis; (b) intestinal as evidenced by atrophy of the mucous membrane, tendency to chronic colitis, etc.; (c) pancreatic, difficult of recognition, often, however, active in diabetes; (d) hepatic, occurring as cirrhosis; (e) cerebrospinal—most numerous and varied; and (f) arterio-capillary, manifested in moderate circulatory disturbances.

2. Asthma.—Arnell reports six cases, illustrating a variety of causes and treatment. The pathology is summed up as follows: 1. A vulnerable mucous membrane. 2. Abnormally sensitive nerve centers. 3. An external irritant or exciting cause. 4. The presence in the body of known and unknown substances which are toxic to patients susceptible to asthma.

4. Roentgen Ray in Mediastina. Carcinoma.—Pfahler reports six cases in which carcinoma of the mediastinum developed secondary to carcinoma of the breast. All the patients had been operated on previously. Three of the six patients have apparently recovered, though they are still under observation. In none was any bad result noted.

5. Cerebrospinal Meningitis.—Merriman believes that the enormous percentage of mortality in pneumonia among children has been due, in many instances, to unrecognized meningitis. He says that in every case of acute lung involvement in children a careful examination should be made of the spine and neck and eyes. Pressure over the spine and at the base of the skull will bring out the tenderness in the cervical and dorsal regions. Examination of the eyes will sometimes, not always, show some inequality in the pupils, and the presence of photophobia.

Medical Record, New York.

February 10.

- 7 *New Method of Testing the Functions of the Digestive Apparatus. M. Einhorn, New York.
- 8 *What Is the Climacterium? S. W. Bandier, New York.
- 9 Pneumonia. H. B. Weaver, Asheville, N. C.
- 10 Modern Conception of Matter. W. D. Horne, Yonkers, N. Y.
- 11 Case of Tympanic and Mastoid Cholesteatoma; Extradural Abscess; Sinus Thrombosis. D. M. Barstow, New York.
- 12 *Notes on the Cerebrospinal Fluid. N. A. Pashayan, Kings Park, N. Y.
- 13 *Surgical Rings. H. A. Shaw, Seattle, Wash.

7. New Method of Testing Functions of Digestive Apparatus.—Einhorn attaches solid foodstuffs to glass or porcelain beads, by drawing them through the opening in the bead and tying them on with silk thread. Examination of the beads found in the feces will reveal the indigestible substances, while those which are digestible will have disappeared during their course

through the gastrointestinal tract. In order to test the work of the stomach alone, a thread is attached to the beads, which are placed in a gelatin capsule. At the end of from four to six hours the beads are withdrawn. By these two methods both the digestion in the stomach and in the bowel may be judged. Einhorn sums up the results of his experiments as follows: In healthy individuals catgut and fishbones are digested in the stomach, whereas boiled or raw meat (beef), raw chicken skin, and raw as well as boiled potatoes, do not disappear altogether in this organ. The muscles show a swelling and loosening of the fibers. Raw muscle fiber and chicken skin disappear in the intestines; tendons remain undigested. Raw potatoes show a varying condition, sometimes disappearing entirely, sometimes going through unchanged. Boiled potato usually seems to be digested in the bowel, but the skin of the potato, raw or boiled, remains unchanged. Fats with a very high melting point, such as lard, are not absorbed in the intestine; suet and mutton fat are digested in the bowel. Fishbone is not changed in the intestinal tract. If the intestinal functions are normal, albumin (raw meat), and starch (potato), boiled two minutes, and mutton fat will disappear during their passage through the digestive tract. Disturbances of these functions may be recognized by the reappearance of food substances attached to the beads. Raw thymus has been used to test the pancreatic function. When the intestinal and pancreatic functions are intact, the thymus will disappear.

8. What Is the Climacterium?—Bandler states that although the menopause is generally considered an essential evidence of the climacterium, this is not true. Another erroneous but common view is that after hysterectomy the annoying symptoms of the climacterium are absent if the ovaries be left behind. In point of fact, annoyances of the same nature, often combined with scanty menstruation and with the other evidences of ovarian insufficiency, are often seen in women who have not been operated on, in women at the menopause, or during the climacterium, and even in women who are not near the menopause age. Bandler thinks that we are justified in considering the relative oversecretion of the thyroid in these patients as the pathologic basis, and the probabilities are that ovarian insufficiency means relative hyperthyroidism. The symptoms of diminished ovarian secretion and those of hyperthyroidism are enough alike to warrant the opinion that they are one and the same.

12. Notes on Cerebrospinal Fluid.—Pashayan has made a cytologic examination of the spinal fluid in a number of patients, with the object of determining the constancy lymphocytosis in the cerebrospinal fluid in paresis as well as in other mental affections. Among 37 cases of general paresis a marked increase of lymphocytes was seen in 16, a moderate increase in 5; the results were doubtful in 3, and negative in 3. Lymphocytosis was absent in 7 chronic alcoholics, in 6 old syphilitics, in 25 epileptics, in 13 hebephrenics, in 8 katatonics, in 7 maniac-depressive cases, and in 7 paranoiac states.

13. Surgical Rings.—The object of Shaw's device is to enable the operator to use his fingers instead of forceps, needleholders, etc. The device consists of a pair of steel rings with a small segment cut out on the inner (middle finger) side, and a denticulated plate on the outer side (thumb side). These rings fit on the second phalanx of the index finger of each hand. The first and most important use of the ring is in tying sutures and ligatures. In this case the main advantages are that it is ready for instant use and does not weaken the suture or ligature material, as forceps do, and also avoids cutting of the fingers and consequent infection. It enables the operator to separate adhesions with the fingers, without the aid of forceps, gauze, etc., with the least amount of injury to the tissues, and is especially valuable in separating the hernial sac from the cord, and in varicocele. In grasping and retaining tissues, it is much handier and produces less injury than tissue forceps. In the manipulation of the needle it is valuable both as a holder and as a guide in directing the point of the needle among important structures. Lastly, it enables the operator to handle, with ease, slippery viscera, as the intestines.

New York Medical Journal.

February 10.

- 14 *Case of Cerebrospinal Meningitis Indicating that It May Be of a Contagious Nature. H. A. Hare, Philadelphia.
- 15 Should Education on Sexual Matters Be Offered to Youth. E. L. Keyes, New York.
- 16 *Education in Sexual Subjects. F. C. Valentine, New York.
- 17 Dietetic Treatment of Chronic Diarrheas. M. Elshorn, New York.
- 18 *Surgery of the Thyroid Gland. M. Ballin, Detroit, Mich.
- 19 Displeasing Results of the Mastoid Operation. J. A. Stucky, Lexington, Ky.
- 20 Contribution to Our Knowledge of the Polioencephalitis Superior (Werneck Type). J. R. Hunt, New York.
- 21 Sanatorium Treatment of Pulmonary Tuberculosis, with Brief Description of Work and Results at the State Sanatorium, Ray Brook, N. Y. M. P. Burnham, Ray Brook, N. Y.
- 22 Early Diagnosis of Gastric Carcinoma. H. Weinstein, New York.

14. Contagiousness of Cerebrospinal Meningitis.—Hare cites a case of cerebrospinal meningitis of unusual severity. In less than thirty-six hours the patient received over 25,000 units of diphtheria antitoxin. The patient died of circulatory and respiratory failure about forty-four hours after the beginning of his illness. Two days afterward Hare was called to see the physician who had day charge of this patient. He found him with slightly injected conjunctivæ and suffering from a condition of discomfort in the back and legs, which did not, however, amount to pain. No rigidity was present in any part of the body. On the evening of the same day this second patient was unconscious and in violent convulsions, accompanied by attempts to vomit which were prevented by the tightly clenched jaws. The Kernig sign was present, the hands were clenched with the thumbs in at the palms, the head was rotated sharply to the right, and there was also a conjugate deviation of the eyes, to the right, with fixation of the eyeballs. The physician died about eight hours after the development of distinct meningeal symptoms and nineteen hours after his first symptoms developed. Hare considers these two cases of interest not only because of their violence, but also because it seemed that the infection was transferred directly from the first case to the second. Another point of interest is that the first patient had visited four days previous to his illness in two cities which at that time were the seat of an epidemic of cerebrospinal meningitis. Still another point of interest is that a medical student who helped take care of the patient developed a violent tonsillitis, with fever and pain throughout the body. Hare himself suffered from a chill, fever of 102, and severe aching in the neck, back and limbs four days after seeing the first patient and within twelve hours of seeing the second one.

16. Education in Sexual Subjects.—Valentine summarizes his paper as follows:

1. Sexual physiology and hygiene need not be formally taught girls, save in the exceptional instances in which the genic impulse is prematurely developed.
2. Sexual physiology and hygiene should be taught every boy, when mental and sexual puberty make him capable of beneficially utilizing the knowledge.
3. The nature and scope of instruction on sexual subjects should be regulated according to each pupil's ability properly to appreciate the warnings inseparable therefrom.
4. The age at which a person may safely be instructed in sexual subjects is that age at which, in each individual case, such instruction becomes necessary for the purposes of moral and physical prophylaxis.
5. The individuality of the parent, physician or teacher should be the guide to the choice of one or the other as the exponent of the facts.
6. Educational institutions may be utilized for instruction in sexual subjects, but such instruction must be given to small groups of pupils selected because of their mental parity as nearly as may be.
7. Text-books on elementary hygiene should not contain chapters on sexual physiology. Those charged with imparting instruction on sexual subjects should be provided with separately printed chapters on the physiology and hygiene of these matters. These separately printed chapters could then be given with the greatest discretion to such pupils only whose mental development would preclude their misusing the information derived therefrom.
18. Surgery of the Thyroid.—Ballin's experience is limited to 6 cases. He considers that 3 patients are cured, 2 very much improved, and one slightly improved. All these cases were very bad ones, with pulse over 140, severe nervous symptoms and intestinal disturbances. In each of these 6 cases he did a thyroidectomy, removing half or more of the diseased gland. He believes that this should be the operation of choice, if internal treatment fails.

Boston Medical and Surgical Journal.

February 8.

- 23 *The Problem of Psychiatry in the Functional Psychoses. (Continued.) E. Cowles, Boston.
- 24 *Vaginapexy. W. P. Graves, Boston.
- 25 Contractile Processes in the Lung as a Result of Phthisis, with Reference Especially to Their Production of Permanent Dextrocardia. H. B. Duham, Rutland, Mass.

23.—This article appeared elsewhere.

24. Vaginapexy.—This operation, which is used in cases of extreme vaginal relaxation, such as prolapse, incomplete and complete procidentia and advanced cystocele, is described by Graves (the operation was devised by W. H. Baker) as follows: The patient is placed in the Trendelenburg position and a small median abdominal incision is made. The intestines are packed away with gauze in order thoroughly to expose the posterior cul-de-sac. Beginning first on the right side, a point is selected a little posterior and external to the peritoneal reflexion of the posterior cul-de-sac from the wall of the uterus. This point is then seized with the bullet forceps, the forceps being carried deep enough in order actually to seize the wall of the vault of the vagina. In order to ascertain whether or not the wall of the vagina is included within the teeth of the bullet forceps it is a safe plan to have an assistant insert his finger in the vagina so that he can give information as to whether the vagina is really being drawn up by the traction of the bullet forceps. When it is found that the vagina is firmly grasped, a silk suture, preferably No. 10 braided silk, is passed through the tissue to take the place of the bullet forceps. The suture is then passed up through the peritoneum, rectus muscle and fascia of the abdominal wall about one-half to three-quarters of an inch from the incision. It is then passed back again into the abdominal cavity and included with the other end of the suture in a pair of snaps. The same procedure is then carried out on the left side and the two sutures tied, drawing the vagina firmly up to the anterior abdominal wall and completely anteverting the uterus, the knots being thus left within the abdominal cavity. The abdominal incision is then closed with great care, in layers. In passing the suture through the floor of Douglas' pouch Graves has found it advantageous to employ the stitch devised by Max Broedel for the suspension of prolapsed kidneys, as it gives far greater tensile strength. It is necessary, however, to avoid carrying the suture through into the vaginal cavity.

Lancet-Clinic, Cincinnati, Ohio.

February 10.

- 26 Diagnosis of Some Painful Affections of the Feet. C. R. McClure, Cincinnati.
- 27 A Few Ethical Thoughts. G. B. Orr, Cincinnati.
- 28 Contract Practice for Liability Insurance Companies. R. P. Tate, Cincinnati.
- 29 Experiences with the X-Ray in the Treatment of Malignant Tumors. A. M. Hayden, Evansville, Ind.

Cleveland Medical Journal.

January.

- 30 Paris Congress of Tuberculosis, 1905. J. H. Lowman, Cleveland.
- 31 *Two Unusual Complications of Labor. F. S. Clark, Cleveland.

31. Unusual Complications of Labor.—In the first patient mentioned by Clark, the lower portion of the vagina was entirely separated from the upper by a transverse membrane. The anterior attachment of the membrane was about one and a half inches and the posterior about two and a half inches from the vulva. Pressure against the membrane showed it to be firm, except at one point toward the left side, which yielded slightly. The color of the membrane was the same as that of the vaginal mucosa. Its thickness was about that of ordinary blotting paper. The second case was one of congenital displacement of the urinary bladder. The cavity of the pelvis was well filled with what appeared to be a cystic tumor attached to the left pelvic wall. The tumor disappeared on catheterizing. The catheter had to be passed upward, inward, to the left and then downward before the urine would escape.

Medicine, Detroit, Mich.

January.

- 32 Hepatic Therapeutics. H. Richardson, Baltimore.
- 33 *Economic Aspect of the Modern Treatment of Tuberculosis. J. W. Pettit, Ottawa, Ill.
- 34 *Fractured Femur Treated by the Ambulatory Method. R. S. Dubs, Chicago.
- 35 Scopalamine and Morphine Anesthesia in Ophthalmic Surgery. G. F. Suker, Chicago.

- 36 *Diagnosis of Neurasthenia. F. X. Dercum, Philadelphia.
- 37 *Early Arrest of Infection. E. Laplace, Philadelphia.
- 38 Study of Tropical Medicine; Its Aim, Its Method and Its Scope. E. C. Wellman, Benguela, E. Africa.
- 39 Idea for the More Rational Use of Diphtheria Antitoxin. B. F. Royer, Philadelphia.
- 40 Masturbation Among Women. W. L. Howard, Baltimore.

33.—See abstract in THE JOURNAL, Dec. 16, 1905, page 1899.

34. Fracture of Femur.—Dubs reports a case of oblique fracture of the middle third of the femur in which there was a marked tendency to shortening. The ambulatory method of treatment was chosen. At the end of two weeks and five days the patient was allowed to get up and walk about with crutches, elastic traction being still applied. At the end of four weeks and five days traction was dispensed with. Five weeks and two days after the accident the patient was allowed to discard the crutches most of the time. Eight weeks after the accident the splint was removed altogether. Skiagrams taken one year after the date of the fracture show a perfect union and no deformity of bone.

36.—See abstract in THE JOURNAL, Dec. 16, 1905, page 1901.

37. Early Arrest in Infection.—Laplace states that the problem to be solved is the removal, so far as possible, of all the organisms which have entered the lymph vessels and are already beyond the reach of an antiseptic. Laplace accomplishes this by a squeezing or milking process of the wound. The parts around the wound are pressed on and a certain amount of serum exudes. This serum contains the staphylococcus and streptococcus, even after the wound has been squeezed four or five times, showing that the organisms invaded the lymphatics. When the hemorrhage stops, Laplace cauterizes the wound with pure carbolic acid. This causes a fresh hemorrhage. Further squeezing facilitates the flow of blood, and also increases the subsequent flow of serum or lymph. A dry dressing completes the treatment. If the case presents evidence of a marked and spreading infection, Laplace also scarifies the reddened area in addition to the procedures just mentioned. When the lymph channels are thoroughly emptied an ice-cold antiseptic solution is applied to the parts for the purpose of giving direct entrance of the antiseptic into the affected lymph channels laid open by the scarification, in this way destroying the germs which may linger within the lymphatics. The solution used consists of one part of bichlorid of mercury to five parts of hydrochloric acid and 1,000 parts of water. Should pain result from this application the solution is made weaker. Internally, Laplace administers from 10 to 20 drops of tincture of chlorid of iron. He has followed this method of treatment in the case of minor wounds, such as infective cuts, scratches, excoriations, infected pimples, and erythema from starting erysipels, for a number of years, and has always succeeded in checking the infection.

Wisconsin Medical Journal, Milwaukee.

January.

- 41 *Diagnostic Value of Cystoscopic Examinations. W. A. Gordon, Jr., Oshkosh, Wis.
- 42 *Pathology and Non-Surgical Treatment of Injuries to the Stomach. W. Becker, Milwaukee.
- 43 When and How to Begin Substitute Feeding. L. Boorse, Milwaukee.
- 44 *Case of Malformation of the Duodenum. C. J. Habbegger, Watertown, Wis.

41.—See abstract in THE JOURNAL, July 1, 1905, page 67.

42. Id.

44. Malformation of Duodenum.—The malformation reported by Habbegger occurred in a newborn infant that lived about five days. On the lesser curvature of the stomach there was a deep furrow which divided the organ into two parts, and which, if a little more marked, would have produced the anomaly known as the hour-glass stomach. Just below the pylorus, which was normal, the stomach emptied into a cul-de-sac about the size of an orange which had no communication with the rest of the intestinal tract. This cul-de-sac was lined by a mucosa which differed from that of the stomach and corresponded with that of the duodenum. That part of the intestinal tract corresponding to the descending portion of the duodenum commenced in a narrow part as a continuation of the common duct. Clinically the condition present was identical with pyloric stenosis.

Therapeutic Gazette, Detroit, Mich.

January 15.

- 45 *Value of Ergot in Obstetrics. E. P. Davis, B. C. Hirst, J. C. Cameron and others.
 46 Methods for Diagnosing Diseases of the Stomach. J. Sailer, Philadelphia.
 47 Hyperesthesia of the Gastric Mucous Membrane and Its Treatment. J. D. Steele, Philadelphia.
 48 Surgical Aspects of Gastric Dyspepsia. J. B. Deaver, Philadelphia.
 49 Subcutaneous Injection of Paraffin for Nasal and Other Deformities, and the Subcutaneous Injection for Atrophic Rhinitis. A. B. Kirkpatrick, Philadelphia.

45. Value of Ergot in Obstetrics.—Davis states that he is accustomed to use ergot in some form in the great majority of cases of labor. The only contraindication to its employment is excessive hemorrhage with a depleted condition of the vessels and a feeble heart. Strychnia is given with the ergot, because it rouses the ganglia of the uterus and stimulates the patient's nervous system. Davis never gives more than two drams of ergot by mouth at one time. He has never witnessed any untoward results from the use of ergot. Hirst uses ergot as a routine practice in all cases of labor as soon as the child is born. A very irritable stomach and persistent vomiting are contraindications to its use, but even in these cases, after the labor is over, Hirst has succeeded in having the ergot retained. If it has been necessary to anesthetize the patient he gives a deep hypodermic injection of ergot into the thigh as soon as the uterus is evacuated. In the case of twins, he has been in the habit of giving a dram of ergot by mouth after the birth of the first child, if there is nothing about the condition of the second child to obstruct labor. Cameron uses ergot in all cases of labor, unless specially contraindicated, after the uterus is emptied. He has never seen any untoward effects or accidents attributable to the use of ergot.

Ohio State Medical Journal, Columbus.

January.

- 50 Surgical Treatment of Gastric Ulcer. W. D. Haines, Cincinnati.
 51 Catarrh of the Stomach. J. D. Dunham, Columbus.
 52 Maximum Deformity of the Arm with Perfect Function. J. C. Reeve, Jr., Dayton.
 53 *Commercial Therapeutics. C. Lony, Toledo.
 54 *Fructus Anil. E. A. Hamilton, Columbus.
 55 *Scopolamin-Morphin Ethyl-Ether Anesthesia. R. A. Rice, Columbus.
 56 Benefits of Medical Organization. W. B. Hodges, Delaware.
 57 Typhoid Fever, Etiology and Pathologic Anatomy. H. Blankenhorn, Orville.
 58 Acute Suppurative Ostitomyelitis as It Concerns the General Practitioner. D. S. Olmstead, Millersburg.

53. Commercial Therapeutics.—Luoy says that when physicians prescribe a preparation which is said to contain certain drugs, without knowing the exact amount of each constituent to the dose or their physiologic action, they are pursuing a course which disregards every teaching prescribed by a reputable medical school. They can not know whether new symptoms, if they should arise, are due to the medicine or to the original condition of the patient. They are in absolute darkness so far as the interest of the patient is concerned. If dangerous symptoms follow such treatment they may be misled in their efforts to control them. The great mass of testimonials which laud many preparations so highly are born of ignorance and the evident desire of the author to see his name in print. Mushroom drug manufacturers, without a grain of medical knowledge, are springing up on every side with wonderful cures for diseases which heretofore have been hopeless cases. Luoy says that a most unfortunate feature of this situation is that some reputable medical journals are advertising this rot to the medical profession. If the profession did not support the manufacturers of this material the manufacturers would not continue in business. Luoy asserts that the tendency of the present, so far as medical therapeutics is concerned, is decidedly non-progressive. If physicians wish to remain true to the interests of their patients, to the profession and to themselves, they will refuse absolutely to prescribe any preparation which is not accompanied by a complete formula of its contents, as well as the amount of each constituent in a given quantity.

55. Scopolamin-Morphin Ethyl-Ether Anesthesia.—By carefully investigating the effects of scopolamin-morphin ethyl-ether anesthesia on 150 patients, before and after operation,

from the head nurse in charge, from the patients themselves, and by personal observation, Rice found it a very valuable addition to his method of anesthesia, which is as follows: About half an hour before the operation the patient is given 1/100 gr. scopolamin and 1/6 gr. morphin hypodermically. The general anesthesia is begun with bromid of ethyl, which he has used in from 2,000 to 3,000 cases. He always uses the drop method on the Esmarch mask until the air passages become accustomed to the slight irritation; then, when the patient has become unconscious, he pours on the mask about half a dram of the bromid of ethyl and at once covers the mask with gauze or a folded towel. The patient, after a deep inspiration or two, begins to relax, and after two or three more, Rice changes the mask for the ether cone, and in nearly every case, unless an unusually robust man, the patient passes from the ethyl anesthesia to that of the ether without a struggle. In 150 consecutive cases in which he used the scopolamin and morphin, fully 75 per cent. of the patients were scarcely nauseated; about 20 per cent. vomited a dram or two of mucus, and about 5 per cent. vomited freely, this in many instances being doubtless due to an irritable condition of the stomach before the anesthesia.

Ophthalmic Record, Chicago.

January.

- 59 Two Splinters of Steel Removed from the Interior of an Eye with the Magnet. W. R. Murray, Minneapolis.
 60 A Lachrymal Syringe. W. H. Wilder, Chicago.
 61 Cataract Caused by a Discharge of Industrial Electricity. E. C. Elliott, Memphis, Tenn.
 62 *New Treatment for Trachoma. J. A. Pratt, Aurora, Ill.
 63 A New Trial Case. M. D. Stevenson, Akron, Ohio.
 64 Complete Absorption of a Pannus Trachomatousus Brought About by Typhoid Fever. F. C. Todd, Minneapolis.

62. Treatment of Trachoma.—The treatment employed by Pratt consists in thoroughly massaging the everted lids with boric acid powder. The massage pressure is made by a cotton-wound probe. The partially dissolved powder is allowed to remain under the lids. The eye is bandaged and cold applications are applied. This treatment is repeated after three days and is continued until there is no further evidence of the disease. No scars result and the treatment has been entirely satisfactory to Pratt in about twenty cases in which it was employed.

Archives of Pediatrics, New York.

January.

- 65 *Unusual Case of Tuberculosis in an Infant. C. W. Townsend, Boston.
 66 Plea for a More Prominent Position of Glandular Fever Among Infectious Diseases. A. E. Vipond, Montreal.
 67 Typhoid Fever in Children. L. C. Ager, New York.
 68 Case of Tumor of Cerebellum with Necropsy. C. F. Judson, and C. D. Camp, Philadelphia.

65. Unusual Case of Tuberculosis.—The patient, whose case is reported by Townsend, was the second child of exceptionally healthy parents. The family history was good. The only cases of consumption in the family were remote and occurred in collaterals. The food of the child was breast milk for the first seven months, at the end of which cow's milk, modified with cereal water, was given. This milk was of the best, coming from cows that were frequently tested for tuberculosis and whose milk was used especially for infants. The infant received no other food. At the age of nine months the child was suddenly taken sick with fever and vomiting. The fever continued for over two months and ended in death. During all this time nothing was found on physical examination, except a slight otitis media of one ear. The drum was punctured and a thin serous fluid escaped. Several times in the course of the disease the ears were examined, but nothing abnormal was found, so that otitis as a cause of the fever was ruled out. In this way several other causes of fever were eliminated. The fever varied irregularly from 100 to 104 F. and was often higher in the morning than at night. On several occasions it became normal and once or twice it was subnormal. The general course of the fever was lower during the last two weeks of the disease. At the end, however, it mounted rapidly above 106 F. The infant's digestion was good during nearly the whole course of the disease. During the last month, however, vomiting and disinclination to take food became prominent features. Bile was often vomited. There appeared to be no

evidence of intestinal or of gastric indigestion, or of accumulation from pyloric stricture, and it was believed that the vomiting was reflex from the fever. Thorough evacuations with calomel had no effect on the fever. The autopsy showed extensive tuberculosis throughout the peritoneal cavity.

Indiana Medical Journal, Indianapolis.

January.

- 69 *Observations of Tuberculosis Sanatoria in the West. T. Potter, Indianapolis.
70 *The Cigarette; Its Relation to Mental and Nervous Diseases. W. B. Fletcher, Indianapolis.

69. **The Tuberculosis Sanatorium.**—Potter, secretary of the Indiana state tuberculosis commission, presents the following conclusions arrived at by the committee as to the institutional treatment of tuberculosis: First, the sanatorium plan has decided advantages over any other for most cases. Second, this plan of treatment does not require very expensive buildings nor an elaborate plant, provided the chief purposes of the plan are kept in view. Third, the method and skill of the management are of more importance than the material equipment. It is the men behind the guns who contribute most to success. Fourth, the great majority of the patients easily, cheerfully and quickly fall into line with the regulations and life of a well-managed sanatorium, just as do the great majority of students in an educational institution. Fifth, a notable spirit of cheerfulness and hopefulness prevails in a well-managed sanatorium. Sixth, in a large proportion, about 70 per cent., of cases of early pulmonary tuberculosis, the disease may be arrested and the patients returned to useful activity by this plan of treatment, intelligently and faithfully carried out. Seventh, it was the universally expressed belief by the medical officers of western sanatoriums visited by the commission that, at least approximately, good results could be obtained by a similar plan of treatment in any climate. Eighth, the committee was everywhere impressed by the emphasis put on the educational value of these sanatoriums in the crusade against tuberculosis. Ninth, everywhere and always in these institutions tuberculosis is emphasized as being an infectious disease. The most stringent precautions, therefore, are taken against the spread of this infection. These measures, very simple and easily practicable when understood, practically insure against danger. It has come about, therefore, that one of the places of greatest safety against tuberculous infection, among the habitations of men, is the sanatorium for the treatment of this dread disease. All the inmates evidently feel so, because they make it so.

- 70.—See abstract in THE JOURNAL, Nov. 4, 1905, page 1436.

Columbus Medical Journal.

January.

- 71 County Society. J. C. Larkin, Hillsboro, Ohio.
Journal of Nervous and Mental Disease, New York.
January.
72 *Two Unusual Tumors of Brain. H. C. Gordinier and H. W. Carey, Troy, N. Y.
73 *The Association of Epilepsy with Muscular Conditions Fitting Best into the Cadre of the Myopathies. A. Onuf, Sonyea, N. Y.
74 Multifrom Tic Including Automatic Speech and Purposive Movements. M. Prince, Boston.

72. **Two Unusual Brain Tumors.**—The first case reported by Gordinier and Carey was a multiple cylindroma of the base of the brain, involving the second, third, fourth and eighth cranial nerves, and producing symptoms closely simulating a tumor of the quadrigeminal bodies. Death resulted from exhaustion. The second case was a neuroepithelioma of the choroid plexus of the fourth ventricle, growing dorsally and producing symptoms characteristic of a tumor of the medium lobe of the cerebellum. There was no history of having received an injury to the head.

73. **Epilepsy and Myopathies.**—Onuf reports 6 cases of epilepsy in which the patients presented partly muscular atrophies, partly defective muscular action without clearly demonstrable atrophy, but with definite distribution of these disturbances, manifested, on the whole, as follows: Wing-like standing off of the scapulae, due, apparently, chiefly to weakness of the trapezius, possibly also of the serratus magnus, rhomboides, and levator anguli scapulae muscles; atrophies of

the scapular muscles in a strict sense, namely, the infraspinatus and the supraspinatus; also occasionally of the deltoids and other muscles of the shoulder joints; lordosis of lumbar spine in erect position, disappearing in sitting position, a phenomenon clearly explained by Gowers in "pseudo-muscular hypertrophy" as due to weakness of the extensors of the hip, causing an inclination of the pelvis forward and compensatory bending backward to the body; pes valgus; involvement of the facial muscles (2 cases only); electrical changes manifested most frequently by a reversal of the galvanic formula, particularly in the deltoid muscles; fibrillary twitchings (2 cases). This muscular symptom-complex was not present in all cases alike nor in the same degree. In some cases the lordosis was chiefly developed, in others the wing scapulae; and the flatfoot was present in all cases but one; the facial involvement was found in only 2. Qualitative galvanic changes were found in at least 4 cases; fibrillary twitchings in 2. Onuf states that the distribution of the muscular disturbances conforms best with that of the myopathies, but the presence of qualitative electrical changes (reversal of the galvanic formula) found in at least 4 cases, and the presence in 2 cases of fibrillary twitchings, speak rather against it. Of interest is the association of the malady with epilepsy—an association which Onuf has not found mentioned in any of the familiar text-books on nervous diseases. The interesting question arises whether or not a case of epilepsy thus complicated can be called idiopathic.

Northwest Medicine, Seattle, Wash.

January.

- 75 Early Diagnosis of Tuberculous Disease of Tonsils, Pharynx and Larynx. J. A. M. Hemmon, Seattle, Washington.
76 Early Diagnosis of Tuberculosis of Bones and Joints. P. W. Willis, Seattle, Wash.
77 Early Diagnosis of Tuberculosis of the Peritoneum and Female Genitalia. W. M. Karsbner, Puyallup, Wash.
78 *Early Diagnosis of Tuberculosis of the Urinary Tract and Male Genital Organs. G. W. Hawley, Seattle, Wash.
79 *Acute Atypical Pulmonary Tuberculosis. S. H. Johnson, Bellingham, Wash.
80 Tuberculin as a Diagnostic Agent. W. R. M. Kellogg, Seattle, Wash.

78. Tuberculosis of Urinary Tract and Male Genital Organs.

—Hawley suggests the following rules: 1. In all cases of hematuria (especially transient hematurias of doubtful cause), always bear in mind the possibility of tuberculosis. 2. Every cystitis, not due to the gonococcus or infection from without, should be considered suspicious of tuberculosis and be subject to careful observation. 3. In all suspected cases the patients should be subjected to thorough and repeated examinations. 4. Until a positive, simple method is at hand for identifying the tubercle bacilli in the urine we are not warranted in claiming their presence, except when found in large numbers, unless we have taken steps to procure a urine free from smegma bacilli. 5. In all suspicious cases evidence of tuberculous lesions in other parts of the body should be sought. 6. When the slightest doubt remains concerning any case the tuberculin test should be used. 7. A diagnosis is never complete until the source of infection has been traced.

79. **Acute Typical Pulmonary Tuberculosis.**—The previous history of Johnson's patient shows that she had suffered from the ordinary diseases incident to childhood. While returning home from a party she became wet and contracted what she thought was a severe cold. For two weeks following she suffered from shortness of breath on much exertion, loss of appetite, general depression, and pain over her left side, not localized. Her temperature was 98 F.; pulse 110 and feeble; respiration was rather hurried; there was no cough and no expectoration; moderate dyspnea; slight cyanosis. On auscultation no râles were detected, and percussion revealed no areas of dullness. The tongue was slightly coated, bowels regular, urine normal. The pain complained of over the left side of the chest, and which at times extended down the anterior part of the left thigh, was diagnosed as neuralgia of the intercostal and anterior crural nerves. The patient was put on a tonic treatment and advised to take a vacation of a month, which she did. During this time her physical condition was carefully studied, inasmuch as no positive diagnosis had yet been made. At the end of a month she was sent to the hospital.

By this time the symptoms were nearly all aggravated. A thorough physical examination revealed nothing more abnormal and the case remained undiagnosed. After diligent search for the tubercle bacilli the results were negative. Seven weeks after her admission to the hospital a third microscopic examination of the sputum revealed an enormous number of tubercle bacilli and a diagnosis was made of acute pulmonary tuberculosis.

Western Medical Review, Lincoln, Neb.

January.

- 81 *Trypanosomes and Disease. H. B. Ward, Lincoln.
- 82 *Variations from Routine Necessary in Some Operations for Inguinal Hernia. J. P. Lord, Omaha.
- 83 Acute Endocarditis; its Etiology and Symptomatology. C. W. M. Foynter, Lincoln.
- 84 *Four Years of Experience with Scopolamin-Morphin as a General Anesthetic. B. J. F. Getzlaff, Sutton.

81. **Trypanosomes and Disease.**—Ward reviews what is known as trypanosomes, and points out their relationship to disease in the human species. Speaking of the *Spirochata pallida*, he says that it would be natural to expect that this group of flagellates, which contains so many disease-producing organisms that attack lower animals, should yet furnish the explanation of the etiology of human diseases hitherto unexplained. In maladies which are evidently of germ production, it is more likely that the cause is to be found among the unstudied protozoa rather than that the refined technic of the modern bacteriologist has been unsuccessful in detecting the plant germ which produces it.

82. **Variations in Hernia Operations.**—Lord considers that the Bassini operation for inguinal hernia occupies first place, because it has stood the test of time. In exceptional cases, however, he thinks that the newer methods are to be preferred because departure from routine methods is necessary in some cases of inguinal hernia.

84. **Scopolamin-Morphin Anesthesia.**—For four years Getzlaff has employed this method of producing anesthesia, following the suggestions of Korff. He says he has yet to see the first case of headache, vomiting, disturbed digestion, retention of urine, and especially intestinal paresis, after abdominal operations, although occasionally, in very choleric patients and after insufficient preoperative preparations, a peculiar muddy discoloration of the skin and a not very agreeable so-called bilious smell emanating from the patient but soon passing off, has been observed by him. The ages of his patients ranged from 10 to 80 years, and the number operated on is over 90, with only one death, which occurred twelve weeks after the operation from other causes. His series includes about 40 abdominal sections.

Physician and Surgeon, Detroit and Ann Arbor, Mich. November.

- 85 Review of the Life of Ludwig. W. P. Lombard, Ann Arbor.
- 86 Cases of Heart Disease. G. H. Cattermole, Boulder, Colo.
- 87 Renal Calculus. C. G. Darling, Ann Arbor.

Ophthalmology, Milwaukee, Wis.

October, 1904.

- 88 Consequence of Ophthalmic Error. W. Schoen, Leipsic, Germany.
- 89 Pathologic Results of Dextroclarity and Sinistroclarity. G. M. Gould, Philadelphia.
- 90 Hysterical Asthenopia. H. M. Fish, New Orleans.
- 91 Saccharine Saline Injections in Ophthalmic Practice. L. W. Fox, Philadelphia.
- 92 Blepharorhaphy (Tarsorrhaphy). A. B. Hale, Chicago.
- 93 Acute Dacryoadentitis. A. C. Snell, Rochester, N. Y.
- 94 Relation of Diseases of the Eye to Those of the Teeth. W. Rebar, Philadelphia.

January, 1905.

- 95 Congenital Word Blindness. W. E. Bruner, Cleveland.
- 96 Binocular Fixation and the Hypothesis of the Dominant Eye. P. H. Friedenberg, New York.
- 97 Cases of Retinal Separation. A. Greenwood, Boston.
- 98 Comparative Tests of Colored Glass Used in Railway Signaling. N. M. Black, Milwaukee.
- 99 Improved Series of Woods for the Detection of Subnormal Color Perception, Color Blindness. C. A. Oliver.
- 100 Medico-legal Relations of Ocular Injuries, Pensions and Insurance Rates and a Reference to a Scientific Plan for Estimation of the Loss of Earning Ability. H. V. Würdemann, Milwaukee.

April, 1905.

- 101 Epithelioma of the Lid: Removal by Dissection and X-ray Treatment. W. H. Snyder, Toledo.
- 102 Pterygia for Diffuse Corneitis and Other Affections of the Cornea. S. Snell, Sheffield.
- 103 Scarification of the Orbit. E. O. Reft, Washington.
- 104 Elephantiasis of the Upper Lid. H. Harless and R. H. Johnston, Baltimore.

- 105 The Question of Iridectomy in Glaucoma Simplex. F. E. Cheney, Boston.
- 106 Intraocular Tuberculosis. W. C. Posey, Philadelphia.
- 107 Remarks on Molluscum Contagiosum. E. H. Oppenheimer, Berlin.
- 108 Treatment of Pyogenic Infection of the Eyeball. A. M. Ramsay, Glasgow.
July, 1905.
- 109 Astigmatism After Cataract Extraction as Modified by the Conjunctival Flap. C. F. Clark, Columbus.
- 110 Ophthalmometry. E. E. Gibbons, Baltimore.
- 111 Dionin (ethyl-morphin hydrochlorate) in Ocular Therapeutics. L. Connor, Detroit.
- 112 Local Anesthetics and Analgesics in Ophthalmic Practice. B. P. Church, Los Angeles, Cal.
- 113 Lesions of High Myopia Clinically Considered. H. F. Hansell, Philadelphia.
- 114 Microphthalmos, Persistent Pupillary Membrane, Anterior Synechia and Central Congenital Opacity of the Cornea. J. W. Striing, Montreal.
- 115 Kuhn's Conjunctival Flap. G. F. Saker, Chicago.
- 116 Nitric Acid Burn Involving the whole External Portion of the Eyeball; Much of the Conjunctiva Replaced by Epithelial Mucous Grafts Taken from the Lower Lip; Recovery with Useful Vision. C. A. Yensy, Philadelphia.

October, 1905.

- 117 Paralysis of Divergence. A. Duane, New York.
- 118 Paralysis of the Upward Movements of Both Eyes. W. Zentmayer, Philadelphia.
- 119 Tumors of the Conjunctiva and Cornea. J. M. Ray, Louisville, and F. H. Verhoef, Boston.
- 120 Primary Melanotic Sarcoma of Eyelids. R. H. Johnston, Baltimore.
- 121 Id. H. V. Würdemann, Milwaukee.
- 122 Ophthalmology in Japan. M. Inouye, Tokio, Japan.
- 123 Anatomy of the Eye according to the Ancients. E. E. Blaauw, Buffalo.
January, 1906.
- 124 History of the Ocular Treatment of Migraine and Headaches. O. Wilkinson, Washington.
- 125 What Are the So-called Reflexes Which Can Properly Be Referred to Eyestrain? L. Howe, Buffalo.
- 126 Symptoms of Amblyopia. H. F. Hansell, Philadelphia.
- 127 Retinal Hemorrhages in Apparently Healthy Eyes. E. W. Stevens, Denver.
- 128 Description of a Single Stitch Operation for Advancement of the Exterior Ocular Muscles. C. A. Oliver, Philadelphia.
- 129 New Punch for Removing Membranes from the Postpupillary Space in Traumatic or Secondary Cataract and for Making an Artificial Pupil. M. D. Stevenson, Akron.
- 130 Intraocular Irrigation. J. A. Lippincott, Pittsburg, Pa.
- 131 Euphthalmic Conjunctivitis. C. J. Kipp, Newark.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

January 27.

- 1 *Carcinoma of the Breast and Its Spread into the Lymphatics. C. B. Lockwood.
- 2 *Swellings of the Breast, their Diagnosis and Treatment. A. Clark.
- 3 *Enucleation of the Prostate for Hemorrhage. W. Thomson.
- 4 *Vetrofization. W. J. Sinclair.
- 5 *Immediate and Remote Results of the High Operation for Varicocele. E. M. Corner and C. A. R. Nitch.
- 6 Secondary Carcinomatous Growth Simulating Tuberculous Hip-joint Disease and Military Tuberculosis. R. E. Lord and C. W. Buckley.
- 7 *Simultaneous Excision of Two-thirds of the Stomach, the Anterior Face of the Pancreas and the Transverse Colon for Carcinoma. C. F. Child.
- 8 Accurate Delineation of Tuberculous Foci in Early Disease of the Kidney in Women Before Operation Is Undertaken. H. Fenwick.

1. **Spread of Carcinoma.**—Lockwood claims that the rapidity with which cancer spreads into the lymphatics depends to a large extent on the position of the primary growth. When that is situated within a hollow muscular organ, such as the urinary bladder or gall bladder, the pause may be a long one; but when the growth is in the mammary gland, in the tongue, or in the pharynx, he believes that there is hardly any interval between the onset of the growth and its spread into the neighboring lymphatics. In cancer of the breast he has found that the tumors in the lymph glands soon grow larger than the tumor from which they sprang, even though the presence of the growths in the lymph vessels can not be seen during the operation, except, occasionally, in very advanced cases. Lockwood advises the use of the microscope in all cases. He considers the duct carcinoma to be as malignant as any other variety. He also thinks it probable that cancer may cross in the lymph channels from one breast to the other, and cites one instance of carcinoma spreading against the lymph stream.

2. **Swellings of the Breast.**—Clark discusses the differential diagnosis of neuralgia of the breast, mastitis, abscess, cysts,

and benign and malignant tumors. He considers the following the ideal way of examining a breast that is the seat of a swelling:

The patient should preferably be seated in an ordinary chair, with her arms hanging down and the doctor seated opposite. If for any reason she has to be in bed, she should be placed flat on her back, with her head and shoulders slightly raised, and her arms lying beside her, the doctor standing at the left side of the bed; a shawl may be thrown loosely over the shoulders, otherwise the upper part of the body should be completely uncovered. Inspection is the first thing. The surgeon looks at the two breasts, noticing particularly any enlargement of either, or any puckering of the skin, also any alteration in the normal appearance of the nipple, and whether the two nipples are exactly opposite one another. He then places his hands flat on the affected breast, and carefully feels it all over. If he detects no tumor by manipulating in this way, he may be satisfied that there is not one. Should he feel a tumor, he will first notice whether it is tender or not, then satisfy himself whether it is circumscribed or diffuse; then, by lightly moving his hand laterally to and fro, whether the skin is adherent to it; then whether it is adherent to the pectoral muscle; and to ascertain this it is well for an assistant to support the arm and alternately to relax and to tighten the pectoral. The next thing is to examine the tumor with the two forefingers, ascertain its relative hardness and to decide whether there is fluctuation or not, and, lastly, the axilla and supraclavicular region should be examined for enlarged glands. In doing this the arm should be supported, and the muscles forming the axilla relaxed, and two fingers of the right hand employed. The whole axilla should be felt, more particularly the outer part, as there are usually glands found enlarged along the line of the axillary vein, if there are any. The forefinger should carefully feel the back and above the back edge of the sternomastoid muscle. It is desirable also to examine the axilla of the unaffected side, as some people have enlarged glands from another cause, and the enlargement on the affected side may not be due to the condition of the breast.

3. **Enucleation of Prostate for Hemorrhage.**—Thomson advocates the removal of the prostate for hemorrhage that can not be controlled otherwise. He cites one case in support of his contention.

4. **Ventral Fixation.**—Sinclair states that the operation of ventral fixation of the uterus, when properly carried out, is a most valuable one in the treatment of displacements of the uterus.

5. **High Operation for Varicocele.**—Corner and Nitch detail the results in 100 cases in which the high operation for varicocele was performed. After exposing the cord by a short incision, the pampiniform plexus was isolated, ligated in two places, about two inches apart, and the intervening portion excised. In some cases the two ends were approximated by a suture which transfixed the stumps. In 2 per cent. of the cases some recurrence of the varicocele was noted, but in neither instance was there any pain or discomfort. An inguinal hernia was present in 2 per cent. Two patients had a spermatocele. In 8 per cent. there was a tense hydrocele, and in 15 per cent. there was present a flaccid hydrocele which did not cause any symptoms. In 84 per cent. the sensibility of the testes was unaltered; it was increased in 9 per cent., decreased in 5 per cent., and lost in 2 per cent. Four patients stated that they were worse after the operation. Twenty-six reported themselves as being neither better nor worse; 70 patients were definitely improved and well satisfied.

7. **Extensive Operation for Carcinoma.**—In the case reported by Childe the greater portion of the transverse colon was excised, not because it was involved in the disease, but on account of the necessity of sacrificing its blood supply in order to get wide of the growth. About one-third of the stomach, at the cardiac end, was not removed so as to permit of a gastrojejunostomy. The growth infiltrated the anterior and posterior walls of the stomach for about half their extent. The pancreas was firmly attached to the stomach. The four openings made in the gastrointestinal tract were all closed with a double row of continuous silk suture. No button or bobbin of any kind was used. Five weeks after the operation the patient was up and about, taking ordinary solid food of digestible quality, and not in too large quantity, and was rapidly gaining in weight and strength.

The Lancet, London.

January 27.

9 "Acute Abdomen." W. H. Battle.

10 Institution and Sanatorium Treatment of Pulmonary Tuberculosis in Relation to Large Centers of Population. E. F. Trevelyan.

11 Evolution of Operative Gynecology. D. L. Roberts.

12 An Experimental Investigation of the Budde Process for the Preservation of Milk. R. T. Hewlett.

13 Two Cases of Leukemia Treated by the Roentgen Rays. W. L. Bruce.

14 Interrupted Circulation as a Therapeutic Agent. W. Ewart.

15 Experiments in Hypnosis. E. Ash.

16 Acid Extract of the Duodenal Mucous Membrane as a Remedy in Diabetes Mellitus. J. H. Abram.

17 "New and Easy Process of Triple Staining for Cytological and Histological Purposes." V. Bonney.

18 Importance of a Strictly Limited Lactation. A. D. Fordyce.

12. **Budde Process for Preserving Milk.**—With a view to testing the efficiency of the Budde process for the preservation of milk, Hewlett conducted a series of experiments, from the results of which he draws the following conclusions:

1. All the non-sporing organisms, pathogenic and non-pathogenic, dealt with—viz., the *Bacillus tuberculosis*, the *Bacillus diphtherie*, the *Bacillus acid lactici*, the *Bacillus typhosus*, the *Bacillus coli communis*, the *Bacillus dysenteriae*, a paratyphoid bacillus, the *Micrococcus pyogenes aureus* and the cholera spillum—are destroyed by the process.

2. Sporing forms—viz., the *Bacillus anthracis*, the *Penicillium glaucum*, the *Bacillus subtilis*, and the *Bacillus mycoides*—are not destroyed by the process although reduced in numbers, the inference being that the vegetative forms are destroyed but the spores are not destroyed.

3. Although the heating *per se* may be efficient in destroying certain non-sporing organisms—e. g., the *Bacillus diphtherie*, the *Bacillus typhosus*, and the cholera spillum—it is not so in all cases. Thus in one experiment the *Bacillus typhosus* and the *Micrococcus pyogenes aureus* survived the heating when no peroxid was added, and under similar conditions the *Bacillus acid lactici* survived in the two experiments in which this was tested.

4. The same fact is strikingly shown by the effect of "Buddelising" on the natural milk—i. e., the milk without added micro-organisms. The reduction in numbers effected by heating alone is far less than with "Buddelising."

5. "Buddelised" milk is practically indistinguishable from untreated milk in taste, odor, appearance, and in the rising of the cream. No increase in acidity is caused by the treatment.

6. "Buddelised" milk will keep perfectly sweet and apparently unaltered in odor, taste and appearance for at least from eight to ten days in hot weather and for a still longer period in cold weather.

7. In milk obtained in the ordinary way without special precautions the micro-organisms are reduced by the Budde process over 99.9 per cent. In the milk kept at room temperature the small residuum of living micro-organisms multiplies daily and ultimately (after from 12 to 14 days) may cause the milk to go bad.

8. The distribution of the "Buddelised" milk in closed bottles is in itself a great improvement on the routine system of distribution in open vessels.

9. The method excludes all possibility of adulteration of the milk by the vendor before it reaches the consumer.

10. Properly carried out, the whole of the added hydrogen peroxid is decomposed at the end of the process and no trace of it can be detected in the treated milk.

The principle of the Budde process is as follows: The milk is obtained in as cleanly a condition as possible, and if it has to be kept for any time before treatment it is efficiently chilled, but usually it is treated soon after milking. A proper proportion of peroxid of hydrogen is added to the milk and the mixture is heated to from 51 to 52 C. for at least three hours. A temperature below 48 C. is not efficient and one above 55 C. should be avoided as this tends to induce changes in the milk. With the aid of the heating the hydrogen peroxid is completely decomposed into water and oxygen by an enzyme (catalase) present in the milk, and the oxygen at the moment of liberation being in a nascent condition acts as an efficient germicide. At the end of the process the whole of the hydrogen peroxid should have been decomposed, provided the right proportion has been added, so that no antiseptic remains, a small but inappreciable addition of water has been made to the milk, and the majority of the micro-organisms have been destroyed. The amount of hydrogen peroxid required to obtain this result is about 15 c.c. of a 3 per cent. solution per liter of milk, so that the quantity of water added to the milk amounts to about 1.5 per cent., which, on a basis of 3 per cent. of fat, would reduce the percentage of fat to 2.95 in the treated milk, a reduction in the percentage of fat of about 0.05, an amount which may be regarded as negligible. The milk is treated in bulk and immediately bottled with suitable precautions and supplied to the public in the bottles, a fact which alone should commend it. The milk so treated is practically unaltered in appearance and flavor, the cream rises as usual, all ordinary non-sporing pathogenic germs are destroyed, and the milk will keep sweet for at least eight or ten days in hot weather.

14. **Interrupted Circulation in Rheumatoid Arthritis.**—Ewart emphasizes the efficacy of this method in reducing the swelling and the pain associated with the intra-articular effusion of synovial fluid, or the para-articular effusion of lymph. He says that the immediate relief afforded in cases of acute arthritis, whether rheumatic or gonorrheal, and in cases of sprain, is equally striking. In joints chronically thickened or fixed the improvement reported has not resulted in a complete cure.

17. New Triple Staining Process.—Bonney's technic is as follows:

1. Fix small pieces of the tissue in acetic-alcohol. (The fixatives of Hermann and Flemming may be used if preferred. The older and inferior fixatives such as alcohol, are useless as regards the fine details for which this process was devised, whilst formalin renders it impossible of performance.)
2. Embed, cut, and mount in the usual manner.
3. Stain for one hour in a saturated watery solution of safranin.
4. Wash in water.
5. Stain for a quarter of an hour in a saturated watery solution of methyl violet.
6. Wash in water and wipe the slide dry except that occupied by the section.
7. Have ready in a drop-bottle the following solution: to 20 cubic centimeters of acetone add drop by drop a saturated watery solution of orange G. until the flocculent precipitate which slowly appears on shaking is just dissolved in excess of the watery solution; then filter.
8. Flood the slide with this solution. A cloud of color immediately comes out which obscures the view of the section.
9. Pour this off on to blotting-paper and flood again with the same solution. The color cloud being much fainter the section can be watched.
10. When the section has attained a rather faint brownish-pink color, pour off the orange acetone solution.
11. Wash in acetone for a few seconds.
12. Wash in xylol.
13. Transfer to low-power microscope and see if the proper result has been attained.
14. Wash in two fresh changes of xylol.
15. Mount in xylol-balsam.

All chromatic elements, nucleoli, and certain nuclei, such as those of polymorphonuclear leucocytes, stain a rich violet, chromosomes standing out with peculiar distinctness. The spindle fibers of nuclear mitosis stain a faint pink. The cytoplasm stains a rose pink. The intercellular tissue stains a pale yellow. These effects are best seen if the slide be examined through a deep blue screen.

Indian Medical Gazette, Calcutta.

January.

- 19 Double Commissions. D. G. Crawford.
- 20 *The Three Day Fever. Chatterjee. Contribution to the Study of the Unclassed Fevers of India. R. McCarrison.
- 21 Forms of Pyrexia Due to Leishman-Donovan's Bodies. U. N. Brahmachari.
- 22 Case of Pteriasmosis.—Splenectomy Followed in Eight Months by Death. G. I. Davys.
- 23 Case of Recurrent Plague. G. I. Davys.
- 24 Last Plague Epidemic in the Girdih Sub-Division. District Hazaribagh. S. L. Sarkar.

20. Chitral Fever.—McCarrison describes this affection as an acute infectious disease epidemic in the Chitral Valley during the summer months and characterized by a single paroxysm of fever of typical course which persists for about three days without marked local affection. The paroxysm is accompanied by severe headache, pains in the back, bones, joints and muscles, and is followed by severe prostration, which continues for ten days or more after the attack. The virus of the disease is unknown. It does not seem to be contagious and requires a high atmospheric temperature for its development. As a rule, one attack confers immunity. Complications, with the exception of a terminal bronchitis, are few. The mortality is nil. The treatment is symptomatic.

Bulletin de l'Académie de Médecine, Paris.

- 25 (Year LXX, Nos. 2-3.) Discussion of Restriction of the Medical Use of the Roentgen Rays to Physicians. See news item, page 372.
- 26 La récente épidémie de choléra en Allemagne et ses enseignements. A. Chantemesse and P. Borel.
- 27 Autopsyomètre à miroir. Armaignac and Chabuel.

Archiv f. klinische Chirurgie, Berlin.

Last indexed page 391.

- 28 (LXXVII, No. 4.) Zur pathologischen Histologie des Gasser'schen Ganglions. R. Caminini (Campli).
- 29 *Ueber die Folgen der operativen Behandlung des Morbus Basedowii (remote results). Friedheim.
- 30 Die operative Behandlung der eitrigen Meningitis. H. Kümmell.
- 31 Technik, Wirkung und spezielle Indication der Rückenmarks-Anästhesie (spinal analgesia). A. Donitz (Bonn).
- 32 Experimentelle und klinische Beiträge zur Lebernaht und Leher-Resection (plates of magnesium for suturing liver). E. Payr and A. Martini.
- 33 Die operative Behandlung der Prostata-Hypertrophie. H. Kümmell.
- 34 Zur Kenntniss der primären Muskel-Tuberculose. F. Kaiser.
- 35 *Zur Klinik und path. Anatomie der malignen Hypernephrome. F. Albrecht.
- 36 Die Autolyse als Heli-Factor in der Chirurgie, insbes. die Intra vitam Verstärkung autolytischer Vorgänge durch Röntgen-Strahlen. B. Illele.

29. Operative Treatment of Exophthalmic Goiter.—Friedheim declares that enucleation or resection of part of the struma is the only means known to date by which exophthalmic goiter can be permanently cured. He reports his experience with 20 cases. Fourteen patients were completely cured, the interval since the operation ranging from four to nearly sixteen years. Five were improved to such a degree that they can support themselves, one by sewing, the others as saleswomen. In 3 cases the patients realize that great improvement was effected,

but as some of the symptoms still persist they are being advised to submit to another operation. One of the patients has died; possibly too little of the thyroid gland was left. This assumption was confirmed by the fact that the severe tetany observed subsided under thyroid tablets. In one case the right lobe was enucleated, but the symptoms by the end of the year were nearly as bad as at first. The left lobe was then excised and the patient was permanently cured. This was eight years ago. The statistics from four large clinics show 75 permanent cures and 23 much improved out of 109 cases, with 8 deaths. With internal treatment the mortality is estimated at 12 per cent., and permanent cures seem to be out of the question, he says.

30. Operative Treatment of Suppurative Meningitis.—Kümmell reports a case of a severe meningitic process following fracture of the base of the skull. Pus was evacuated by lumbar puncture and the patient—a healthy man of 33—recovered after bilateral and extensive trephining. Kümmell's experience has been that lumbar puncture will afford great relief, even when the process is too far advanced for hope of recovery.

31. Spinal Analgesia.—Donitz reviews his experience with 407 cases in which spinal analgesia was induced for operations. Cocain was used in 296 cases, stovain in 102 and eucain in 7. One of the reasons for the occasional failures observed at first was that the needle had been inserted in the cauda equina, not in the open space. If a tube is full of fluid, holding it slanting does not change the position of the fluid, but if it contains only a little fluid this flows to the lowest point when the tube is slanted. If the cerebrospinal fluid is under high pressure, raising the pelvis does not change its position, but if there is only a small amount in the spinal cavity raising the pelvis allows it to flow toward the head. The hy-effects of spinal analgesia are those of an aseptic meningitis. They can be avoided by using the least irritating substance as a vehicle for the anesthetic and the smallest possible amounts. The ideal method, Donitz thinks, would be to inject the anesthetic directly into the segment of the spinal roots which correspond to the region on which the operation is to be performed. The danger of injury to the spinal cord renders this impracticable, but this ideal is approximated by making the injection as high as can safely be done, that is, between the second and third or first and second lumbar vertebrae, and then, by raising the pelvis or by constriction of the neck, forcing the anesthetic indirectly to the desired point. In cases of hy-effects, castor oil seems to be useful. He remarks that in operating on the abdomen it is of no benefit to have the legs and pelvis anesthetized also. It is sometimes possible to accomplish the desired result with as little as 1 c.c. of the solution, if the pelvis is raised. When the cerebrospinal fluid is very scanty it is wise to use more of the vehicle. This is done by aspirating a little of the fluid into the syringe instead of merely injecting the anesthetic into it. This dilutes the anesthetic and insures its better diffusion. In case of deficient flow of the cerebrospinal fluid it is wiser to refrain from spinal anesthesia for operations at the umbilicus or above, for fear that it may prove a failure.

32. Magnesium Plates in Suturing the Liver.—Payr describes considerable experimental work which demonstrates the ease and security with which the liver can be sutured after resection, when the stitches are taken through holes in a couple of magnesium plates as stays. He gives a number of illustrations to show the technic and the results.

34. Primary Tuberculosis of the Muscles.—Kaiser reports a case in a woman of 70 and reviews the 17 cases recorded in the literature. The other patients were mostly young and recovered after operative treatment.

35. Malignant Disease in the Kidneys: Hypernephroma.—Albrecht has had occasion to observe, at Hochneegg's clinic, 28 cases of a malignant tumor in the kidneys derived from suprarenal tissue. In 18 cases the tumor was on the left side. Hematuria was noticed in only about a third of the cases. Local pain was a frequent symptom; in some cases it was noted from four to fifteen years before the true nature of the trouble became manifest. In a few instances there were

digestive disturbances. A differential point is that the symptomatic varicocele accompanying the growth does not subside as the patient reclines, like ordinary varicocele. The age of the patients ranged from 28 to 66. A very important feature of these cases is the metastasis. Frequently the metastasis in some bone is the first revelation of the hypernephroma. This occurred in 4 of the total 28 cases. In one the metastatic tumor was in the forehead, in another in the femur, knee or clavicle. The possibility of a primary hypernephroma should be suggested by the discovery of a rapidly growing, solid tumor in the bone in a person between 40 and 66. The urine should be repeatedly examined. The findings were negative in only 1 of these 4 cases; in the others the urinary findings gave the clue to the nature of the trouble. Treatment should be nephrectomy; partial resection, he thinks, is dangerous. Operation was undertaken in 24 cases, and of the 16 patients who survived the operation 9 have since died from local recurrence or metastasis and another from intercurrent pneumonia without a trace of recurrence. A tendency to tardy metastasis is manifest. Of the 16 patients who survived the operation, only 4 remained healthy for more than four years, and 3 of these 4 developed metastases after that interval. Consequently there is only a single patient in good health to-day, after an interval of four years or over, out of the 24 operated on within the last ten years. The article concludes with a study of other features in regard to these growths and their mode of development, both anatomic and clinical.

Berliner klinische Wochenschrift, Berlin.

- 37 (XLII, No. 46, November 13.) Einige Ergebnisse der experimentellen Krebsforschung (cancer research). E. F. Bashford, J. A. Murray, and W. Cramer (London).
- 38 *Der Schilddrüsenkrebs der Salmoniden (Edelfische) (thyroid cancer in fishes). L. Pick.
- 39 Weiteres zur Lehre vom echten doppelten Herzstoss (double heart beat). K. Doll.
- 40 Untersuchungen ueber das Vorkommen von Spirochaeta pallida bei Syphilis. Roscher. (Concluded).
- 41 Spirochaeta pallida bei einem mit Blut gelimpften Makaken (in inoculated monkey). E. Hoffmann.
- 42 (No. 47.) Ueber die Gefahr von Injection von Paraffin.—Ueber Schädigungen des Auges nach Paraffin-Injectionen bei Sattelnause. W. Uthoff.
- 43 Ueber den Nachweis Eberth-Gaffky'scher Bacillen in der Cerebrospinalflüssigkeit bei Typhus abdominalis. A. Schütze.
- 44 *Prostatahypertrophie und Diabetes. C. Posner.
- 45 Individualität und Psychose. C. Neisser. (Concluded).
- 46 Die moderne Behandlung der tuberculösen Spondylitis. C. Hebling. (Concluded).
- 47 (No. 48.) Simulation und Geisteskrankheit bei Untersuchungs-gefangenen (mental disease in criminals). E. Siemerling.
- 48 Zur bakteriologischen Diagnose des Weichselbaumschen Meningococcus. F. Kallertsch.
- 49 Sahli's Test of the Chemistry of Stomach.—Zur Sahli'schen "Desmold"-Reaktion. F. Eichler. See THE JOURNAL, p. 1819, vol. XLV.
- 50 Beitrag zur Kenntnis hysterischer Sprachstörungen (disturbances in speech). O. Mass.
- 51 *Klinische und experimentelle Erfahrungen ueber Reizungen des Herzwagens (excitation of cardiac plexus). A. Rehfisch.
- 52 Wann und wie soll der praktische Arzt die Retroflexio uteri behandeln. (In general practice). Stoeckel.

38. Endemic Cancer Among Brook Trout.—Pick has been investigating the thyroid cancer found in a salmon and has found it to be identical with the "gill disease" endemic among salmon and brook trout in certain parts of the world. Bonnet in 1883 reported the loss of 3,000 lake trout in the fish hatchery at Gardasee from the rapid growth of tumors on the floor of the mouth and gills. A similar endemic was reported from Scotland in 1888 and from New Zealand in 1901. Nothing of the kind has been observed in the hatcheries in Germany. The neoplasms which Pick examined were unmistakable epitheliomas of the thyroid gland. They occurred endemically in certain hatcheries among the same species and always at the same age, when the fish were over two years old. Sporadic cases also occur and wild salmon are also liable to be affected. The proportion of the brood affected ranged from 2 to 7 per cent. As the affection seems to be restricted to certain hatcheries in certain countries, and to certain species of fish in the hatchery, the local conditions must exert some influence in the matter. This throws light on the endemic character of cancer. The variability of the histologic findings recalls that of the epithelial tumors of the mamma in mice, and there is also a striking analogy between the trout cancers and malignant cancer of the thyroid in man. Pick does not think that the circumstances

indicate necessarily a parasitic origin for the growths. He is more inclined to admit that a primary, merely hyperplastic, strumous proliferation of the thyroid gland, simple endemic goiter, in consequence of some external deleterious influence (possibly the composition of the water), causes a transformation of the originally harmless growth into malignant carcinoma. The article is profusely illustrated and continued to No. 49.

42. Injury of Eye from Paraffin Injections for Saddle-Nose.—Uthoff has had two experiences of this kind. In the first, embolism of the arteria centralis retinae developed immediately after injection of paraffin with a melting point of 43 C. It was the third injection, the two others having been made eight and five months before. He theorizes that the paraffin, still in a fluid state, must have passed into a vein and thence through the lungs and entered the arterial circulation, reaching the arteria centralis retinae in this way. In the second case a man of 57 had been successfully treated for saddle-nose, but after working in the garden on a very hot day a few months later he experienced a strange sensation in the eyelids and rubbed them. They swelled to such an extent that he was unable to open his eyes. Erysipelas was diagnosed at first, but excision of a scrap of lid tissue revealed that the trouble was inflammation from the presence of paraffin. In order to enable the patient to see at all, the large, hard, tumor-like masses which closed the eyelids completely were removed in several sittings, with the result that the patient is able to open his eyes enough to see. The inflammatory giant-cell proliferation in and around the droplets of paraffin was evidently the result of both the mechanical and the chemical action of the foreign body, the paraffin, which had found its way into the lids. Several somewhat similar cases have been published, but none in which the resulting disfigurement was so severe. He reviews the literature on the subject, citing several cases of blindness, and concludes with the warning not to inject too much paraffin at a time, and not to inject it in the centripetal direction of large venous tracts. He advises waiting a sufficiently long time before repeating the injections, to arrest the circulation in the adjacent blood vessels during the injection, and to use paraffin with a high melting point. Accidents have been reported after the use of hard paraffin, but they have not been so numerous or so severe as those after injection of paraffin with a low melting point.

44. Hypertrophied Prostate and Diabetes.—Posner calls attention to the liability of overlooking an affection in the prostate when treating a diabetic patient. The prostate may be hypertrophied and cause disturbances which are credited to the diabetes, even during the periods when the patient has been freed from glycosuria. In other cases the pronounced hypertrophy of the prostate causes the physician to overlook impending or established diabetes. In his experience in the last ten months he has encountered 5 out of 30 cases of hypertrophied prostate in which unmistakable evidences of diabetes were found by searching for them. He is inclined to believe that the enlarged prostate has a distinct influence in predisposing to diabetes, as there is usually arteriosclerosis in such cases. He does not attribute the hypertrophy of the prostate to arteriosclerosis, but regards it as a new growth of a fibromatous or adenomatous nature. Persons thus affected are frequently arteriosclerotics, and there is certainly some connection between arteriosclerosis and diabetes. The slow healing and the course of wounds and the gangrene in diabetes are due to the affection of the smaller arteries. The frequency of sclerosis, calcification and atheroma in diabetes has long been noted. Treatment of hypertrophied prostate should, therefore, aim to ward off injurious influences from possible glycosuria. The repugnance to meat, characteristic of retention of urine, renders it difficult to feed such patients properly, and yet they have special need for a nourishing diet. The dangers of catheterization and of operative intervention are magnified by the presence of diabetes. Zuckerkind lost a patient from diabetic coma after a successful prostatectomy.

51. Stimulation of the Cardiac Pneumogastric Nerve.—Rehfisch found in the course of much experimental and clinical research that stimulation of moderate intensity applied to the

cardiac pneumogastric nerve reduced the heart rate temporarily. The arrhythmia observed after febrile affections, in meningitis and in intestinal affections and in children is evidently due to irritation of the cardiac pneumogastric. He does not accept this as an expression of the affected heart itself, but rather as a reflex phenomenon.

Centralblatt f. d. Grenzgebiete der Med. u. Chir., Jena.

Last indexed XLV, page 1766.

- 53 (VIII, Nos. 18-21.) *Ueber Spondylitis im Gefolge akuter Infektions-Krankheiten (typhoid spine, Spondylitis typhosa, infectiosa). K. Fluss. Critical analysis of all published cases. (Commenced in No. 17.)
- 54 (No. 22.) *Present Status of Torticollis.—Ueber den gegenwärtigen Stand der Lehre des muskulären Schiefhalses. G. Zesas. Critical review of the literature. (Commenced in No. 18.)

53. Spondylitis Following Acute Infectious Diseases.—Fluss summarizes the conclusions derived from analysis of the cases on record, discussing the differential diagnosis, prognosis, treatment, etc. The importance of avoiding overexertion or a fall soon after an acute infectious disease is clearly demonstrated by the experiences related. Trauma certainly is a factor in the development of spondylitis after acute infectious diseases. Witzel even incriminates trauma in the bathing of typhoid patients as responsible for "typhoid spine" later. Every case of lumbago occurring after typhoid should be treated as if it were typhoid spine. Kuhn advises thorough examination of the spine from time to time after typhoid fever. Rest in bed is the main reliance in treatment. Moorehouse and Pallard and Taylor and Cannon have also found that rest in bed for three months proved successful after failure of all other measures. In severe cases, immobilization of the spine may be necessary besides the rest in bed. Quinke reports that a patient dismissed with a cast was almost completely cured by the end of a year. With immobilization, supplemented by cauterization and antiphlogistic measures, Bonardi cured his patients in 2 severe cases in sixteen and forty days. In a case reported by Schanz, the plaster bed banished immediately the intolerable pains. In four weeks a model for a leather corset could be taken and in two weeks more the patient was able to sit up and was cured by the end of the third month. Schanz insisted further that the corset must be worn regularly for a time and that the patient must sleep in the plaster bed. Rest in bed and antiphlogistic measures are sufficient only in the very mildest cases. He recommends placing the spine in the lordosis position as much as possible, as this best relieves the pain. In severe and threatening cases treatment should be active, as for tuberculous spondylitis. The physician should never rely on the spondylitis proving harmless. Newcome applied extension with an 8 pound weight in one case, curing the patient in a month. Quinke also applied extension in one case with improvement in six months, but the deformity persisted unmodified. Franke proclaims that all affections of the bones and joints after influenza demand extremely cautious treatment; irritation of the slightest kind, even gentle massage, is liable to aggravate the trouble beyond remedy in the acute and even in the chronic stage. Mercurial treatment is indicated at the slightest suspicion of lues. In only one of the cases on record was there necessity for incision and evacuation of pus. This was in a case occurring after influenza; the entire arch of the fourth thoracic vertebra was found decayed. Franke believes that the lesion heals under conservative better than under active measures. He obtained the best results from hot baths and hot applications. Drafts are particularly injurious during and after influenza. Sodium salicylate with an antipyretic was useful in the more acute cases. Some patients thought they were helped by ichthyol salve, others by very gentle massage with chloroform oil, especially during the later stages, but every careless pressure caused intense pain and aggravation of the trouble. The foremost indication is rest and protection of the affected part. The patients must be encouraged, as the trouble is so tedious that they early despair of complete recovery.

54. Torticollis.—Zesas concludes from his analysis of the published cases that treatment of muscular torticollis can not be schematic, but must be individualized to each case, with special regard to the duration of the affection, the changes in

the muscle and the resulting disturbances. In all cases seen early massage and orthopedic treatment should be tried first. Incision and division, not only of the shortened muscle but also of all the contracted cords, is the standard procedure. The after-treatment must be adequate, and in all severe cases and in case of relapse partial extirpation of the sternocleidomastoid with an eventual plastic operation on the muscle is indicated. In case of spasmodic torticollis, resection of the cervical nerves, especially when preceded by resection of the spinal accessory nerve, has given better results than division of the muscles. The operation is the more promising the fewer muscles are involved in the spasmodic contraction. Kalmus has collected 95 cases treated by operation. The results, although far from constantly successful, yet should encourage surgical intervention after failure of conservative measures.

Münchener med. Wochenschrift, Munich.

- 55 (LII, No. 48.) *Displacement of Trachea and Larynx.—Die Verlagerung der Luftröhre und des Kehlkopfes als Folge gewisser Veränderungen der Brustorgane. H. Curschmann.
- 56 *Consequences of Torsion of Appendices epiploicae.—Ueber die Bedeutung der Appendices epiploicae und ihre Folgen (Corpora aliena und Stränge im Bauche). Riedel.
- 57 *Die Mobilisierung der skoliotischen Wirbelsäule mit einer aktiven Methode. R. Klapp.
- 58 *Importance of Convulsive Hyperemia in General Practice.—Ueber die Bedeutung der Bier'schen Stauungsbehandlung akuter Entzündungen für die chirurgische Poliklinik und den praktischen Arzt. W. Danieles.
- 59 *Ueber die Behandlung der entzündlichen Erkrankungen der Tonsillen mittels Saugapparaten (suction apparatus). O. Prym.
- 60 Ueber Klinik und Technik der Publotomie. M. Reeb.
- 61 Ueber Komplikation von Scharlach mit Icterus (scarlat fever). O. Gross.
- 62 Apparat für Fermentation Test for Sugar in Urine.—Die quantitative Zuckerbestimmung im Harn und ihre klinische Bedeutung nebst Beschreibung eines neuen Gärungsapparates, Gährungs-Saccharo-Manometer. B. Wagner.
- 63 *Ueber ein einfaches Säuglingsbad (infants' bath-tub). B. Spörck.
- 64 Simple Method of Obtaining Material for Examination of Stools.—Eine einfache Methode zur sterilen Stühlenentnahme bei Kindern. L. Jehle.

55. Displacement of Trachea and Larynx.—Curschmann noticed that dilatation of the aorta sometimes pushed the trachea and larynx to one side. He found this displacement of the air passages also in a case of pneumothorax. It might serve to differentiate pneumothorax from a cavity in the lung. He has noticed also that a process of shriveling in the thorax is liable to pull the trachea over on the side affected. He gives illustrations of 2 cases of marked displacement from dilatation of the part of the aorta nearest to the trachea.

56. Consequences of Torsion of Appendices Epiploicae.—As mentioned in the editorial on page 124, Riedel has encountered a number of cases in which serious results had followed torsion of one of the small pouches of the peritoneum filled with fat, known as the appendices epiploicae. In six instances the torsion had resulted in the detaching of the end, the escaping fat then acting like a foreign body in the abdomen. He knows of only a single similar case on record. The serous inflammation resulting from torsion of an appendix epiploica resembles that observed in appendicitis. In one case the twisted pedicle of the appendix epiploica had constricted the small intestine to which it was adherent. In 2 other cases the appendix epiploica was included in a hernia. These cases demonstrate anew how extremely sensitive the omentum is to the slightest irritation. The reducible hernia had existed for years without disturbances, but pain developed at once when the included appendix epiploica became twisted. His first patient suffered from attacks of pain suggesting gallstones. No tumor could be detected by palpation. Adhesion of the gall-bladder was assumed, but the operation revealed merely two small foreign bodies of fat tissue loose in the abdominal cavity. They were nearly as large as cherries. The patient committed suicide three years afterward, and two other similar foreign fatty bodies were discovered loose in the abdomen. In another case an operation for assumed recurring appendicitis revealed merely a loose foreign body about 1.5 cm. long by .75 cm. thick. The symptoms in another case suggested gall-stone colic with icterus. Oil was given without effect. The gall-bladder was found soft and was removed, although there were no evidences of stones. Two fatty bodies were found lightly adherent to the transverse colon and a third loose on the meso-

colon, while a number of appendices hung by narrow pedicles from the colon. The symptoms in another case were chills and abdominal pain, watery and fecal vomiting. The only cause for the peritonitis that could be found on operating was a crescent-shaped appendix epiploica, with a loose, fat foreign body nearby, which had evidently escaped from it. The peritonitis continued its course and the patient succumbed forty-eight hours later. Micro-organisms resembling the colon bacilli were cultivated from the center of the foreign body. At the autopsy nothing pathologic could be detected in any organ to explain the peritonitis, aside from the fatty body that had escaped from the pouch of the appendix epiploica.

57. Mobilization of Scoliotic Spine by an Active Method.—Klapp has succeeded in transforming patients with scoliosis and weak backs into "back athletes," as he calls them. He develops the muscles of the back astonishingly and exercises the spine by a method which, he thinks, brings the muscles into play better than any conceivable apparatus. The patients are instructed to creep on the floor, the hand and knee on the same side close together or else stretched as far apart as possible. This is the ordinary four-footed gait exaggerated. As the patient takes a "step" he is instructed to stretch his hand as far forward and his foot as far backward as possible, drawing the hand and knee on the other side close together and at the same time looking back toward his foot on the concave side. He turns and looks backward on the other side as he takes the next step with the hand and foot on the opposite side. It is surprising, Klapp remarks, how the muscles of the back and pelvis are brought into play by these motions. They can be exaggerated still further by bringing the foot on the concave side across beneath the trunk and bending the extended arm toward the concave side. The hands and knees are protected by leather and the children think these exercises are great fun. The benefit is soon apparent. Before commencing the exercises superheated air is applied to the spine for twenty minutes to secure the mobilizing action of hyperemia. His contrivance for this purpose is a large box containing the source of the heat; the patients sit on stools, each with his back against a corresponding window in the box. In conclusion Klapp urges general practitioners to treat scoliosis in this way, especially after a course of orthopedic treatment, to confirm the results obtained. He does not weary the children by calling on them for any other exercises, reserving their strength exclusively for the creeping movements. The article is illustrated.

58. Congestive Hyperemia for Acute Inflammations.—Soon after Bier's revolutionary announcement that acute inflammation should be regarded not as something to be combated, but as one of Nature's curative processes which the physician should strive to promote, Küttner introduced the Bier technic into his clinic. The results of treatment on this principle of 105 patients with carbuncles, felons, phlegmons, infected wounds, lymphangitis and similar affections have converted him to an enthusiastic advocate of the new therapeutic congestive hyperemia. He calls it "the greatest therapeutic achievement of recent surgery." Its chief advantages, he says, are the doing away with the necessity for large incisions, with resulting scars, and for tamponing, while it reduces the length of treatment and prevents serious functional disturbances in joint and tendon sheath affections. It is indispensable, however, he adds, that Bier's directions should be closely followed, and that the application of the constricting band should always be closely supervised by the physician. It should never be left to the judgment of the patient or nurse. If medical surveillance is not possible, then this method of treatment should not be attempted. [Similar laudatory articles have appeared in many of our German exchanges. E. Gnth states that the cessation of the pain is his criterion for the amount of constriction necessary to induce the proper dose of congestive hyperemia. He says that the relief is as great as from a generous injection of morphin, and that the method shortens the time of treatment and has the further advantage of reducing the danger from contamination of the physician's fingers with septic material. His experience with it in general practice is related in the *Prag. med. Wochft.* for January 18.—Ed.]

59. Treatment of Tonsillitis with Suction Apparatus.—Prym writes from Leo's clinic at Bonn to describe the excellent re-

sults attained in inflammatory affections of the tonsils by application of a suction apparatus to induce congestive hyperemia. The cup fits over the tonsil and is connected by a tube with the suction pump. No by-effects were noticed, except excessive secretion of saliva, during the application of the cup. He adds that it did not seem to distress the patients unduly.

63. Infants' Bath Tub.—At Escherich's clinic the infants sleep in an oval basket which fits into an iron standard. When the basket is lifted out, a sheet is laid over the oval frame of the standard, the ends tied below. A piece of rubber cloth is then laid over the sheet. A convenient and easily sterilized individual bath tub is thus provided for each infant. Or two wooden chairs can be placed with their seats together, facing each other, the legs tied together to prevent slipping. A sheet is then laid over the backs of the chairs and tied or held with safety-pins to form the bath tub, over which the sheet of rubber cloth is laid.

Gazzetta degli Ospedali, Milan.

Last indexed XLV, p. 2033.

- 65 (XXVI, N. 133.) *Importanza del Corpi di Negri, nella diagnosi pratica della rabbia (rabies). C. S. Materazzi.
- 66 Raddoppiamento del secondo tono come sintomo più significativo della stenosi mitralica (reduplication of second sound). A. Germani. Four cases.
- 67 Ilereditary Goiter.—Il gozzo ereditario e la sua influenza sullo sviluppo psichico dell'individuo. G. Corsini.
- 68 *Effects of Extirpation of Semilunar Ganglion. Sugli effetti della estirpazione del ganglio ciliaco. S. Pieri.
- 69 *Silver Nitrate in Pneumonia.—Il nitrato d'argento nella cura della polmonite franca. A. A. Belfadel.
- 70 *L'isteria in medicina legale. G. Vetrano.
- 71 (No. 134.) Le mastzellen ("mast cells"). C. C. Ducati.
- 72 Caso di eritemoelalazia. G. Severino.
- 73 (No. 139.) *La posizione del corpo nell'asma e sue varie forme. I. Minervini and P. Tagliamuro.
- 74 Sulla genesi dello "shock". P. Pescicelli.
- 75 *Gargonia della premittia nelle malattie infettive. A. Montini.
- 76 (No. 142.) *Recent Progress in Therapeutics. U. Baccarini.
- 77 *Sull'azione dell'acido formico e dei formati sul cuore e sulla circolazione (formiates and the heart). S. Livierato.
- 78 *La precessione dello sterno (sternum). M. Landolfi.
- 79 La stovaina come anestetico locale. L. Marchetti.
- 80 (No. 145.) Influenza del sistema nervoso sull'assorbimento cutaneo ed intestinale (absorption in frogs). C. Carlo.
- 81 Distrofia tromboembotica.
- 82 Ricerche sperimentali sulla morfologia degli elementi figurati del sangue (of blood). Triolo.
- 83 (No. 148.) Studio del fenomeno respiratorio di Cheyne e Stokes. G. Carlo.
- 84 Pseudo-rumore articolare acuto in soggetto isterico (in a hysterical). O. P. Goggia.
- 85 *Hemolytic Power of Syphilittic Serum Before and After Mercurial Treatment. Ricerche sul potere emolitico del siero di sangue di mercurio filtrato dopo la cura e sulla resistenza delle loro enzime a sieri eterogenei. M. Pergola.
- 86 *Tetano ed iniezioni ipodermiche di chinina. G. Grixoni.

65. Negri Bodies in Diagnosis of Rabies.—This communication from the Catania Institute of Experimental Hygiene affirms the constant presence of the Negri bodies in animals with natural or experimental rabies. Materazzi is convinced that they are the specific causal agent of the disease. Inoculation of rabbits should never be omitted, as there is always a possibility that the suspected rabid animal may have been in that phase of the incubation when the saliva has acquired virulence, but the micro-organism has not reached the stage in its development when it proliferates in the cells. The search should be long and minute before proclaiming negative findings. Materazzi has never missed finding the Negri bodies. In a communication from the Berlin Institute for Infectious Diseases, Bohne corroborates the specific value of the Negri bodies as a constant finding in rabies. It is published in the *Zeit. f. Hyg. und Infekt.*, xxv, No. 1. He found the bodies constantly in 200 brains and regards them as specific. He does not believe in their parasitic nature, as they are comparatively large, while rabies virus can pass through a filter. Another argument against their parasitic nature is that they are seldom found in the spinal cord and at other points where the tissues prove virulent when inoculated. The bodies seem to collect principally in the center of the hippocampus major. He has simplified Negri's technic and announces that his modified technic allows the discovery of the Negri bodies in three hours after receiving the material. This is extremely important when persons have been bitten by an animal which shows no other signs of rabies. The discovery of the Negri bodies settles the question as to the necessity for Pasteur treatment. His technic may be summarized as follows: Acc-tone for thirty to forty minutes; paraffin for sixty to seventy-

five minutes; imbedding, cutting into sections, mounting and drying; staining for one-half to four minutes with Mann's solution (35 c.c. of 1 per cent. aqueous solution of methylene blue and 35 c.c. of 1 per cent. solution of eosin, plus 100 c.c. of distilled water); brief rinsing in water; brief rinsing in absolute alcohol; absolute alcohol, plus solution of soda, for fifteen to twenty seconds; rinsing in absolute alcohol; water for one minute; water plus acetic acid for two minutes; rapid drying and imbedding. The Negri bodies were described in these columns on page 1490 of volume XLIV.—Ed.]

68. **Extirpation of Semilunar Ganglion.**—Pieri was unable to detect anything abnormal in 8 rabbits after removal of part of the celiac plexus. As soon as the wound had healed the animals were apparently in normal health for months afterward. The loss of the semilunar ganglion did not seem to have any influence on the weight of the animals. Methylene blue taken into the stomach passed into the urine just as promptly as in the sound animals.

69. **Nitrate of Silver in Pneumonia.**—Belfaded relates the histories of 24 patients with pneumonia treated with 15 cg. of silver nitrate daily. He remarks that the results were not such as to encourage its further use.

73. **Attitude in Asthma.**—In differentiating the various forms of asthma, Minervini lays great stress on the attitude during the attack. In bronchial asthma the patient gets up and goes toward a door or window seeking for air, supporting himself by a chair or window frame, retaining his sense of direction and coordination. If he can seize the back of a chair with both hands he clings to it, his shoulders raised and his body stooping forward. In cardiac asthma the patient is much weaker during an attack. He sinks into a chair or sits on the side of his bed, immovable, dumb, anxious, supporting himself with his hands on the seat of the chair or bed beside him. In uremic asthma the patient also assumes this position from lack of energy to rise, but he is much agitated and tosses his arms and legs about, the convulsive agitation sometimes passing into a rapidly fatal depression. He gives illustrations of the various types.

75. **Typhoid Gangrene.**—The robust young man whose case is described succumbed to the effects of gangrene of the leg, a complication of typhoid fever. He had injured his leg in a bicycle accident a week before the onset of the typhoid. It is possible that the trauma may have caused a place of lesser resistance in the artery where the typhoid bacillus set up the arteritis responsible for the fatal gangrene.

76. **Recent Progress in Therapeutics.**—Baccarani refers exclusively to Italy in his remarks. He congratulates his Italian confrères on the marked caution they have displayed in accepting and using the new drugs with which the markets are being constantly flooded. The tendency is constantly more apparent, he says, to return to the old, tried remedies of the pharmacopœia. "Why," he exclaims, "should we abandon the wealth of material which the long and continued experience of men, past-masters in the art of observing, has established as effectual? All we have to do is to go over the indications for their use with the aid of the lights of modern medical knowledge." In regard to organ therapy he thinks that results have not justified the high anticipations at first and that the subject requires much more study before it is definitely accepted that the extracts of certain organs are able to supplement the lacking, the exaggerated or the perverted internal secretions of certain organs. Vastly more encouraging is the outlook in what he calls "the new branch of the medical sciences, medical surgery." By this he means the close co-operation of the physician and surgeon in affections such as cirrhosis of the liver, nephritis, appendicitis, etc., and the therapeutic use of lumbar puncture. He says that serum treatment in the hands of the Italians has continued to give fine and durable results; as also the milk of immunized cows. Lucatello treats anemia with serum from animals previously treated with blood from anemics. Baccarani refers also to Bozzolo's successful treatment of leukemia with the x-rays, Tizzoni's encouraging experiences with radium in rabies and the continued success of Baccelli's intravenous injections of drugs in threatening conditions. The Italians have also confirmed the importance of salt in dropsical affec-

tions, restriction of salt tending invariably to reduce the effusions.

77. **Action of Formiates on the Circulation.**—Livierato was unable to discover any appreciable action on the heart or vessels from administration of formic acid or the formiates.

78. **Percussion of the Sternum.**—Landolfi has noticed increased resonance over the sternum when there is a cavity in the lung. When the resonance over the sternum persists as the patient reclines, but vanishes when he lies on one side, this can be accepted as a sign of hydrothorax or pyopneumothorax. Banti was the first to call attention to the retrosternal dullness observed in case of pleurisy with effusion, which aids in differentiating it from pneumonic lesions. Livierato affirms that the normal aorta does not alter the plessimetric findings over the sternum, but when the artery is dilated or altered by age there is dullness. The dullness becomes more pronounced as the trunk is bent forward. Enlargement of the right auricle is also liable to induce dullness.

86. **Tetanus and Subcutaneous Injections of Quinin.**—Grixoni reviews the various cases on record in which tetanus followed subcutaneous injection of gelatin, vaccine or quinin. He also relates experiences carried on at the Scuola d'Applicazione di Sanità Militare to determine whether tetanus germs can survive an ordinary solution of quinin. Tetanus spores are able to live in solutions of quinin, such as are currently used for subcutaneous injection, maintaining their vitality and virulence for a long time. Heating the solution to 105 C. for ten minutes or to 100 C. for twenty minutes always killed the spores in his tests. His further experiences disproved the assumption that injections of quinin have any influence on tetanigenous germs which may be present in the organism in the latent state. Fifteen years ago injections of quinin were comparatively rare, yet 615 deaths from tetanus occurred throughout Italy. The number has constantly declined, until last year there were only 250, and 162 of these patients were farm hands or stablemen. The military statistics have ceased to list tetanus, showing that there has been no mortality from this cause during the last few years, although the number of injections of quinin is now very large. The cases of tetanus observed after subcutaneous injection of quinin must have been due to contamination of the solution used, the germs finding a favorable soil for developing in the conditions produced by the injection of the quinin in a hypertonic solution. The reason that such accidents are not observed after injection of morphin, caffeine, strychnin, etc., is because these drugs do not cause anatomic changes at the point of the injection. When the quinin was dissolved in a physiologic saline solution no trouble of the kind has ever been observed. This assumption that the tetanus was the result of the development of the germs in the histochemical lesions produced at the point of the injection is sustained by the fact that quinin by the mouth has never displayed any general or local action in respect to tetanus. Grixoni refers frequently to Vincent's article, summarized in these columns on page 1646 of vol. XIV, 1905. He thinks that the results in Vincent's cases were due to the destructive changes induced by the concentrated solution which he used. The osmotic tension of the blood must have been violently disturbed.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

MY SYSTEM, Fifteen Minutes' Work a Day for Health's Sake. By J. P. Müller. With 44 illustrations (from Photographs) and a Time Table. Authorized Translation by G. M. Fox Davies, from the Fifth Edition (30th Thousand) of the Danish Original. First Edition. Published by Tilgde's Boghandel, Copenhagen, 1905. Paper. Pp. 90. Price, 75 cents. Agents for America, New York: G. E. Stecher & Co.

BIENNIAL REPORT OF THE BOARD OF TRUSTEES OF MILWAUKEE HOSPITAL FOR ISSUES, for the Two Years Ending Sept. 30, 1904. Paper. Pp. 55. Madison: Democrat Printing Co., 1905.

INQUESTIONS, an Elementary Study of Its Causes and Treatment. By F. Clarke. Cloth. Pp. 85. New York: William Wood & Co.

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Original Articles

A NEW TECHNIC FOR BREAST AMPUTATION.

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I wish briefly to present the description of a new technic for use in radical operations for carcinoma of the breast. I devised this method of operation about eight months ago, and since then I have used it exclusively in all cases of this character with which I have had to deal. From this experience, though limited to eight cases, I believe that the method has certain elements of advantage, as well as originality, that justify me in presenting it to the medical profession.

The skin incision in this operation is begun at a point about one and one-half inches below the middle of the clavicle, in the sulcus, marking the interval between the deltoid and the pectoralis major muscles. From this point the incision is carried in a straight line along the sulcus, parallel to the inner border of the deltoid muscle, until it reaches the lower border of the pectoral fold as it terminates in the arm. This straight incision is all that is made in this early step of the operation, but for the sake of clearness the complete incision is outlined here, that the general picture thus may be better obtained.

From the lower border of the first incision the knife is now carried along the under margin of the pectoral fold to the chest, at a point which corresponds, as a rule, with the lower border of the mamma itself. The remaining portion of the incision is made in the form of an ellipse about the nipple, with its long axis nearly vertical, or, rather, obliquely, from above downward and outward to the outer quadrant of the breast. This ellipse is so planned as practically to make its outer curve parallel with the line of the first incision made, and thus to present, when completed, a quadrilateral flap with its base upward and entirely free below. This incision, of course, is carried through the skin and fascia down to the underlying muscular structures (Fig. 1).

In the actual procedure, as before said, only the first incision is used in the early stages of the operation; but, if necessary to give greater space, a portion of the incision splitting the pectoral fold may likewise be made. As this incision is carried down through the skin and superficial fascia, it exposes the fibers of the pectoralis major muscle converging well to its tendinous insertion in the humerus. At the lower point of this incision, where it curves along the under border of the pectoralis major, the index finger of one hand is now shoved up underneath the pectoralis major muscle and brought out again at its upper border, so that the entire pectoralis muscle is thus hooked up on the index finger, and by blunt dissection separated out to its tendinous insertion. If, however, one wishes to follow the suggestion of Dr. C. H. Mayo and leave the clavicular portion of the pecto-

ralis muscle, this can easily be accomplished by bringing the finger up through the interval, usually well marked, between the clavicular and sternal portions of the muscle, and thus the clavicular portion can be separated and left in place. With the tendon of the pectoralis muscle thus lifted up, as shown in Figure 2, it is now divided by the scalpel very close to its insertion into the humerus. The muscle immediately retracts toward the chest and exposes, underneath, the pectoralis minor muscle invested



Fig. 1.—Outline of skin incision complete, showing formation of flap A.

in its fascia, which above runs to the clavicle and below spreads out over the chest walls. This can easily be exposed by blunt dissection by the finger, which is now likewise inserted under the fibers of this muscle, which is now isolated as was the pectoralis major. It is also divided (Figure 3) close to its attachment to the coracoid process of the scapula. As to the pectoralis minor, like the pectoralis major, also retracts toward the chest,

the wound is held apart by retractors or by the fingers of an assistant, and the axillary space is now widely exposed to view from the front. As a rule this exposure can be made without encountering any bleeding vessels which will require clamp or ligature. Likewise we now have a wide exposure of the axilla for thorough dissection, without in any way having touched the breast or made any extensive division of tissues.

The axillary vein is now in view, and to its outer side and parallel to it, an incision is made with the scissors of the fascia which surrounds the vessels. The fascia is now stripped off, usually by blunt dissection and gauze, supplemented by an occasional snipping with scissors; the operator works steadily from without inward toward the chest, and clearing fascia, glands, etc., as he goes. In this way the axillary vein and artery are isolated, and the branches supplying the axilla and going on to the chest are made



Fig. 2.—Division of pectoralis major muscle at insertion through primary vertical incision.



Fig. 3.—Division of tendon of pectoralis minor at insertion.

plainly apparent (Figure 4). These vessels are at once double-clamped and divided between clamps. I have usually found it necessary thus to ligate about three or four sets of vessels. Time is saved by immediately ligating these vessels and then removing the clamps. Thereafter there will be no trouble with hemorrhage from the axilla, excepting, occasionally, from little veins in the cellular tissue further back toward the scapula or toward the chest. These incidental vessels, as a rule, will not be more than three or four in number and are usually ligated immediately after the clamping. Beginning thus at the apex and outer border of the axilla, fascia and glands are completely cleared by gauze and scissors dissection, working from the vessels inward toward the chest.

As this clearing of the deep axilla is completed, the



Fig. 4.—Clearing fascia and glands from around axillary artery and veins, isolation at branches to fossa for primary ligature.

original skin incision is also completed by carrying the horizontal incision over to the chest and marking the outer half of the ellipse so as to permit the flap to be raised and turned upward toward the clavicle (Figure 5), thus giving a deeper exposure of the attachments of the pectoralis muscle above and in front. It is important that a small tenaculum forceps should be placed at each angle of this flap when it is completed, as it will be of much service later on. The dissection is now completed usually with gauze, the tissues are loosened up underneath the pectoralis muscles under the breast and toward the chest. The point of attachment of the pectoralis minor to the ribs is cut from underneath, flush with the ribs and the costal muscles. From underneath the operator now loosens up the pectoralis major to its fixed points of origin from clavicle and sternum. While



Fig. 5.—Flap completed and turned upward. Branches from axillary artery and vein ligated; dissection being continued from apex of axillary fossa downward and outward beneath retracted pectoral muscles.

this is being done the breast is forcibly pulled back so as to expose the deep cavity of the wound. The pectoralis muscle is now severed from beneath, close to its points of bony attachment, and the perforating branches of the internal mammary which supply the vascularity of the breast are caught as soon as divided as they come through the chest wall (Figure 6). Usually two or three of these vessels will spurt, but they can be immediately caught with forceps and later tied. After the pectoralis major muscle has been entirely severed from beneath, the breast is allowed to drop back into its normal position, the skin incision is completed and the breast and the pectoral muscles underneath are finally clearly removed. Branches of the mammary artery which are clamped are now tied and the forceps removed.

Under these circumstances the skin incision practically does not bleed

at all, and it will be noticed that at no time during the operation were there more than a half-dozen clamps on the wound. As a matter of fact, the operation could easily be completed with from one-half dozen to one dozen clamps at the outside. This is made possible by the fact that all vessels are ligated as trunks at their points of origin instead of dealing with a large number of peripheral branches, as is usual in other operations. The extent of fascia dissected in this operation is the same as in any other thoroughly radical breast amputation.

The removal of infected tissue now being complete and the wound dry, the next step is to place the flap and close the wound; these also present points of distinct originality.

The quadrilateral flap of skin and superficial fascia which originally formed the anterior covering of the axilla is now stretched out

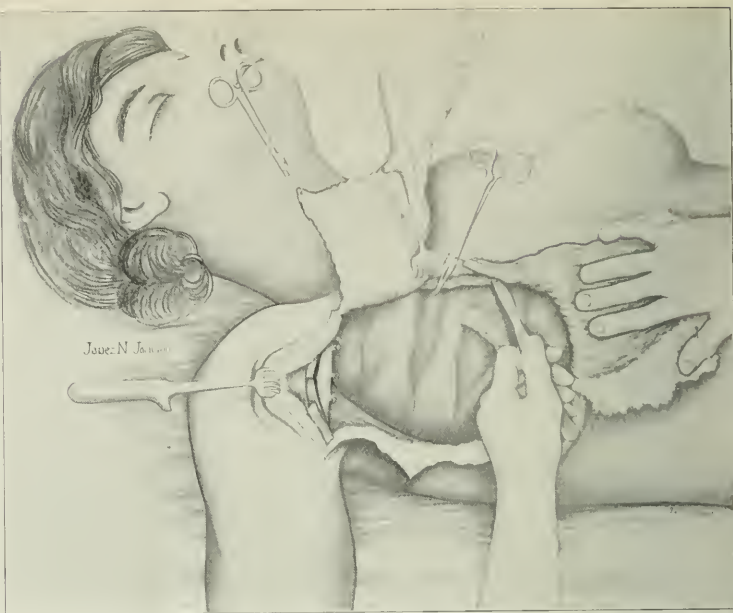


FIG. 6.—Axillary dissection completed. Division of pectoral muscles at origin from beneath. Mammary branches caught and ligated on division. Amputation completed.

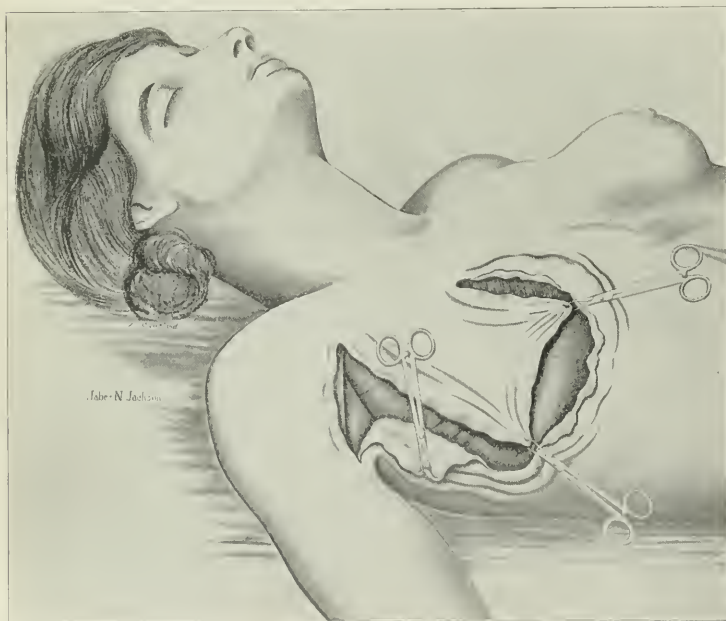


FIG. 7.—Amputation completed. Flap A, the corners of which are held by tenacula, is drawn over to cover the chest defect and the wound is closed by plastic adjustment. (The apparent laxity of the tissues is erroneous.)

by tenaculum forceps and transferred inward to cover the defect of the chest wall created by the removal of the skin of the breast about the nipple (Figure 7). This flap, which is one of the distinctive features of the operation, will always contract after it has been entirely loosened and will look as though it could be of but little service. A couple of tenaculum forceps in the angles, with probably another pair on either side, will spread it out until it covers a surprising amount of space.

As the flap is now drawn over on the chest, I usually fix it by attachment to the corresponding skin margin, as shown in Figures 7 and 8. Another distinctive point now consists in catching up, with the tenaculum, the margin of the lower portion of the pectoral fold, which represents the integument which formed the original floor of the axilla and which in thin



Fig. 8.—Flap in place and fixed by tenacula. Loose skin of original axillary floor drawn upward to complete covering and hugging about axillary vessels, thus obliterating fossa axillaris.

subjects is often very marked. The tenaculum on this margin is placed at such a distance from the lowest point of the first vertical line that when drawn upward it will bring this skin point up to the original beginning of the first incision beneath the clavicle. This maneuver brings the loose skin from the floor of the axilla closely up around the axillary vessels and does away entirely with the axilla as a cavity in the subsequent anatomy of the individual. These tenacula likewise are usually clamped and mark these fixed points of coaptation, as seen in Figure 8.

I generally now place an approximation suture of silkworm gut at these points to steady my subsequent suturing. The remaining portion of the incision may be closed either with interrupted or continuous sutures, as desired; or, as I have frequently done, by the use of subcuticular su-

tures of silkworm gut. It is most surprising, after this flap has been spread out and approximation properly made, how little tension there will be on the suture line. Frequently the subcuticular stitches will suffice without the use of multiple sutures. A stab puncture in the lowest recesses of the wound space behind furnishes opportunity for drainage tube.

When the operation is completed (Figure 9) it will be observed that there is an appearance which has been likened to that of a dipper, with its handle running vertically along the inner border of the arm, paralleling the deltoid, the bowl of the cup being represented by three lines, each at right angles to the other, on the chest wall. There is thus no opportunity for linear contraction interfering with the function or utility of the arm.

This operation will be much better understood by reference to the illustra-



Fig. 9.—Suturing complete. Tension sutures at the angles. Drainage in axilla.

tions which are represented herewith, and its advantages will be much more appreciated on practical trial.

In conclusion, I believe that this method has the following advantages:

First: The flap forms a covering for the chest defect, as a rule without any tension, and thus almost entirely obviates the necessity of grafting, which is so frequent in



Fig. 10.—Case 2. Picture taken two weeks after operation.

other methods. In fact, I have not found any patient operated on by my method who required grafting. Of course, this operation is not intended for cases in which



Fig. 12.—Case 4. Picture taken two weeks after operation.



Fig. 11.—Case 3. Picture taken four weeks after operation.

there has been extensive previous ulceration or in which there is not healthy tissue for a flap of any character.

Second: The drawing of the skin up to the arm does away with the axillary fossa, and thus with the large space which Nature would have to obliterate by formation of scar tissue, with the resultant pressure on the axillary vessels and nerves.



Fig. 13.—Case 5. Picture taken three weeks after operation. This patient shown at session of Western Surgical and Gynecological Association.

These first points are the ones which would probably be most striking to one who has not seen the operation.

Third: The ligation of all vessels at their nearest point of origin does away with the use of a large number of hemostatic forceps, which cause loss of time, to say nothing of the inconvenience of having a large num-

ber of instruments in one's way. I have in no instance used more than one dozen forceps in this operation, and can usually do the work with about six. The operation is thus shortened, so that, as a rule, I find that it requires from forty minutes to one hour or thereabouts to complete it. In fact, I have never run beyond an hour, even doing the operation slowly, as I have in most cases,



Fig. 14.—Case 7. Picture taken four weeks after operation.

for the purpose of demonstrating this new technic, and I have done the operation in forty minutes.

Fourth: The most noticeable feature to the onlooker, when the operation is done in the manner described, probably is the marked absence of hemorrhage, so that it can almost be called a bloodless operation.

Fifth: The entire technical portion of the operation is completed before the chest is exposed by removal of the breast; therefore long exposure of an enormous area of raw chest surface, with the attendant shock, is done away with. As soon, in fact, as the breast is removed the wound is ready to be closed.

REQUIREMENTS FOR A SUCCESSFUL CAREER IN SURGERY.*

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All of us can bear witness to the fact that to-day there are men engaged in the practice of surgery who, by reason of their lack of proper training, are thereby doing injustice to themselves, to the profession and to the public. Since there could be no greater mistake on the part of any young man than the selection of a specialty for which he lacks the necessary requirements, a general consideration of just what qualifications are needed as a basis for a successful career in surgery seems to me a subject worthy of discussion on this occasion.

So forcibly has this matter appealed to me for many years that very shortly after my election to this position I determined to take advantage of the opportunity of dealing with the subject on the present occasion, with the hope that my words, coming through this body of men, who are teachers of our great art, whose utterances are authoritative and whose precepts are accepted, might carry with them a certain amount of reflected authority and might serve to deter some at least from entering a field for which they are not equipped, and might even, perhaps, cause some others who are now rashly engaged in the so-called practice of surgery either to supply their deficiencies or to abandon the calling.

Although I had the privilege of hearing the oration of the chairman of the Section on Surgery and Anatomy of the American Medical Association at the Portland session, in which he treated the same subject in a most forceful, lucid and emphatic way, this seems to me no reason for abandoning my original intention, but rather a proof of the importance of the subject and an encouragement to follow up his opening, even though some similar thoughts may of necessity be dwelt on.

ATTRACTIVENESS OF SURGERY.

To the recent graduate in medicine no department of his chosen profession appeals with the same force as does surgery. While a student he has been impressed by the brilliancy of the results secured by his professors before his very eyes; at the meetings of the alumni the clinics in surgery have been crowded, while those in other branches have usually been either slimly attended or else attended as a compliment to the individual holding them rather than from actual interest in the subject; in most medical colleges the prominence of the professors of surgery in all faculty affairs is well known; while, considering the more material side of the question, he has little trouble in ascertaining that it is no unusual thing for a surgeon to secure for a single operation, occupying but an hour or two or even less, a fee greater than the entire collections of the general practitioner for a week's steady work, with broken rest and with cares and responsibilities innumerable. On leaving college, if he enters hospital service, these facts are impressed on him with even greater force; and later on, having himself entered the ranks of struggling practitioners, the same lessons are borne in on him with increasing emphasis.

Little wonder is it then that so many young medical men, bearing all these things in mind, decide that they, too, will enter this alluring field, where, they believe, they will effect such marvelous results, in brilliant cures, in abundant pecuniary reward, in the homage of their fellow-men, and, if moved by even higher motives, in the actual good they may do to suffering humanity.

These young men are all too prone to see but one side of the picture and to overlook the fact that here, as in all other pursuits, success comes only as the reward of special fitness.

The term surgery is still synonymous in the popular mind with cutting, and at once calls up visions of horrors of the operating room, with its rows of glistening instruments, the nauseating odor of the anesthetic, the insensible patient, and blood. Holding this view of surgery itself, surgical ability is commonly held to be identical with mere deftness of operative technic, while skill and promptness in diagnosis, the recognition of the possibilities of nonoperative measures, the power to distinguish between operative and nonoperative cases, the selection of the most suitable operation, judgment

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in knowing just how far to go—these and numberless other things of a similar nature, which constitute the real tests of surgical ability, are given little thought.

Were this failure to draw the correct distinction between the true surgeon and the mere skilful operator confined to the lay mind consideration of this subject on the present occasion would lose its point. But these same ideas, to a less exaggerated extent, it is true, find place in the minds of many of the young men for whose special benefit these remarks are intended.

PROFESSIONAL QUALIFICATIONS.

In a certain sense the preparation of the future surgeon may be said to begin before his birth, since blood will tell in surgery as elsewhere. Certainly the environment of very early life has a marked influence, for here the foundations of his character are laid, and even at this time there may be awakened in him a liking for the healing art which will have much to do with his selection of a career later on.

The importance of an academic education is too well recognized to require more than passing mention. Many a man has attained success in surgery without this advantage, but we are dealing with the rule, not the exceptions. This academic education should be truly liberal, both in quantity and quality, and should include as much as possible of studies of a scientific nature, especially biology, physics and chemistry. Of these three branches physics will prove of the greatest use to the surgeon, while biology and chemistry are branches of more practical value to the general practitioner. But the scientific habit of thought can not be too soon established, hence every study of this class is of service. At this time, too, will be laid the foundations of that general culture which will prove an invaluable possession in after life.

At the very beginning of his medical studies the best available school should be chosen. While at the medical college our future surgeon, no matter how firmly he may have decided on surgery as a career, should secure as thorough an all-round medical education as possible, not neglecting those branches which, as seems to him then, are not directly related to the practice of surgery. Only thus can he attain that breadth of view which will later on enable him to realize that the patients who come under his care are subject, in addition to the condition for which he is especially consulted, to the many other ills, both medical and surgical, which afflict mankind in general. Only thus can he appreciate the influence of mental conditions and gain an insight into the natural recuperative powers of the human system, both of which should be factors in influencing his decision as to the propriety of operating and in considering the question of postoperative recovery. Only thus, in short, can he hope to avoid the warping which is only too commonly seen in specialists in every branch, and which, so far as it relates to surgery, has given rise to the not altogether unjustifiable popular dread of consulting a surgeon, lest doing so should of necessity mean submitting to an operation.

After the completion of his course at the medical college a term of hospital service is nowadays considered an absolute essential. No matter what advantages the medical college has afforded in the way of clinics and opportunities for practical work, the newly-fledged doctor must learn in the school of actual experience. If he has real ability he will undoubtedly learn in private practice, but it will be only after many and costly mistakes, many of which may be avoided by proper hospital training.

In the matter of deciding what hospital he shall enter (providing it is with him a matter of choice) the personnel of the attending staff and the rules as to the duties of the house staff are the two points of chief importance. Service in the largest and most pretentious hospital under men of mere mediocrity and with improper discipline is far less to be desired than a position in a hospital where, perhaps, the cases are few, but are seen under a master, and where the interne's time is divided into terms of service in both the medical and surgical departments, in the order named if he aspires to enter the practice of surgery afterward. In the best hospitals to-day the new recruit occupies at first an entirely subordinate position, gradually being given more and more responsibility as he becomes qualified for it.

Having completed his term of hospital service, many young men find it to their advantage to undergo a still further apprenticeship as special assistant to some surgeon of prominence. This affords the opportunity to observe more intimately the methods of some single man of ability and is of further value in giving an insight into the manner of dealing with private patients, a knowledge of which often decides between success and failure.

What has been said of the necessity of other things besides mere operative ability must by no means be taken as minimizing the importance of the latter. The diagnosis having been made, and after the exercise of proper judgment in deciding as to the advisability of operating and as to what operation should be undertaken, the best surgeon is he who possesses the greatest operative skill. This, though perhaps the most easily acquired of all the accomplishments of the surgeon, demands longer experience. Here, too, as in the attaining of other acquirements, the time spent as hospital interne and as assistant to some able surgeon will prove invaluable. Daily observation of the methods of others who possess the operative ability he himself wishes to attain is a prime essential. Thus will he unconsciously become familiar, in a practical way, not only with the principal operations themselves, but also with the thousand minor details which are indispensable. He will, moreover, learn how to meet the many emergencies which inevitably arise during an operation and which demand prompt and decisive action, and he will have impressed on him the necessity of being ready at any stage of the operation, to modify the opinions formed beforehand, and, in consequence, similarly to modify the operative procedure, either in whole or in part. He will learn how to bring to bear that nice judgment in deciding, while operating, between those cases which will admit of the most deliberate, though never dallying, attention to the minutest detail and those in which it is imperative to keep the patient as short a time as possible on the table, even at the sacrifice of otherwise important details of the operation.

After this he will still have much to do before he is himself an able operator: for all things appear easy and simple when done by a master hand, and no amount of mere observation of the work of others can of itself make a good operator. Operations on the cadaver and on the lower animals are invaluable in conferring technical skill without any attendant risk to human life or well-being. Along with this he may undertake some of the simpler operations on the human subject, gradually advancing to those of greater difficulty in proportion as his experience in diagnosis becomes more extensive, his judgment more trustworthy, his eye and touch more practiced and his hand more steady.

During his entire hospital experience he will be constantly impressed with the fact that the possession of mere brilliant operative ability, unless combined with the other qualifications of a surgeon, may make a man a dangerous surgeon rather than a great one. For the same reason antiseptic and aseptic surgery, whose benefits to the human race can scarcely be overestimated, are not an unmixed blessing, for, by the very safety which they confer on surgical operations, they enable many men lacking the qualifications of a true surgeon to undertake capital operations with immunity from immediate ill consequences.

In connection with the value of the training as hospital interne a few words as to the general attitude of our young surgeon during this period of his career seem to me important. It is no uncommon thing to find even the newest recruit in hospital service undertaking to assume an importance utterly out of proportion to his ability, or, rather, in inverse proportion thereto. This is shown most prominently in the tone assumed in speaking of the members of the attending staff, finding expression not infrequently in actual criticism of his superiors in the presence of his fellow members of the house staff, before the nurses, and, not infrequently, before the patients themselves. Leaving out of discussion the woeful breach of professional ethics which such a course involves, these young men should realize that they can best secure the full advantages of their hospital training by confining their attention strictly to their own especial duties. The really valuable assistant is he who does well the things falling in his proper domain. If he does these conscientiously he will have neither time nor inclination to indulge in meddlesome criticisms, and by doing his own part well he will not only inspire such confidence as will lead his superiors to entrust to him work of ever increasing importance, but he will gain insight into the responsibilities resting on a surgical assistant, which will stand him in good stead when he himself shall need help in this direction.

Having completed his college course and served his apprenticeship as hospital interne, and perhaps as special assistant, our young man is now ready to start off on his own responsibility. In some cases this step is made easy by his now being taken into partnership by the surgeon to whom he has acted assistant, but usually this is not the case, and at this time he casts off from his moorings and begins an independent career. And now, no matter how thorough his training, days of discouragement are likely to follow, days during which he may be further disheartened by seeing men of far inferior parts succeeding by means of tricks which he would scorn to employ or perhaps by means of some special pull. His attitude during this time should be that expressed in the words of Confucius, who said: "I will not be concerned at men's not knowing me; I will be concerned at my own want of ability." If he is all right in the last respect, gradually, with such work as will come his way (some of it from those who have all along been watching his career, and some of it thrown in his path by his former associates), and, especially, sustained by the knowledge of his own fitness and power to cope with whatever may come along, success will surely follow.

Most men at this stage of their careers find it necessary to take any kind of practice that offers. This is a fortunate state of affairs, since the same reasons which made it advisable for our young man to neglect no branch of his medical studies as a student now make it important for him to acquire that breadth of view which

is notably absent in the man who settles down too early in life to the exclusive practice of a specialty. As his work increases he may gradually find it possible and advisable to confine his attention more and more to surgery alone.

GENERAL QUALIFICATIONS.

Besides the special qualifications which have thus far been considered, it is scarcely necessary to do more than merely mention the many requirements of a general nature, which, while of essential importance in the development of the able surgeon, are of equal importance to success in any shape of life. Robust health, tireless energy, rigid honesty, temperate habits are requisites in any successful career. Attractive personality and abundant *savoir faire* are desirable here as in every calling in which one has much to do with one's fellow-men.

It may be confidently asserted that any young man equipped by nature and by training along the lines above laid down, and who has given careful thought to the selection of a proper field for his activities, may count on a reasonable measure of success as a surgeon. There are in our country to-day thousands of men who have thus risen to responsible position and who may be regarded as successful surgeons. Of these thousands, a considerable number have gone further and have come to be recognized as surgeons of prominence, while still others, a very few, have attained such eminence as to be recognized as the real leaders of our profession.

Will the means by which these last have reached their present position admit of successful analysis? Not to more than a limited extent; for here, as in all cases where we have to deal with true genius, there is an elusive something which ever evades our grasp. Yet we can usually understand, in those instances which come under our immediate notice, somewhat of the factors which have contributed to the end. Unusual energy and determination, courage which never fails in the face of difficulties or even of temporary defeat, quickness of intellect in placing at their true value the results of the research of others, thus avoiding the error of being misled by attractive fallacies, while, at the same time, promptly seizing and applying discoveries of real value; boldness of initiative, never going to the extent of dangerous radicalism; broad views in dealing with one's patients, with one's fellow-practitioners, and with the world at large; and, lastly, that indefinable something which we call personal magnetism—these are among the factors which may serve to convert mere success into pre-eminence.

A single small class of men may perhaps constitute an exception to all that has thus far been considered. In every lofty calling in life we find a few men—at times some of the very ablest of their profession—who apparently defy all the ordinary rules which apply to their fellows in the craft. And so, as in similar cases in other fields, we occasionally find men who seem to have been born surgeons, who with no apparent external advantages over even the least favored of their fellows—save such advantages as their own persistence, urged by unquenchable fire of ambition, has wrested from adverse environment—go on to achieve not only success, but distinction and fame. These are but the exceptions which prove the rule, and even to such men at the beginning of their career, the same advice should be given, since thereby the unfit man might be restrained from committing a fatal error, while he who has in him the fire of true genius will not be deterred by words of any man.

In conclusion, we must realize that this is a subject which concerns mankind in general; therefore, is it not

incumbent on us, as teachers and practitioners of surgery, to make it plain to the public that there is a material difference between the trained surgeon and the novice? This education will enable the public to discriminate in a wholesome manner and will ultimately have the effect of rendering it apparent to the candidate for surgical practice that he must properly equip himself before he can stand before the world as a representative of the great surgical art.

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A CRITICISM OF SOME OF THE THEORIES REGARDING THE ETIOLOGY OF GOUNDOU AND AINHUM.*

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My interest in the two rather bizarre tropical affections mentioned in the title of this paper has lately been increased by the opportunity of examining several cases of each disease. In reading over the views commonly held to account for their origin, one is struck by the fact that most of them are purely theories and, like most theories, not free from flaws. A short review of some of these may help to clarify what little knowledge we possess concerning the possible factors giving rise to the obscure conditions known as goundou and ainhum.

GOUNDOU.

SYNONYMS.—*Anakhre* (Agl name), *Henpuye* (Gold Coast) *Gros nez*, *Mti* (Zanzibar), *Big Nose*, *Dog Nose*, *Uyulue* (Bantu name).

There have been proposed, among others, the following theories to explain the presence of the growths:

1. That they are a sequel of yaws (Chalmers).
2. That the condition is a disease *sui generis* (Brad-don).
3. That the condition is an example of atavism referable to some tribal peculiarity of the original negro stock (Strachan).
4. That it is a manifestation of syphilis (Friedrichsen).
5. That the tumors consist of malformations due to non-union of the nasal and frontal bones (Keng).
6. That they are caused by the presence of larvae of insects in the nostrils (Maclaud).

The theory that goundou is a sequel of yaws has been put forward by Chalmers, Mell and others. My objections to it may be summarized as follows: (1) The only persons suffering from uyulue (goundou) whom I have seen in Portuguese West Africa (two in number) denied ever having had yaws showed no traces of that disease and were from a district where yaws is almost unknown, a rare imported case being noticed only at long intervals. (2) The symmetrical double growth is against this explanation. (3) Its general geographical distribution does not agree with that of yaws. (4) According to reports, a much larger proportion of men than of women are affected, while in yaws both sexes are affected without distinction.

The second theory that it is a disease *sui generis* is really not an etiologic theory at all, as it attempts no explanation of the symptoms. If by the phrase is meant that goundou is due to a specific micro-organism, it is enough to reply that no such organism has been described.

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Strachan's suggestion that the condition may be an instance of atavism is not reasonable in view of the fact that the structure of the tumor, according to those who have studied it most carefully, shows it to be the product of an inflammation. Strachan's observations were made, I believe, in the West Indies, and at least one of his cases was congenital.

The connection of goundou with syphilis is open to most of the objections against its identification with yaws.¹ In my own cases syphilis must be excluded, with the alternative of considering the two cases of goundou (which showed no other symptoms whatever) the only examples of that infection ever seen in an isolated interior bush tribe which I had under observation for several years. Another point is the fact that the coast tribes of southern Angola, among whom syphilis is rife, are no more subject to goundou than the people above mentioned.

The hypothesis advanced by Dr. Keng in the far East that goundou is a congenital malformation due to lack of union of the nasal and frontal bones is founded on the study of one case in which hydrocephalus developed with the tumors. A comparison of his description with my case notes leads me to believe that his case was not goundou at all. The facts that the tumors were soft and pulsating and painful when touched would alone distinguish them from the hard, bony, insensitive growths described by all observers in Africa.

Maclaud's original idea that the process is, in the first instance, set up by the presence of dipterous larvæ in the nostrils has not been confirmed by the researches of later observers. Manson points out, too, that the symmetry of the growths is difficult to account for on this hypothesis.

It will be seen by this rapid résumé of ideas regarding the cause of the peculiar affection under consideration that none of the explanations proposed rest on anything more definite than conjecture. The tumors are doubtless a hyperplasia, probably due to an osteoplastic periostitis with a very definite cause which, however, has not yet been demonstrated.

AINHUM.

SYNONYMS.—*Gudurum* (W. Africa) *Quijila* (Brazil), *Banko-Kerendé* (Soudan) *Sukha-pakla* (India) *Ezerése* spontaneous, *Esola*, *Ombanja* (Bantu names).

I shall consider in connection with this affection the following etiologic theories:

1. That ainhum is a lesion of leprosy (Zambaco).
2. That it is caused by injuries to the toes (da Silva Lima).
3. That it is due to a trophoneurosis (Schenbe).
4. That it is a circumscribed scleroderma (Corre).
5. That it is a congenital spontaneous amputation (Proust).
6. That it is the result of self-mutilation by ligatures, the wearing of toe rings, etc. (Gongora and others).

As to the first hypothesis, I have several times lately seen the suggestion that ainhum may be a manifestation of leprosy. Some of these communications enter into the question with considerable definiteness, and in one instance several cases are cited in which all of the patients are reported to have had leprosy parents or relatives and to have evinced signs of leprosy aside from ainhum. All this is, of course, Zambaco Pasha *rediri-*

1. I do not here enter into the discussion of the identity of yaws and syphilis as maintained by Hutchinson, and more recently by Schenbe in his "Die venerischen Krankheiten in der warmen Linder," p. 61. For the purposes of this paper the clinical manifestations as seen in typical cases quite suffice.

rus. This observer brought to the study of the question an unusually wide and accurate knowledge of leprosy, but seemed to have acquired a habit of annexing various complaints in order to bring them into line with his specialty. An instance in point is his contention that Morvan's disease in Brittany is only a mild form of leprosy, the virus having become attenuated through the isolation of a comparative old population. The identification of Morvan's disease as a form of syringomyelia did not, however, deter Zambaco from later claiming ainum, on theoretical grounds alone, as another example of attenuated leprosy. The question which Zambaco proposed to himself may be stated in the words which form the title of his communication to the Academy of Medicine in July, 1896: "*L'ainum des auteurs, constitue-t-il une entité morbide distincte, ou bien n'est-il qu'une modalité de la lèpre?*" and the verdict enunciated was "*L'ainum des nègres. . . est une lèpre légère, monosymptomatique, dactylienne podique, c'est-à-dire mutilante des pieds.*" Such a conclusion is, of course, permissible from the hypothetical side, but on clinical grounds alone it should be remembered that the ainum-like constrictions sometimes seen in leprosy nearly always affect the fingers and are always connected with other symptoms of leprosy. One could wish, however, that the question had been approached from the pathologic standpoint. The bacillus of leprosy has been found in every tissue of the human body, except the muscles, and has a special predilection for the skin. It would certainly seem fair, then, to demand a demonstration of this bacillus in at least a few of the cases exploited as *Lèpre ainoïde*. The fact that the geographical distribution of leprosy and ainum (to say nothing of the racial distribution of the latter) does not coincide detracts, too, from the force of Zambaco's theory, which later authorities seem to adopt on the strength of his name and in connection with it carefully to shun any reference to *B. lepro* or other features which may be rigidly tested by scientific methods.

In this region, leprosy is not uncommon, while ainum is comparatively rare. I have collected three cases, however, concerning which I have recently published a note containing the following observations:

1. In none of these cases is there a leprosy lesion demonstrable.
2. In none of these cases is the characteristic facies familiar to those who are acquainted with negro leprosy present, nor are there any of the other early clinical symptoms of leprosy.
3. In none of the three cases is there a family history of leprosy (I have seen the parents of two of the men and the father and grandfather of the third).
4. Only one of the patients comes from a district in which leprosy is known to exist.
5. In none of the cases can *B. lepro* be demonstrated in the nasal discharge by Ziel Neelsen's method, and in one case in which I had amputated the offending toe no bacilli could be seen in a section of the integument from the constricted portion stained after the same method. The histologic architecture, too, is different from that of leprosy, showing only the familiar fibrosis and atrophy common to all cicatricial tissue.

Consequently, I must agree with de Brun (who reported the case on which Zambaco based his opinion above quoted) that "*l'absence, dans les cas d'ainum, du bacille de Hansen, semble démontrer qu'il ne s'agit pas d'une manifestation lépreuse.*"

The hypothesis originally put forth by da Silva Lima to account for the lesions was that the toes are cut by sharp grasses and the like, and the contracting cicatrix produces the condition as usually described. In opposi-

tion to this theory is the fact that the ailment has been noticed in negroes who usually wear shoes. But, as Manson remarks, "unless it could be shown that such individuals had always worn shoes this objection to the explanation offered would not apply." Another objection to da Silva Lima's theory is that the disease does not occur equally in all barefooted races. Even in Africa the geographical distribution is capricious. Again, it is stated that in Brazil ainum is becoming less common among the negroes who nevertheless go barefooted as in former days.

Scheube's suggestion that the lesions are the result of a trophoneurosis makes no attempt to explain the origin of the condition. Such a theory is in the nature of a *tertium quid*, and only puts the difficulty one step farther back.

The view of Corre and Despitets that ainum is a circumscribed scleroderma is open to the same criticism. Scleroderma is an induration of the skin largely due to hyperplasia of the connective tissue and muscle fibers of the corium. Its etiology is not known, although it has been connected with disease of the thyroid gland. It has also been described as following acute diseases and exposure. The local nature of the lesion in ainum does not accord well with these views. The thyroid glands in the three patients I examined were apparently normal.

An idea advocated by some (principally by Proust) is that we have to do with amputations which come about by constrictions of amniotic filaments during fetal life. Scheube well urges against this view the facts that such amputations "are congenital and occur on various parts of the body; they are not limited to the toes, are generally multiple and frequently occur simultaneously with other deformities; they, therefore, differ essentially from ainum."

The wearing of rings on the toes can hardly be seriously entertained as a cause. In the first place, one never sees or reads of rings worn by African natives on the little toes alone. Again, few tribes wear rings on the toes at all, and if the wearing of rings caused the affection the hands would be affected oftener than the feet. The statement that ainum is self-mutilation through tying strings lightly around the toes is groundless and has not been confirmed.

In conclusion, the above review teaches us that no definite and undisputed cause for the lesion has been advanced. I think that there is most to be said in favor of da Silva Lima's theory. Manson puts the case to the best advantage when he suggests that the condition "is provoked, at all events in the first instance, by wounds so easily inflicted on bare feet in walking through grass or jungle. The fold of skin in which the lesion of ainum commences is very liable, especially in the splayed-out toes of the negro, to be wounded in this way. If we examine the under surface of the joint flexures of the toes in many individuals of this race, even in those not affected with ainum, we often find the skin, particularly at the proximal joint of the little toe, thick, rough, scaling and sometimes even ulcerated. One can understand that continual irritation of this sort, produced and kept up by wounds from sharp grasses, would in time give rise, especially in the dark-skinned races so prone to keloid, to fibrotic changes in the derma, which might very well end in a sort of linear cicatricial contraction and ultimately in slow atrophying strangulation of the affected member."

I would insist that the groove around the toe in this

affection is, both macroscopically and histologically, a cicatrix. A probable factor in the prolonging of the irritations and inflammations set up by wounds and bruises at this point (which I have never seen mentioned by any writer on the subject) is the chigger, *S. penetrans*, which seems to have a predilection for this particular spot, especially if, as is so often the case, the skin be cut or torn. As to the fatty and atrophic changes in the amputated toe I use the words of McFarland, that their "true cause is not determined; it may be trophic or it may depend on local cicatricial formations."

TUBERCULOSIS AND PATENT MEDICINES.

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Since the beginning of the present campaign against tuberculosis a vast amount of literature bearing on the subject of preventive measures and cure in regard to the disease has been distributed among the laity. Besides what has been distributed by those desiring to educate the public, numerous articles have appeared in magazines. Almost every writer dwells on the point that there is no medical cure for tuberculosis and everything is laid aside for the so-called outdoor treatment, which all admit is the most important part of the treatment for tuberculosis when properly administered.

In our anxiety to educate the public on the subject we overlook the result of our therapeutic nihilistic statements, which often leaves the poor victim of tuberculosis convinced that a physician can give him no aid, as it has been acknowledged that there is no cure for consumption. In his fight for life and health he naturally turns to those who "promise" him relief. He eagerly reads every advertisement that comes his way, and tries one "remedy" after another, for, with the consumptive, while there is life there is hope. We do not have to go far to see the results. When one shark has got all the money he can out of the victim another is ready to pounce on to him with a "new cure." In this way a great percentage of the vast army of tuberculous patients becomes a revenue to the "patent-medicine" shark and the advertising quack, with his "sure-cure" and fake testimonials. That percentage is increasing every day through our means of false education, and the advice of the attending physician is set at naught, because patients have been pre-educated and taught the false doctrine that outdoor life is all that is required and "the doctor can do nothing to help cure consumption."

During a conversation recently with a prominent pharmacist he made the statement that sales in patent medicines had fallen off 50 per cent. in the last three months, and incidentally remarked that he seldom sold certain preparations except to consumptives. "They will drink any old thing so long as it is advertised to cure consumption." Now, on the one hand, we are endeavoring to educate the public in regard to the dangers of patent medicines and their uselessness, while, on the other, in trying to educate the masses as to the dangers of spreading infection and the best means to cure a certain disease, we are driving a certain class of individuals into the folds of the "patent-medicine" vendor and the advertising quack.

To be sure, we have no specific remedy for tuberculosis to the exclusion of every other remedy or measure. Nor have we for any other disease. What would be the

result in a case of tetanus were we to rely on a few injections of tetanus antitoxin without a knowledge of its action and how to use it in the different stages of the disease or in suspected tetanus infection? What would be the mortality in diphtheria were we to simply administer a dose of diphtheria antitoxin and then leave the patient to do as he deemed proper? Antitoxin has a specific action in diphtheria, but notice the anxiety of the attending physician and the special care he takes of his patient for several days, watching for the various complications which may occur; ready to check them if they appear.

Other acute diseases, such as pneumonia and typhoid fever, are caused by micro-organisms, and we have no specific remedy for them, but we do not preach broadcast over the land that there is no medical aid that can be given to patients suffering from such diseases. That these individuals require the care and advice of skilled physicians is a fact that none will dispute.

Tuberculosis is a slow disease, often requiring years to destroy its victims. It is also a disease with a tendency to recovery, if recognized early and properly handled, and during its long course the patient needs the advice and care of the skilled physician until the disease is arrested, and then supervision is required for some time after.

What does a layman suffering from tuberculosis know about recurrences, aspiration pneumonia, pleurisy with effusion, empyema, etc.? He does know that when certain of these conditions occur in the course of his disease, that he feels worse, and, if he be one who has lost faith in his physician through our newer education, he straight way goes and "fills up" on some dope containing opium or alcohol, perhaps both. We all know the results.

Climatic resorts to which consumptives flock seeking a return to health are a bonanza for the advertising quack and "patent-medicine" vendor. The stock argument of these sharks is that members of the medical profession have no cure for tuberculosis, and that physicians acknowledge this, while each of these "quacks" claims to have some "great" secret remedy discovered by some "eminent" man and that it is a "sure cure." The poor consumptive is only too ready to grasp at any help that may be offered him, and in the present condition of things these are the only men who "offer" anything, so far as a great many of the public see.

The high percentage of "cures" or arrested cases in sanatoria does not depend on the patient getting better air or nourishment than can be had elsewhere, but on the constant supervision of the patients by skilled physicians and the proper administration of therapeutic measures suited to the requirements of the individual patient.

Up to the present time only a small percentage of those suffering from tuberculosis have been treated in sanatoria in this country, and the balance are scattered over our broad land in all conditions and stages of the disease, numbers of them vainly hunting for some one to hold out a hope of relief. Is it any great wonder that the uneducated or falsely educated easily fall a prey to the advertising quack?

It would be well for the community at large if some of our therapeutic nihilists would turn their talents in some other direction, and, if they wish to write for the education of the laity, write on some subject which the laity may understand and be benefited thereby.

The medical profession, as a whole, is an educated body and will eventually work out the therapeutics of tuberculosis, as it has in other diseases. In the mean-

time individual physicians will use the knowledge and skill they possess, as they have always done, for the welfare of their tuberculous patients and the community at large, teaching hygiene and prophylaxis and guiding their patients to renewed health.

SURGICAL REPAIR OF INJURED NERVES.*

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The principles of nerve suture are so intimately connected with degeneration and regeneration of peripheral nerves that a brief review of the histologic process involved may not be inappropriate. The method of regeneration of a mixed nerve has been the subject of much discussion, and even now there is no view that receives the general sanction of neurologists. The Wallerian or continuous theory, which claims that regeneration of the axis cylinder occurs from the central stump only, is being somewhat discredited. Recent researches tend to confirm the discontinuous theory or some of its modifications. Huber and Howell, in 1892, and later Belhe of Strassburg, have shown quite definitely by numerous experiments that in young animals regeneration of an injured nerve may be practically complete without any connection with the central end. In older animals regeneration without connection with the central stump also occurs, but is imperfect. Schütte,¹ after an exhaustive review of the literature, corroborates this and maintains that degeneration always occurs after division of a nerve, no matter how accurate the approximation or clean the wound, though degeneration and regeneration may proceed simultaneously. As would be expected, the destructive effect of suppuration increases degeneration in the central end. While Schütte concludes that central connection is not necessary to regeneration in a peripheral nerve, it is true that such connection with the so-called trophic center must sooner or later be made in order to preserve the nerve in a healthy condition. Of course, there can be no physiologic function without this, no matter how perfect the anatomic repair may be. It is also true that regeneration is more prompt and more nearly perfect when the peripheral and the central ends are united than when they are separate.

It has been shown by a number of investigators that if a severed regenerated nerve is again cut, degeneration will take place in the distal segment, but the segment between the first and second cuts will not degenerate to any marked extent, though it has been entirely separated both from the cord and the peripheral segment. There seems to be no satisfactory explanation of this phenomenon, but its occurrence shows that neither the ganglionic cells of the spinal cord nor the peripheral nerve endings are essential to regeneration—a fact that might prove valuable where there had been multiple injuries along the course of a nerve.

In view of the constant degeneration of the peripheral segment of a divided nerve, it is somewhat difficult to explain the early return of function in many cases. Thus, Victor Horsley² mentions a case of suture of the ulnar nerve followed in twenty-four hours by return of

sensation in the little finger. Peterson³ reports a case in which the sciatic nerves of a dog were used to bridge a defect in the ulnar and median nerves in man with return of sensation the day after the operation. Two weeks after the operation, sensation was almost complete and the natural color of the hand was restored. There are many other reported cases following a somewhat similar course. Victor Horsley says they may be explained as follows: If a nerve is cut and the freshly divided ends are united, two excitable masses of nerve protoplasm are brought into contact, and one may conduct stimulating impulses from the other just as when two freshly divided pieces of muscle are fixed together excitement of one piece will produce contraction of the second by transmission of the electric energy which caused contraction of the first piece. For a few days after suture of a nerve the excitability of the nerve protoplasm remains active, then it gradually disappears as a rule, though occasionally it is permanent.

SYMPTOMS.

The symptoms of an injured nerve depend to some extent on the character of the injury. Complete aseptic division of a mixed nerve results in abolition of motion and sensation in the area supplied by this nerve and in simple atrophy, but no trophic disturbance, such as glossy skin or blebs, results. If, however, the lesion is an irritating one, trophic symptoms may appear, though the destruction of the nerve is only partial. Such disturbances occur after suppuration involving a nerve, or the gradual encroachment of a tumor or callus, or after constant pressure from a dense cicatrix. Pain is not present if the destruction of the nerve is complete and of a non-irritating nature. When the whole nerve is not severed, or if the lesion is of an irritating nature, pain may be severe and is due to the abundant supply of sensory nerves to the nerve sheath, which are not only excited by the injury, but stretched by the resulting vasomotor paralysis along the nerve. Electrical reactions, either galvanic or faradic, depend on the ability of the nerve to functionate to some extent. A nerve that has completely degenerated can no more convey electrical stimulation than could a fibrous cord, yet the fact that such stimulation fails to produce a contraction does not necessarily mean the complete absence of all nerve fibers, for some may exist, yet be so few in number and so feeble in conducting power as to produce no appreciable reaction.

TIME OF OPERATION.

The time which should elapse after traumatic paralysis of a nerve before operation for its relief is a question of much importance. B. Sachs⁴ says three and a half months after facial palsy is too soon to consider operation. Dr. Hammond mentioned the case of a boy who developed facial palsy after a mastoid operation, and, without any attempt at nerve suturing, motion in the affected muscle was first noticed 15 months later. Henricksen⁵ thinks it unwise to wait over a month if there is no improvement. Others advise waiting as long as 18 months before operating. Much depends on the character of the injury. If the nerve has been divided by a clean cut, as after a stab wound, and primary union has resulted, the surgeon would be justified in waiting 12 or 18 months for the normal functions to return; but if the injury was a crush, or if suppuration resulted,

* Read before the Southern Surgical and Gynecological Association, Louisville, Ky.

1. *Cent. f. allgemeine Pathologie*, vol. xv, p. 917.

2. *Practitioner*, August, 1899.

3. *American Jour. Med. Sciences*, April, 1899.

4. *THE JOURNAL A. M. A.*, vol. xlv, p. 1142.

5. *Lancet*, April 18, 1903.

two or three months should be all the time allowed to elapse without improvement. When there is compression, as from callus or a tumor, operation should be performed at once. No operation for nerve suture should be abandoned because of the length of time that may have elapsed since the trauma. While regeneration and good functional results are more liable to occur when there have been only a few months from the time of the injury to the date of operation, still a number of successful cases are reported where many years have elapsed since the injury. For instance, Brenner⁶ records a case in which successful suturing was done on the median nerve 10 years after the original injury.

METHODS OF OPERATING.

Before mentioning the different procedures used for the repair of defects in nerves, it may be well to call attention to the statement of Bowlby⁷ that the function of some nerves in the same individual is restored more readily than that of others. He says better results are obtained after suture of the peroneal or the musculo-

spiral nerve than after suturing either the median or the ulnar. If this be true it would not be accurate to compare results following one method of operating on the musculo-spiral, for instance, with a different method employed on the median, as the same operation that succeeded in the nerve whose function was easily restored might fail in a nerve more difficult of repair.

2. *Flap Operation.*—Flap operations consist of splitting from one or both ends of the nerve sufficiently long flaps to bridge the defect and suturing them together. There are a few successful cases reported, though this method is not popular, as too much healthy nerve tissue is sacrificed in making the flaps. Most of these operations have failed.

3. *Nerve Bridging.*—The term "nerve bridging" may be applied to that class of operations in which some for-



Fig. 1.—Taken January, 1905, about two weeks after the second operation and fourteen months after the first. This photograph shows the scar over the musculo-spiral and the hand flexed as far as possible at that time.



Fig. 2.—Taken January, 1905, about two weeks after the second operation and fourteen months after the first. Note the dull and crumpled appearance of the nails of the index and middle fingers as compared with the other nails; also the enlarged and glossy appearance of the distal joint and the last two phalanges of both of these fingers.

spiral nerve than after suturing either the median or the ulnar. If this be true it would not be accurate to compare results following one method of operating on the musculo-spiral, for instance, with a different method employed on the median, as the same operation that succeeded in the nerve whose function was easily restored might fail in a nerve more difficult of repair.

The surgical methods of repairing nerve defects may be classed as follows: 1. Simple suture. 2. Flap operation. 3. Nerve bridging. 4. Nerve implantation or anastomosis.

1. *Simple Suture.*—Under the head of suture are included not only those cases in which the ordinary technic of freshening the ends of the nerve and approximating them with fine sutures into the nerve substance and into the sheath is employed, but also cases in which other procedures are necessary to facilitate this approx-

imation. Resection of a portion of the long bone has been done when it was found impossible to coapt the nerve ends in any other manner. Dr. C. A. Powers⁸ has collected from the literature seven such cases, two of these operations being performed by Keen. Surrounding the site of the nerve suture by some kind of tube—tubulization—is advocated by a few writers and has been employed by Guelliot and by C. Foramiti. Foramiti⁹ uses the artery of a calf for this purpose. It may be employed fresh when it is taken aseptically from the calf and immediately used after rinsing in salt solution, or the artery may be boiled and then hardened in a formalin solution. It is claimed that such a procedure prevents adhesion of the nerve to surrounding tissue, and at the same time affords a direct path for the nerve fibers. Aside from the difficulty of securing a proper tube, the greater danger of suppuration following its introduction and the interference with the nutrition of the nerve are serious objections.

8. *Annals of Surgery*, vol. xl, p. 642.

9. *Archiv. f. klin. Chir.*, vol. lxxiii, No. 3.

10. *Annals of Surgery*, vol. xl, p. 632.

6. *Wien. klin. Woch.*, 1891.

7. *Lancet*, July 26, 1902.

animal was used to correct defects in a human nerve, and of these cases only 21 per cent. may be said to have terminated in a satisfactory way. He concludes that nerve bridging or transplanting should be discarded.

The nerve tissue transplanted from lower animals in all probability has no intrinsic value in repairing defects in human nerves, but merely serves as an organized tissue would under similar conditions in providing a path for the growing nerve fibers to follow, so protecting them from the surrounding tissues. The suture *à distance*, where several strands of catgut connect the ends of a nerve, involves exactly the same process and should be included under this head.

4. *Nerve Implantation or Anastomosis.*—The term "nerve implantation" may be applied to operations in which the peripheral and the central portion of an injured nerve are implanted into a neighboring healthy nerve, or in which the peripheral end only is so implanted. While nerve implantation has not been performed so frequently as nerve bridging, the results have been more encouraging, the proportion of successes being about 50 per cent. I do not include those operations for correction of deformities following such diseases as infantile paralysis, where the lesion is in the spinal cord and the nerve fibers are secondarily involved through their whole extent, but merely those cases where there has been some local injury to a peripheral nerve. Be-



Fig. 3.—Taken Nov. 16, 1905, about ten months after the second operation and two years after the first. Nails of index and middle fingers are short from loss of substance at tips of these fingers from previous ulceration, but are smooth and of normal color. Size and appearance of distal joints and phalanges of these fingers are about normal.

sides the clinical evidence, a number of experiments have demonstrated the feasibility of such an operation as implantation. In an experiment by Spitzzy,¹¹ the peroneal nerve was grafted onto the tibial. The clinical results were good, and microscopic examination of the site of the grafting plainly showed the passage of fibers from the tibial nerve into the implanted distal portion of the peroneal. As between the last two methods of correcting defects in nerves (that is, nerve bridging and nerve implantation), a study of the literature on this subject, both from an experimental and a clinical standpoint, seems to show the superiority of nerve implantation.

The following case of nerve implantation may be of interest both from a surgical and an anatomic standpoint:

Patient.—H. J., aged 21 years, was kindly referred to me by Dr. George Ben Johnston. He was a large, muscular negro, whose previous health had been good. Family history was of no significance.

History.—In August, 1903, he was thrown some distance by the explosion of a boiler. There was a fracture of the leg, a scalp wound and a severe trauma to the soft parts of the upper right arm. The bone was not fractured, nor was the shoulder dislocated, and the skin was only broken at a small place on the outer side of the arm. He was unconscious for several hours, but on recovering consciousness found his right hand and forearm paralyzed.

Examination.—Nov. 17, 1903, he came under my care. His other injuries were nearly well, but so far as could be made out complete paralysis of both sensation and motion existed in all of the forearm and hand except in those muscles supplied by the ulnar nerve and that portion of the skin supplied by the ulnar and the musculo-cutaneous nerves. In the upper arm the action of the triceps was unimpaired, but flexion was weak. Besides marked atrophy no trophic disturbances were present.

Operation.—An incision was made over the upper part of the



Fig. 4. Taken Nov. 10, 1905, about ten months after the second operation and two years after the first. Note good flexion of fingers and hand; also slight keloid development at scar over the median at the last operation. Just above this is part of the scar of the first operation.

course of the median nerve. The upper brachial artery was obliterated and no trace of the median nerve could be found. In the place of the nerve and artery was an indistinguishable fibrous mass. The ulnar nerve was normal. After extending the incision down to the middle of the arm the median nerve was found. It was in fairly good condition here, but the line of demarcation between healthy nerve tissue and an absolute fibrous cord was quite sharp and distinct. The median from its origin for a distance of two and one-half inches had been completely crushed and its sheath, with the remains of the brachial artery, formed a fibrous mass, in which no trace of nerve tissue could be found. It was impossible to stretch the nerve or to form a flap to bridge such a defect, so implantation into the ulnar was done. The median was cut almost across half an inch below the point where it first appeared healthy and the peripheral end sutured into a nick in the ulnar. A fine needle and fine chromic catgut were used, one suture being put into

11. Amer. Jour. of Orthopedic Surgery, August, 1904.

the nerve substance and several into the sheaths of the ulnar and median. Care was taken not to tie the sutures too tightly. The median was not cut entirely across, a few fibers and the outer part of the sheath being left, as they served to hold the nerve to the fibrous mass just above it and thus relieved some of the tension on the sutures. From the fact that the triceps was unimpaired, the injury to the musculo-spiral must have been lower down, so no attempt was made to find it and the wound was closed. Union was by first intention. The patient left the hospital two weeks after the operation. He reported later that improvement in motion and sensation began within a month after the operation. As he was not very intelligent it was difficult to get an accurate account of the progress of improvement, but it was evidently quite rapid after this time.

Further History.—On Jan. 15, 1905, he returned to the hospital. Flexion of all the fingers was present, though much stronger in the little and ring fingers than in the others. The thumb could be flexed or adducted as a whole, but chiefly from the carpo-metacarpal joint. The last phalanx could be flexed on the first very slightly. Much to my surprise, extension was present in the hand and all of the fingers and the thumb, and had evidently improved along with flexion. The probable cause of this will be discussed later. Sensation to pain and touch was present over the palm of the hand and palmar surfaces of the fingers and thumb, though over the ulnar side it was prompt and normal, while retarded and less acute over the region supplied by the median. Sensation to touch and pain was present over the whole forearm, though somewhat impaired over the back of the forearm and back of the hand, except to the ulnar side of the back of the hand and forearm, which was normal. Sensation over the back of the little finger was satisfactory and was also present on the back of the thumb and the ring finger, though not so marked. There was complete anesthesia over the backs of both the index and middle fingers from the roots of the nails to near the metacarpophalangeal joint, where it gradually blended into very much impaired and retarded sensation over this portion of the back of the hand. One of the remarkable features was the presence of trophic disturbances in the nails of the index and middle fingers. About four months after the operation ulcers appeared on the tips of these fingers and refused to heal entirely; at the same time the nails became crumpled. This condition is shown in the photograph taken January, 1905. There had been no injury to these fingers. No affection of this character was present at the time of the operation in November, 1903.

Second Operation.—A second operation was done on Jan. 17, 1905. Both operations were performed at my clinic at the Memorial Hospital, Dr. H. H. Levy, emeritus professor of medicine in the Medical College of Virginia, and Dr. J. W. Southall being present, in addition to the students, at the last one. A short incision just above the elbow exposed the median nerve, which appeared normal. The musculo-spiral was then exposed to the outer side of the elbow, where it lies between the brachialis anticus and supinator longus. It was small and yellow and presented distinct evidences of marked degeneration. This nerve was followed up the arm for three inches, where it was cut across and a fine silk suture inserted. With a closed hemostatic forceps an opening was burrowed beneath the biceps from the lower angle of the incision exposing the median to the lower angle of the incision over the musculo-spiral. The forceps then seized the suture previously placed in the musculo-spiral and so drew this nerve to the median. A slight nick was made in the median and the musculo-spiral was implanted with fine sutures of chromic catgut in the same manner as the median had been implanted previously. The wounds healed by first intention. The operation did not interfere with the motion of the hand or fingers, with the exception of apparently somewhat lessening the flexion of the thumb, which may have been caused by the slight nick in the median.

Postoperative History.—On Nov. 16, 1905, the patient reported for examination. He was greatly improved in every respect. The trophic disturbance of the index and middle fingers had disappeared and the nails have straightened, as shown in the photograph, though from loss of substance at the tips of the fingers these nails will always be shorter and more irregular than they would be normally.

The following report was kindly made for me by Dr. M. Call, adjunct professor of medicine in the Medical College of Virginia, and is the result of his examination of this patient Nov. 16 and 17, 1905:

"Extension of forearm good. Flexion of forearm excellent, with slight degree of pronation. With forearm extended, pronation and supination are good. Flexion and extension of wrist are both present, extension being the stronger, but both are of good force.

"Phalanges.—Flexion of little and ring fingers good, of middle finger less strong. Index finger has less strength than the middle, but all these fingers flex with considerable strength. All the phalanges flex except the first phalanx of the index finger, which has scarcely perceptible motion. Extension of all the phalanges occurs, that of the middle and index fingers being weaker than that of the little and ring.

"Thumb.—Slight flexion of terminal phalanx, less marked flexion in the first phalanx. Extension present in terminal phalanx, less marked in first phalanx. Abduction and adduction both present to slight extent. Very little backward movement. Rotation can not be accomplished. With the hand at rest the thumb is slightly adducted.

"Nerves.—Galvanic stimulation of nerves gives the following result: Ulnar, below the point of implantation, gives marked contraction. Stimulation of the median gives marked contraction, but weaker than results from stimulation of the ulnar, especially weak in the thumb muscles supplied by the median. Musculo-spiral could not be located at the radial point, though the corresponding nerve on the uninjured side showed marked contraction. Stimulation of area just over the region of posterior interosseous nerve gives marked response in muscles supplied by that nerve, though the contraction of some of these muscles was due to unavoidable direct stimulation of the muscles themselves.

"Stimulation of the ulnar nerve above the implantation of the median gave ulnar and median response, the ulnar group being markedly stronger.

"No anesthesia or paresthesia. Partial cutaneous analgesia was marked on dorsal surface of middle finger and on palmar surfaces of index and middle fingers. There is marked atrophy in the muscles of right arm, forearm and hand, as compared with the well-developed muscular left side.

"The nails on the index and middle fingers show evidence of past trophic disturbances."

CONCLUDING REMARKS.

There are two features of this case that call for particular attention.

1. The first is an anomalous nerve supply to the extensors of the forearm. They were completely paralyzed at the time of operation, but, as the triceps was normal, the injury to the musculo-spiral must have been lower down in the arm, and it was thought unwise to attempt any operation on it till the median had been repaired. However, after repair of the median the extensors improved along with the flexors. The second operation showed the musculo-spiral degenerated to a marked degree, and, after complete section, motion of the extensors was not interfered with; so this improvement of the extensors could only be accounted for in two ways: (1) There may have been a high bifurcation of the musculo-spiral, the radial following the normal route of the musculo-spiral, the posterior interosseous, which may have been only temporarily injured, taking some other course. (2) The posterior interosseous may have been given off from, or at least have freely communicated with, the anterior interosseous of the median.

I stated the case by letter to Dr. George A. Piersol, professor of anatomy in the University of Pennsylvania, who replied as follows:

"By your first operation we may assume that the median was regenerated. Now in some reported cases the anterior in-

terosseous of the median had communications with the posterior interosseous of the musculo-spiral. Supposing that such paths were present, might not their existence have guided an unusual number of regenerating fibers to the extensors under the stress of needed additional supply, since the usual source (the musculo-spiral) was defective?

Dr. C. M. Miller, professor of anatomy in the Medical College of Virginia, agrees fully with Dr. Piersol in this solution of the case.

2. The second point of special interest is the trophic disturbance on the backs and tips of the index and the middle fingers. It is claimed by many anatomists that the tip of the index finger and the back of its last phalanx, together with the tip and back of the last and a portion of the second phalanx of the middle finger, are supplied by the median and not by the radial; though even these anatomists admit that there is free communication between the radial and median in this region. It must also be recalled that the root of the nail extends half way between its apparent base and the last phalangeal joint. Trophic disturbances in this area would unquestionably affect the nail profoundly, and the supply of the radial could very readily reach this region from a normally distributed nerve. But, in this case, with such an evidently anomalous nerve supply of the forearm and hand, it is likely that the radial went as far as the tip of the index and middle fingers. The fact that the posterior interosseous probably derived most of its nerve fibers from the median would tend to show that practically all of the fibers from the musculo-spiral went into the radial nerve, which would then be larger than usual, and consequently would be likely to be more widely distributed than is usually the case. The branches of the ulnar can easily account for the undisturbed condition of the ring finger and those of the musculo-cutaneous for the healthy appearance of the thumb. If the trophic disturbance of the index and middle fingers had been due to the median nerve, the thumb would have been affected. Mr. Hilton, in his classical work,¹² records the case of a sailor in whom the pressure of callus on the median nerve produced ulceration of the index and middle fingers and of the thumb. All of the ulcers healed promptly when pressure on the median was relieved. As has been mentioned above, complete mechanical destruction of a nerve unaccompanied by irritating conditions should not produce any trophic disturbance beyond simply atrophy. Such was the case with the median nerve. The radial, on the contrary, had undergone marked degeneration and the musculo-spiral had evidently received sufficient injury to cause total suspension of the function of the radial for some months, with the probability that without implantation its function would never have been satisfactorily restored. The lesion was probably of such a character that after several months just enough of its function returned to promote the trophic changes mentioned. That the radial nerve at the time of the second operation was incapable of conducting impulses to any marked degree was shown by the absence of appreciable change in the area of anesthesia over the backs of the index and middle fingers following the section of the musculo-spiral nerve. The disappearance of the trophic symptoms a few months after the musculo-spiral was implanted into the median also tends to show that they were due to the radial nerve.

303 West Grace Street.

12. Hilton: Rest and Pain, p. 195.

DRUG ADDICTIONS.

PRELIMINARY REPORT OF THE COMMITTEE IN SECTION ON NERVOUS AND MENTAL DISEASES.*

SMITH ELY JELLIFFE, M.D., PH.D.

Chairman of the Committee.

NEW YORK.

At the last regular meeting of this Section of the American Medical Association a discussion was held on the subject of drug addictions, one of the results of which was the appointment of a committee to formulate some plan for the outlining of a system of procedure which would lead to some definite knowledge of the subject. Accordingly a committee was formed of Drs. Smith Ely Jelliffe, New York, chairman; Brooks F. Bebe, Cincinnati, and Albert E. Sterne, Indianapolis. Inasmuch as the different members of this committee are distributed pretty widely over the United States, it has been impossible for them to get together. Therefore, the following syllabus of the report should be considered more as a report of progress from your chairman than as a complete report of the committee as a whole.

The committee feels that the scope implied by the words "drug addictions" is too extensive for consideration at this time, inasmuch as it would include the enormous subject embraced by the modern study of alcohol, opium, hashish, coca and other drugs, all of which are widely used to the detriment of the individual and social body. They have, therefore, thought best to limit their labors for the present to the subject of opium.

Inasmuch as the matter of terminology was brought up at the last meeting, we felt that our ideas on the subject might not come amiss. Almost an hour was devoted to the discussion of just what term should be used, and your committee feels that such time is spent to little advantage. It matters little whether one speaks of the opium habit, the opium disease or the opium addiction.

Your committee feels that the only service it can render to this Section at this time is to formulate, if possible, a series of suggestions concerning lines of fruitful inquiry. There are a large number of problems that must be solved, so great a number, indeed, that it would be futile at this time to suggest them all. We have, therefore, limited ourselves to some that seem to us most prominent at the present time, and as such they are offered to this Section, in the hope that some of the members who may hear or read this report may do some work through the year along the lines indicated and give the results of the inquiry at the next session.

1. The first problem concerns the *distribution and spread* of the habit. It is well known to many how universal the use of opium is in some of its various forms. Many of us are conversant with the fact that in small rural communities enormous numbers of the population are addicted to the use of the drug. Were it not for the enormous sale of official preparations of opium many drug stores would hardly exist. Therefore, it becomes important to determine more accurately just how widespread this practice is. At the present time we have no competent method outlined by which we may arrive at the information desired. Grinnell's studies in Vermont were, perhaps, most far-reaching and satisfactory, but these are open to many misinterpretations. Still we feel that perhaps the best way of getting at this matter would be through the pharmacists of a state or community. Also it might be suggested that prison statistics might be of service. There are many members here who are attending physicians to some of the large state institutions where an enormous number of opium habits are known to be confined, for opium taking among the criminal classes is known to be almost universal.

A member of your committee has had under consideration for some time a study of the cures advertised in the daily press, and we feel that this also offers a suggestion whereby information as to this matter of frequency might be obtained.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

2. The second problem concerns rather the proportionate number of individuals who take the drug by mouth, by hypodermic use, or by other *methods*, as smoking, etc.

3. The third problem is concerned with *etiology*. In other words, what are the origins of the habit, what induces people to take it up? It is well known that pain is an extensively potent cause. If so, what is the proportion of those that are induced to take up the habit by continued pain, and how may that be avoided by more carefully impressing on the medical fraternity the dangers of the use of opium as an analgesic? What is the influence of environment on the development of this habit. We have already spoken of the criminal class as particularly prone to this addiction. What are the factors which render it easy of access to this closely knit community?

4. From the individual etiology apart from the social, the psychologic study of *euphoria* might be taken up to advantage. Notwithstanding the classical controversy of De Quincey and Coleridge, we are far from the modern conception of the elements that constitute *euphoria* of opium, and close analysis of the psychic mechanism under the influence of this drug from the standpoint of modern psychologic methods is very much needed.

5. The *pharmacology* of opium is in need of further investigation. The molecular formulas for morphin and its related bodies are in need of more definite analysis, that we may know just what base is responsible for the activities of the drug. The modifications known to exist in the activities of methylmorphin, dimethylmorphin, etc., offer the suggestion that the chemical study is not without its possible revelations.

6. Naturally the topic that interests us most concerns itself with the *treatment*. This should be considered from the *social* point of view as well as that of the *individual*, for in the very factor for which environment is responsible for the spread of the habit, legal or other regulations may be satisfactorily brought out that might reduce in part this important etiologic factor. Your committee does not anticipate in this study of social prophylaxis a topic that they believe can be handled by any one worker, for in its unraveling one must go to the very mainsprings of human corruption. Graft, protection money, debauchery, are the faggots that boil the pot of this modern witches' brew.

From the personal therapy side, however, your committee feels that the study of the *abstinence symptoms* is of intense importance. Concerning them there seems to be more misinformation than definite information in our standard text-books. The cause of the abstinence symptoms must be capable of understanding from the point of view of abnormal physiology, and this study can certainly afford very fruitful results. Closely bound up with the phenomenon of *tolerance*, of which everyone who has seen these patients is fully aware, is that of the possibility of the question of immunity. Are there antibodies formed which permit of this tolerance to the drug which is so well known, or does the body take on increased oxidative powers, permitting it to break up more alkaloids with this increased use?

These two topics, both carefully studied by Faust and left undetermined, are probably capable of solution, and your committee offers them as some of the matter fruitful for the future.

Trusting that the report herewith submitted may be of some service, in the sense that some of the members of the Section may be led to engage themselves in the investigation of some of the topics suggested, your committee rests with thanks.

64 West Fifty-sixth Street.

ACUTE ARTICULAR RHEUMATISM.*

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HOT SPRINGS, S. D.

This paper does not assume the pretension of being a complete discussion of this disease, and only a few of the most important points in the general discussion, diagnosis, differential diagnosis, etiology and treatment, are discussed. The statements here made are the result of a large clinical experience extending over a period of fourteen years' residence at Hot Springs, S. D., and in treating cases of acute articular rheumatism with the assistance of modern hyriatic procedure, latterly in an institution thoroughly under control, employing an alkaline thermal mineral water, and aided by climatologic and topographic conditions, embracing an altitude of 3,400 feet, an excessively dry, sunshiny climate, free from great sudden atmospheric change, some of which factors possibly operate in giving me an experience and ideas different from that of practitioners not so located.

Acute articular rheumatism is an acute febrile affection, non-contagious, characterized by a nomadic multiple arthritis, profuse sweating and prone to endocardial complications.

The term "rheumatism" is an omnibus into which many practitioners dump all ill-defined pains, conditions and states troublesome and not well understood, a sort of refuse heap to which the salicylates are applied without beneficial results, and whereof the treatment of acute articular rheumatism and rheumatism in general falls into disrepute. Even that classical difficulty, acute arthritis deformans, seldom recognized as such, is almost always diagnosed as acute articular rheumatism and treated as rheumatism, not only without influence on the progress of the disease, but with detriment to the patient. Out of the many cases of arthritic deformans that I have seen I have never been able to elicit from the patient the statement that his case was diagnosed as such in its acute stages, but he has uniformly stated that his attending physician had pronounced it rheumatism. Also, I find that his physician continues to diagnose as chronic rheumatism nearly all cases of chronic arthritis deformans. For me to delve into the many arthritic conditions to which the term rheumatism is erroneously applied is beyond the scope of this paper. Acute articular rheumatism may be speedily recovered from and almost never becomes chronic. These so-called cases of chronic rheumatism are seldom true rheumatic arthritis, but are usually gout, arthritis deformans, articular disturbances due to pathologic states of the nervous system or to some form of coccus infection.

I wish to eliminate from the discussion all non-articular affections and all multiple articular affections, distinctly due to the various forms of coccus infections, and to make a plea for the elimination of the term "rheumatism" as coupled with that of a specific coccus infection. The elimination of such terms as "rheumatoid arthritis" and "gonorrheal rheumatism" will be a long step along the line of proper diagnosis and treatment. There is as much sense in pronouncing a case of tubercular rheumatism of the hip joint as in pronouncing a case gonorrheal rheumatism of the knee joint. The idea that heat, pain, swelling, tenderness, redness and stiffness in or about a joint is necessarily rheumatism or rheumatic is responsible for many sins of omission and commission.

* Read before the South Dakota State Medical Society at Deadwood, 1905.

Encouragement One-third the Business of the Physician.—Dr. Richard C. Cabot of Boston, in describing the impotency of the physician to affect through his technical skill or knowledge much that he would like to do, said: "Encouragement is one-third the business of the physician, but if it is to be permanent and not a mental cocktail, we must give the patient good reason for being encouraged, which usually means religion or its equivalent. It is the disregard of these facts that has sent so many patients away from physicians and into the hands of Christian scientists and mental healers."

I have never seen a case of non-articular arthritis that I could safely pronounce rheumatism.

Acute articular rheumatism has the characteristic of being a multiple arthritis and of ambulating from joint to joint, with improvement in the joints previously involved. This is not true of coccus infections and of arthritic conditions due to pathologic states of the nervous system, to which the latter class, arthritic deformans, probably belongs.

Whenever you have a case where one, two or three joints are involved, and these joints only, and persistently so, you have not a case of acute articular rheumatism. The scope of this paper does not admit of going into a detailed account of the differential diagnosis between acute articular rheumatism and other articular affections. However, acute arthritis deformans is so often confounded with rheumatism that I will mention a few of the cardinal points of difference.

The onset in both diseases is sudden and similar. After a day or two in acute arthritis deformans there will be a temperature not high and not in proportion to the amount of arthritis present; that the joints are swollen, but not red and not so hot; that in arthritis deformans the swelling is more in the peri-articular structures; that the pain is less severe and that the joints can be moved without that excruciating pain found in acute articular rheumatism; that the patient can bear the weight of the bed clothes; that while polyarthritis is present in both diseases in acute arthritis deformans it is not shifting; that the joints involved are persistently involved; that the arthritis, if involving the fingers, gives a fusiform shape to the joints; that the cervical and maxillary joints are often involved; that there is not the tendency to endocardial complications; that salicylates do not influence the progress of the case, and that the case tends to become chronic and later to develop all the pathologic states characteristic of chronic arthritis deformans.

As to the etiology of acute articular rheumatism, that at the present time is a much debated question. Is or is it not a specific microbic infection, or is it microbic and not specific? Dr. McCrae, of Johns Hopkins, in an analysis of 270 cases of acute articular rheumatism, states that the cultural results were "practically negative," not only that, but of "negative value especially in reference to the absence of streptococci and staphylococci from the cultures." Recently the bacterial phase of the etiology has been summed up in an editorial in the Feb. 4, 1905, number of THE JOURNAL of the American Medical Association as follows: "Cole, of Baltimore, and Jachmann, of Breslau, among others, have failed to find the micrococcus of rheumatism or any other microbe in the blood or in the joints of typical cases of acute articular rheumatism." A fact which should excite suspicion in the mind of the student as to the bacterial etiology is that the varieties of microbes claimed to be isolated and specific are about as numerous as the claimants, and the fact that the various forms of micrococci will produce arthritis and endocarditis.

Clinical experience has demonstrated to me the marked difference in which cases of acute rheumatism yield to the treatment subsequently to be outlined, and has suggested the possibility of the dissimilarity of the operating cause or causes in two apparently similar cases. The behavior of the majority of cases under treatment has suggested an autotoxic cause, as I have seen case after case that had run anywhere from a few days to six weeks, under what I term improper treatment,

make a recovery so rapid as to border on the marvelous; cases in which the rapid recovery apparently could be explained only on the hypothesis of limiting and preventing the formation of autotoxic causal agents and eliminating the products of abnormal metabolism; cases in which, if the causal agent is microbic, then sodium salicylate must be a specific, for we know of no microbe destroyed by starvation diet, or the withdrawal of certain classes of food, or by profuse elimination. On the other hand, I have seen cases, apparently typical but presenting various complications, among them cardiac involvement, angina or a history of angina, which, under the treatment, would improve up to a certain point and beyond which I failed to obtain the markedly rapid expected improvement, on the hypothesis of simply eliminating products of suboxidation; cases in which the treatment had to be modified and carried along lines based on the idea that I had a mild infection to deal with; cases in which sodium salicylate, on the basis of being a specific, influenced the case up to a certain point and there had to be employed cautiously or abandoned. It has seemed to me that children are most prone to cardiac involvement, and in a number of instances I have found them suffering from considerable cardiac disturbances following repeated attacks of angina, prior to the development of marked arthritic disturbances. There does not seem to be any doubt about the microbic agent in these cases. The remarkable effects of profuse elimination, of a rigid, limited, non-animal, non-vegetable alkaloid, non-toxin-forming diet is a weighty argument against the infectious origin of this disease, and one greatly in favor of the autointoxication theory.

Most of my patients suffering from acute articular rheumatism come from the active walks of life—growing children with lusty appetites to supply the needs of rapid growth, in whom we see digestive disturbances due to overeating and violent play; servants, laborers, freight conductors, cabmen, teamsters; individuals doing work that calls for active exertion, great physical energy; individuals subject to becoming overheated and then suddenly becoming chilled, individuals doing a work where in they are subject to exposure and sudden atmospheric changes—wet and cold. These conditions and factors seem to produce some variety of digestive disturbances leading to the formation of toxins in the alimentary canal, the absorption of these resulting in metabolic disturbances, and producing products of suboxidation and all the manifestations found in this disease, just as you have similar manifestations, only on a smaller scale, in gout. The relation between dietary indiscretion, digestive disturbances and the operation of resulting autotoxic agents in gout are facts beyond cavil; why not acute articular rheumatism, both are arthritic, the one involves a few joints, the other many, with numerous similar manifestations, differing in degree only, and both amenable to somewhat similar lines of procedure?

Now the weakened and altered state of the tissues as the result of the operation of the toxic agents and disturbed tissue metabolism leads to a reduction of the vital resistance and your patient is subject to secondary microbe invasion. This, I hold, is what occurs in many of the cases and we have as a result infection complicating the results of autointoxication, with resulting cardiac involvement. These are the cases to which the treatment subsequently to be outlined is applicable in part only and must be modified to cover the infective element. In view of these clinical observations, I have come to make the statement that acute articular rheuma-

tism is a disease that is first, and in the great majority of cases, autotoxic, and that the autotoxic agent is probably some form of suboxidation due to toxic invasion from the alimentary canal, just as gout is produced by toxic invasion from the alimentary canal; secondly, that acute articular rheumatism is often complicated by microbic invasion, but that the infection is secondary to the conditions wrought by the disturbed metabolism and made possible by them. Recognizing this theory, early proper treatment will promptly relieve the case and in almost all cases the secondary infection can be prevented, and thus the more dangerous complications be prevented or greatly modified.

TREATMENT.

There can be no jugglery in the treatment of this disease; the least digression from a few of the points mentioned means disaster; skepticism as to the existence of a successful treatment of acute articular rheumatism and the prevention of its complications is based on errors of diagnosis. By eliminating these errors of diagnosis and rigidly carrying out the treatment indicated, one will be eminently successful. Cases complicated by cardiac involvement are cases complicated by infection and one must recognize this element in treatment. I realize that in the treatment on which I insist there is one element very difficult to obtain, especially for those engaged in country practice. I refer to the bath tub. Without the tub there will be more or less failure. To a certain extent this can be overcome by some improvised hot-air apparatus.

I have been profoundly impressed by the importance of two elements in the treatment—first, the prime necessity of limiting the quantity of food taken and the withdrawal of all proteid or xanthin-forming foods, and, secondly, with the prime importance of the care of the skin and profuse elimination from all the emunctories.

First.—Place the patient in bed between dry woollen blankets, wearing a light night gown, with open sleeves fastened with safety pins. Keep the bed clothes dry at all times and never cold and clammy; give him absolute rest and plenty of dry, warm air in a sunshiny room.

Second.—Withdraw all food until the alimentary canal has been thoroughly emptied and cleansed; then for the first few days employ a strictly skim milk diet; then begin to allow stale bread and milk products. If milk is not well taken, cereal foods and buttermilk may be used. The carbonated waters often assist the difficulty in taking milk. Exclude all tea, coffee, cocoa and chocolate in the acute stages. When the patient has passed the acute stages he may gradually begin the use of fish, oysters, cottage cheese and the white meat of barnyard fowls, carefully returning to the proteid articles of diet and immediately abandoning them on a reappearance of the arthritic symptoms. Easily digested green vegetables, such as new peas, string beans, lettuce, asparagus, spinach and a small quantity of baked and mashed potatoes are allowed. Exclude all acid and sweet fruits. Oranges are freely allowed. It will be well to keep watch of excessive amounts of starchy foods and heavy sweets.

Third.—Give a vigorous dose of calomel, follow this with epsom or rochelle salts, and thereafter keep the bowels moving from two to four times each twenty-four hours with the salts or some other agreeable form of saline laxative. I am partial to the magnesium sulphate.

Fourth.—Give tub baths. Place the patient in water at 98 degrees; after he has been in the tub five min-

utes, add hot water gradually to bring the temperature to 100 or 102 degrees. Keep patient in the bath fifteen to twenty-five minutes, as he will bear, guarding against sensation of faintness or marked depression. Give patient skin friction, massage and passive movements entire time he is in the bath, in the order named. In removing patient from the bath be careful not to expose the skin to the air, quickly throw a dry, warm sheet and blanket around him, and get him into bed between dry warm blankets. Now pack hot bottles about him and gradually bring on free perspiration, keeping this up from three-quarters to an hour and a half.

Fifth.—Now begin to give ten to fifteen grains of sodium salicylate with a glass of alkaline mineral water every two hours. Half a glass of milk may be given with a little seltzer water in place of the full glass of water if sodium salicylate causes great gastric disturbances. I seldom employ more than two drams of sodium salicylate in the twenty-four hours, and deem that dose sufficient for almost all cases. Under the treatment so far outlined one will be surprised at the size of the dose of sodium salicylate one can give without getting the customary toxic effects and gastric disturbances. Experience proves that patients taking hot baths with free elimination can take large doses of depressing drugs without the usual toxic effects, and it is very seldom that I am compelled to modify my dose of sodium salicylate. Now, as soon as the patient improves and gets comfortable, try to lengthen the interval between doses and continue the work along the line of reduction.

Sixth.—Flood the system by the internal administration of large quantities of an alkaline mineral water, giving it to him at regular stated intervals. If mineral water is not at hand, employ pure water, holding sodium bicarbonate or potassium citrate in solution. Keep the urine alkaline or neutral by the administration of alkaline mineral water.

Seventh.—Locally apply hot fomentations to the affected joints, or wrap in cotton batting or wool and apply a splint.

Eighth.—Unless the weather is warm, dry and free from sudden changes, keep the patient in bed for at least a week after the temperature has become normal. Caution him against exposure. It is astonishing how little exposure will bring on another attack within a week or ten days following an apparent recovery.

Now, this is an incomplete discussion of this disease and the scope of this paper does not admit of going into all the details and of discussing the changes in diet, treatment, etc., in the subacute and possibly chronic stages. Before closing, however, let me add the caution to get rid of the salicylate as soon as possible and to substitute the syrup of iodid of iron and Fowler's solution, as these patients become very weak and often markedly anemic. Also, one should not adhere forever to the non-proteid diet. The patient will do badly, recover slowly and poorly; so go back to a mixed and proteid diet as soon as possible, watching for a possible recurrence of the arthritic symptoms.

Peritoneal Adhesions.—Lejars calls renewed attention to those not infrequent cases where gastrointestinal symptoms followed some time after an apparently slight injury to the abdomen. These symptoms include rebellious colics, vomiting, constipation or diarrhea, without other evidences of organic disease. When the presence of adhesions simulates ulcer, gallstones, etc., operation with loosening of the adhesions is indicated. —*Denver Medical Times.*

SPINAL ANESTHESIA BY MAGNESIUM SULPHATE.

A REPORT OF SEVEN OPERATIONS PERFORMED UNDER ITS INFLUENCE.

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EXPERIMENTS ON ANIMALS.

In several series of experiments on animals¹ it was established that magnesium salts have very distinct anesthetic properties. Among other things it was established that by local application of solutions of magnesium sulphate on nerve trunks the conductivity and excitability of motor and sensory nerves can be temporarily abolished; that by subcutaneous injection of certain quantities of magnesium salts general anesthesia with complete recovery could be produced in several species of animals, and, finally, that by intraspinal injections into animals of comparatively small doses of a solution of magnesium sulphate a complete anesthesia and paralysis of the posterior part of these animals could be produced.

These latter experiments interest us here particularly and we shall dwell on them a little longer. The experiments on dogs, cats and rabbits have demonstrated that by application of solutions of magnesium sulphate to the spinal cord, either through an opening made by laminectomy or through lumbar puncture, the sensibility and motor power of the posterior extremities became greatly impaired or were even completely abolished. The experiments on these animals, however, were not entirely satisfactory. In lumbar puncture in these animals the cord was sometimes unavoidably injured, which marred the results, and the injections through a laminectomy opening had the disadvantage that a part of the solution escaped again through the opening and that the quantities used could, therefore, not be measured exactly.

In monkeys, however, lumbar puncture can be carried out nearly with the same degree of safety and reliability as in human beings, and the experiments have here given uniform results. The injection of a solution of magnesium sulphate in a dose equal to about 0.06 (one grain) of the substance to one kilogram weight of the animal would cause, within a few minutes, complete paralysis, and anesthesia and paralysis would spread upward, reaching neck and head, and the animals would then lie in a state of stupor and paresis. The monkey, which an hour before was fighting and biting every one who came near him, would lie now perfectly limp, offering not the slightest resistance. The vital reflexes were not affected, heart beats were not changed; only the respirations were slightly slowed. The animal would remain in that state for many hours, but on the following morning would be found completely recovered. A few animals stood several consecutive injections at comparatively short intervals apparently without any after-effect. A dose four times as large as the one above mentioned proved fatal to the animal.

From the experiments with intravenous injections the observation should be mentioned here that solutions of

magnesium sulphate are very toxic, even in small doses, especially when injected at a rapid rate. The toxic effects, however, are essentially confined to the function of respiration; heart and blood pressure, if the dose employed was not too large, remain practically unaffected. In animal experimentation, therefore, an intoxication with magnesium salts does not necessarily lead to a fatal issue; on the contrary, the most stubborn respiratory paralysis has been successfully overcome by patiently and perseveringly carrying out proper artificial respiration, i. e., insufflations of air into the trachea by the methods commonly employed in physiologic laboratories.

SPINAL ANESTHESIA IN HUMAN SURGERY.

The question now arose: Could intraspinal injection be employed in human surgery? Spinal anesthesia seems to be now a well-established method. Its history is of very recent date. It began with the lumbar injection of cocaine.² Influenced apparently by the International Medical Congress in Paris (1900) and by the enthusiasm displayed by Tuffier for the method and the drug, spinal cocainization soon began to be employed abroad and in this country extensively. This widespread activity, however, was soon followed by a reaction against the method. Bier himself was one of the first to warn against its indiscriminate use. Cocain proved to be poisonous even in very small doses. (It is a noteworthy fact that spinal cocainization was not tested in experiments on animals before its employment in human surgery.) Eucain did not give better results.

Recently, however, the pendulum began again to swing in favor of spinal anesthesia. Stimulated by the observations of H. Braun on local anesthesia, Bier and others found that the addition of suprarenal extract makes cocain more available also for spinal anesthesia. Furthermore, in stovain, a new synthetic product of the cocain group, a drug was introduced which is somewhat less effective, but it seems to be also less poisonous than cocain. Judging from the number of favorable reports which we now find in the surgical literature on long series of operations carried out under spinal anesthesia by one or the other method, the conclusion seems to be justified that spinal anesthesia as a method has now come to stay.

USE OF MAGNESIUM SALTS.

Could magnesium salts also be employed by this method in human surgery? We felt convinced that an attempt to test it was thoroughly justified for the following reasons: As stated above, in animals standing nearest the human species, in monkeys, spinal anesthesia by magnesium salts has given complete satisfaction; there was complete anesthesia of the posterior part of the animal, which was followed by complete recovery, and the experiments have shown that even repeated anesthetization of the animal by this method left no after-effects. Also, the dose which was amply sufficient to produce complete anesthesia was only about one-fourth of the fatal dose—a latitude between the anesthetic and the fatal dose much greater than in most of the other anesthetics. Moreover, the danger which might come from the administration of magnesium salts was not through failure of heart or blood pressure, but only through impairment of the respiratory function, a danger which is amenable to relief by artificial respiration efficiently carried out. The fact that magnesium is not

1. The experiments were carried out at the Rockefeller Institute for Medical Research by Drs. S. J. Meltzer and John Auer: *Amer. Jour. of Physiol.*, vols. xiv and xv; also *Amer. Medicine*, Nov. 25, 1905. And S. J. Meltzer: *Medical Record*, Dec. 16, 1905.

2. L. Corning, 1894; A. Bier, 1898.

an alkaloid or an artificial synthetic product like cocaine, etc., but a substance normally present in the body and an integral part of its living tissues does certainly not speak against its employment as an anesthetic.

It should also be stated that, differing from cocaine, magnesium salts can be thoroughly sterilized by heat without affecting in the slightest their anesthetizing property. Finally, it should be remembered that, differing from the interests in favor of the employment of patented synthetic products, like stovain, alypin, etc., the attempt to employ magnesium salts in human ills was dictated by no other interest than desire to increase our store of knowledge and to benefit humanity.

Being thoroughly convinced of the justification of our undertaking, seven operations under the influence of spinal anesthesia by magnesium sulphate were performed in the Harlem Hospital during the surgical service of one of us (Haubold). In order to reduce any possible danger still more, it was decided to employ in human surgery, at least at first, a dose equal only to about one-third of that which proved to be harmless and efficient in animals, i. e., to inject by lumbar puncture a quantity of a solution of magnesium sulphate which would contain about 0.02 (1/3 gr.) to about one kilogram (about 2 pounds) body weight. Not expecting a complete anesthesia from such a small dose, we were ready to assist the effect by some degree of general anesthesia.

CASE REPORTS.

Herewith we give a brief account of the results:

CASE 1.—Mrs. M. M., aged 25. Sept. 4, 1905.

Operation.—Perineorrhaphy, including sphincter, and curettage.

At 3:15 p. m. a lumbar puncture was made and about 5 c. c. of spinal fluid permitted to escape. Five cubic centimeters of a sterile 25 per cent. solution of magnesium sulphate (equal to about 1 c. c. of the solution to 25 pounds of body weight) were injected. One hour later anesthesia of perineum was marked but insufficient. Chloroform was administered and operation was begun at 4:20 p. m. Operation was finished at 5 p. m. Only about 10 c. c. of chloroform were used; the anesthesia was complete. At the conclusion of the operation the condition of the patient was good.

No note of condition of patient was taken between 5 and 7 p. m. At 7 p. m. patient was completely unconscious and could not be aroused. There were no reflexes. Patient remained in this condition until 9 p. m., when she could be slightly aroused. There was no reaction to pain in lower half of the body. Incontinence of urine and feces. Temp. 99, pulse 80, resp. 18.

For the greater part of the night she remained in a semicomatose state. At 3:30 a. m. she flexed knees, and from 5 a. m. to 7:30 a. m. vomited small quantities four times. At 9 a. m. she was still drowsy, could move her legs, felt pain but could not localize properly. She had to be catheterized. Temp. 101.6, pulse 104, resp. 22.

Temperature and pulse returned to normal next day. Retention of urine, incontinence of feces and other symptoms disappeared in 24 hours. The patient then made an uninterrupted recovery and was discharged as completely cured on September 21. (Patient returned to the hospital on January 11 with an attack of appendicitis. She had no after-effects whatsoever from the intraspinal injection.)

CASE 2.—Mrs. R. S., September 27.

Operation.—Curettage for metrorrhagia.

At 3 p. m. a lumbar puncture was made; about 5 c. c. of spinal fluid were removed and 5 c. c. of a 25 per cent. solution of magnesium sulphate were injected. After 6 minutes there was a profuse perspiration and patient was restless. After 12 minutes there was motor paralysis from the pelvis down; sensation was diminished, but insufficient for operation. At 3:25 chloroform was administered. The operation lasted 20 min-

utes. Five cubic centimeters of chloroform were used, and there was absolute relaxation of all muscles below waist line. Patient was unconscious, but conjunctival reflex was present.

At 4:15 p. m. patient was partially conscious and moved arms; lower extremities were paralyzed. At 6 p. m. patient was in profound narcosis; all reflexes were lost; there was faint response on tickling mucous membrane of the nose. At 2 a. m., September 28, patient talked incoherently; was still semicomatose. At 6 p. m. sensation returned in lower extremities. Motion did not return until 4 p. m., when for the first time also her speech became rational. From 11 p. m., September 27, to 5 p. m., September 28, patient vomited nearly every hour, this vomiting being only regurgitation, as the abdominal muscles were not used. At 1 p. m., September 28, patient's temperature rose abruptly to 105°, pulse was rapid, but respirations remained normal. Temperature gradually came down and in two days became normal. (The fever was apparently due to an intrauterine infection.) Retention of urine lasted about 36 hours. On October 1 patient felt well in every respect. There were no after-effects. After one week the patient was discharged, cured.

Remarks.—In both cases the amount of chloroform used was too little to have a prolonged after-effect. In both cases the deep general anesthesia did not set in until some time after the operation; in the second case the patient was out of the mild general anesthesia soon after the operation. The late deep general narcosis was apparently due to the magnesium sulphate alone, or to the magnesium sulphate plus the small amount of chloroform.

CASE 3.—Mrs. P. T., aged 22, September 29.

Operation.—Dilatation of cervix.

At 3:10 p. m. 5 c. c. of 25 per cent. solution of magnesium sulphate were injected by lumbar puncture. The weight of patient was over 150 pounds, hence the solution of magnesium sulphate was less than 1 c. c. to 30 pounds. There was profuse perspiration after 7 minutes. After 40 minutes there was no loss of sensation and no paralysis. Chloroform was administered and the operation performed. About 4 c. c. of chloroform were used; there was no general anesthesia, but no pain was felt and no resistance was offered during operation.

No impairment of consciousness followed; there was no vomiting and no retention of urine. Sensation in legs remained distinctly impaired until 10 p. m. On September 30, at 1 p. m., temperature began to rise and by noon reached 103°; pulse went up only to 85. Next day temperature became normal again. Patient felt well and was discharged October 2.

Remarks.—In this case the dose of magnesium salt was too small. It was, however, in conjunction with the small dose of chloroform, apparently sufficient to permit the performance of the small operation of dilatation of the cervix.

CASE 4.—Mrs. M. McD., aged 27, October 21.

Operation.—Laparotomy for removal of appendix and right ovary and tube.

At 1 p. m. a lumbar puncture was made, about 4 c. c. of spinal fluid withdrawn and a little over 4 c. c. of a 25 per cent. solution of magnesium sulphate injected. Patient's weight was about 110 pounds—a little over 1 c. c. of the solution to 25 pounds body weight. At 4:30 p. m. there was paresis, loss of reflexes and anesthesia from the pelvis downward. Patient was moaning; pulse 94 and good. Chloroform was administered, patient was under in a few minutes and operation was begun. Patient was sometimes out of anesthesia, but a few drops of the chloroform sufficed to put her under again completely. Anesthesia was ideal; there was not the slightest resistance. Pulse 70, good quality; resp. 26. When out of anesthesia patient apparently did not feel surgical manipulations. At 4:55 p. m. operation was finished and chloroform discontinued. Sixteen cubic centimeters of chloroform were used, greatly wasted.

At 5 p. m. spinal puncture was made again, 4 c. c. of spinal fluid being withdrawn and 5 c. c. of sterile normal saline injected. This procedure was repeated three times; the last time 8 c. c. of sterile normal saline were injected into the spinal canal. Patient was in good condition. Pulse 60, respiration 26.

At 6 p. m. patient was awake, somewhat confused. At 7

p. m. mental condition was normal and sensation in lower extremities had reappeared. Pulse 70, resp. 24. Motor power returned about 9 p. m. In the course of the night there was a slight rise of temperature. On October 22 at 9 a. m. temperature was highest, 100.6, pulse 100, resp. 24. The temperature, etc., became normal in the course of the day. She vomited once, slightly, about 2 p. m. Otherwise the general condition was good. She made a rapid recovery and was discharged, cured, November 6. She was seen in January, 1906, and had had no after-effects whatsoever.

Remarks.—Although the operation in this case was more serious and extensive than in the first two cases, and although more chloroform was used, there were practically no after-effects at all. The favorable result can reasonably be ascribed to the postoperative washing of the spinal canal which was practiced in this case.

CASE 5.—C. H. B., aged 57, October 27. Alcoholic, with marked arteriosclerosis.

Operation.—Correction of malunion of Pott's fracture of right leg.

At 1:15 p. m. lumbar puncture was made; 7 c.c. of spinal fluid were removed and 7 c.c. of a 25 per cent. solution of magnesium sulphate were injected. At 1:30 p. m. there was profuse perspiration. There being no distinct anesthesia or paralysis, at 3:45 p. m. chloroform was administered and the operation was finished at 4 p. m. Sixteen cubic centimeters of chloroform were used, but the patient was not completely under its power. Pulse 60 and irregular.

At 4:30 p. m. patient was completely out of anesthesia and motion and sensation were present. His mind was in a state of confusion for about 24 hours. There was no vomiting. At 1 a. m., October 28, temperature began to rise and reached 103° by 1 p. m. It came down with fluctuations to normal by October 31. Patient was seen in the course of the winter and had had no after-effects from the spinal injection.

Remarks.—This patient's weight was about 160 pounds and he received a trifle more than 1 c.c. to 25 pounds body weight. There was some effect. For an alcoholic, 16 c.c. of chloroform are certainly insufficient to bring the patient into a state of complete anesthesia, and we may well assume that the intraspinal injection assisted greatly in keeping the patient in the required state of anesthesia. But, comparing it with the other cases, the effect must be considered as slight.

CASE 6.—Mrs. S. R., aged 27, October 31.

Operation.—Bassini for relief of femoral hernia.

At 2 p. m. spinal puncture was made, 7.5 c.c. of spinal fluid were removed; 7.5 c.c. of 25 per cent. magnesium sulphate were injected. At 4 p. m. there was no sensation of pain in legs, but tactile sensation was present. Motor power was distinctly diminished, but reflexes were present. Chloroform was administered and operation begun. At 4:15 p. m. operation was finished and chloroform was discontinued. The amount of chloroform used was only 8 c.c.

Patient was never completely under. She felt that she was handled around the lower part of the abdomen, but felt no pain and offered no resistance. At 5:30 p. m. pulse 60, resp. 20. Complete motor paralysis of extremities, very little sensation of pain, but tactile sense present in a measure. Mental state somewhat confused. One hour later patient was perfectly rational and sensation had returned. Motor power returned about 10 p. m. and reflexes about 6 o'clock next morning. Patient vomited four times.

At 1 a. m., November 1, temperature began to rise and reached 101° at 9 a. m., and it then gradually declined and became normal on November 2. She was discharged, cured, November 14. She was seen January, 1906. She had no after-effects.

Remarks.—The spinal injection of the magnesium sulphate in this case was undoubtedly the chief cause of the local anesthesia. The slight amount of chloroform used was only the means of diverting the attention of the highly hysterical patient. In this case the magnesium sulphate produced only analgesia; the tactile sense was only moderately impaired.

CASE 7.—A. A., aged 16, male, October 31.

Operation.—Operated for a large intramuscular abscess of right thigh.

At 2:30 p. m. spinal puncture was made; about 8 c.c. of spinal fluid were withdrawn and 8 c.c. of 25 per cent. solution of magnesium sulphate were injected. Patient's weight was about 120 pounds, hence he received 1 c.c. to 15 pounds body weight. At 2:50 p. m. his legs were heavy; no reflexes. At 3 p. m. motion was difficult; patient vomited. At 3:15 p. m. legs were paralyzed and anesthetic. Pulse 74, resp. 18. Operation was begun; no chloroform was given. Patient conversed and felt absolutely nothing of the operation. He vomited again a small amount of greenish fluid. At 3:50 operation was completed. Pulse 84, resp. 20. Returned to ward.

At 5 p. m. patient was in deep coma. There was complete muscular relaxation; all reflexes were absent except lid reflex. Pupils small. Pulse 70, good; resp. 11. At 6:15 p. m. pulse 72, resp. 10; other conditions were the same as before.

At 6:30 p. m. spinal puncture was made again, 4 c.c. of spinal fluid being withdrawn and 4 c.c. of normal sterile saline being injected. The same procedure was repeated three times more. At 7:10 p. m. the coma was not so deep; the patient resisted the opening of his eyes and groaned when disturbed. Pulse 72, resp. 15. At 8:15 p. m. pulse 80 and resp. 10 again, but he moved his head and answered questions, although very confusedly. At 9 p. m. pulse 88, resp. 22; pupils wider; patient opened his eyes again and answered questions better. At 10:30 p. m. mental condition improved; appeared to be resting comfortably; pulse 100, resp. 27; pupils still wider.

At 3 a. m., November 1, he was awake and rational; sensation in limbs had returned and he was able to move them; reflexes were absent. He complained of frontal headache and also of some pains in legs and feet. At 8 a. m. reflexes had returned. There had been no vomiting since the operation. At 1 a. m., November 1, temperature rose to 104° and remained so until 1 p. m. the same day. Pulse fluctuated between 116 and 124 and resp. between 24 and 30.

Temperature, etc., improved gradually and became normal on November 3. Patient had fever before the operation. On November 6 patient was transferred to City Hospital in good condition, where he recovered.

Remarks.—Three and a half hours after the spinal injection of magnesium sulphate this patient passed into a most complete state of general anesthesia without the aid of any other anesthetic. In that state any part of his body could have been operated on with the greatest ease. His leg was operated on under complete local anesthesia forty-five minutes after the injection. But this patient received the largest quantity of the solution: 1 c.c. to about 15 pounds body weight. Judging from our experience in the fourth case we have reason to believe that if the operation would have been followed immediately by "washing" of the spinal canal the patient might have been freed from the late general anesthesia. As it was, the late "washing" of the spinal canal shortened perceptibly the after-effects.

DISCUSSION AND CONCLUSIONS.

From the foregoing seven cases we may deduce a few conclusions.

1. Magnesium sulphate in intraspinal injection proved to be as efficient an anesthetic in human beings as it was found to be in animals. In Case 7 a certain dose of magnesium sulphate produced local anesthesia in 45 minutes after intraspinal injection and about 3 hours later a deep general anesthesia set in which lasted for many hours and which would have permitted any operation on any part of the body. Although the dose used in this case was the largest we have employed in human beings, it was still less than one-half of the dose we have regularly used with monkeys with perfect impunity. The experience in the first two cases, however, has demonstrated that even such a small dose as 1 c.c. of the 25 per cent. solution to 25 pounds body weight is capable of bringing out complete anesthesia and paralysis of the lower part of the body, although not until 2 or 3 hours after the injection. The anesthesia and paralysis observed in these cases, appearing about 2

hours after the operation, could certainly not have been due to anything else but to the magnesium salt. Even the general anesthesia which set in late in these cases was undoubtedly, in the main, due to the intraspinal injection, since the small amount of chloroform which was employed in these cases could never produce such an after-effect. In Case 4 the patient apparently could have been operated on even at that early hour without chloroform. The absence of any noteworthy after-effects in this case was surely due to the washing of the spinal canal. The washing of the canal, although carried out at a comparatively late hour, proved to be beneficial also in the seventh case; the respirations increased and all the after-effects were perceptibly shortened. In Case 4 as well as in Case 6 there was a stage of analgesia which permitted the operation, although the tactile sense was not abolished.

Case 3 has shown that a dose of 1 c.c. of the solution of magnesium sulphate to 30 pounds body weight is insufficient to carry out an operation by its aid alone, although it apparently supported, in a measure, the effect of the chloroform.

In Case 5 even a dose of 1 c.c. of the solution to 20 pounds body weight had only a moderate anesthetizing effect. This patient was an alcoholic, 57 years old, with markedly developed arteriosclerosis. Possibly alcoholism, as well as arteriosclerosis, interferes in some way with the anesthetizing effect of the magnesium salt. Possibly also there is an individual predisposition for or a resistance to the anesthetizing effect of magnesium. Our impression is that it affects younger individuals more readily than older ones.

2. It seems that the spinal injections caused a rise of temperature in all the cases. Although in the majority of the cases there were some other reasons for the appearance of fever, the setting in of the rise of temperature at about the same time and the similarity of the course of the fever in all cases made it probable that the intraspinal injection was essentially the cause. This is the more probable, since it was observed also in intraspinal injections of other substances. The course of the fever, however, was in all cases perfectly benign and disappeared after 36 or 48 hours. The pulse remained always of good quality.

Vomiting occurred in most of the cases. In Case 7, in which no chloroform was employed, vomiting occurred only twice and lightly, and only at an early stage. The frequent vomiting in Case 2 was probably not due to the intraspinal injections. It is noteworthy that in most of the cases the postoperative vomiting had only the character of regurgitation (no contraction of the abdominal muscles).

4. There was retention of urine, lasting between 24 to 48 hours, in nearly all the cases. The bowels also had to be assisted by enema. The incontinence of feces of the first case was due to the involvement of the sphincter in the operation. We have to point out again that in Case 4, in which the spinal canal was washed immediately after the operation, there were practically no after-effects.

As far as seven cases permit any conclusions, the following statements may be made: Intraspinal injection of magnesium sulphate is capable of producing anesthesia, and, if carried out with caution, seems to be a safe anesthetic. The following plan would seem the best, at least for the present: To inject about 1 c.c. of a 25 per cent. solution of magnesium sulphate for every 18 or 20 pounds body weight and wait about 2 hours. It is

probable that by that time the analgesia will be sufficiently advanced to permit the performance of an operation on any part of the lower half of the body. A small dose of chloroform, however, should be administered to divert the patient's attention and to hasten and complete the anesthesia. Immediate washing of the spinal canal should follow the operation in all cases.

A more extensive experience will show whether this method could be used also as a means for general anesthesia for operations on the upper part of the body. It goes without saying that the solutions should be sterile, the salt chemically pure, and the patient handled with proper surgical care.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER X.

LOCAL DISINFECTANTS AND ANTISEPTICS.

Lister's use of local antiseptics in surgery is usually spoken of as a discovery, but, without detracting in any way from the credit due to Lister, it should be referred to more correctly as a practical application of previous discoveries.

Reichenbach, in 1832, obtained a substance from wood tar which he named creosote. Finding later that it consisted of phenol and phenol ethers, and also finding these same substances in smoke, he concluded, and later conclusively proved, that to them is due the meat preserving activity of smoke.

Runge, in 1834, found that the phenol which he obtained from coal tar also possessed the power of preventing putrefaction. Tar and a number of products of a similar nature were long ago recommended and widely used for foul smelling ulcers, but the fact remains that to Lister is universally, and very properly accorded the distinction of having placed antiseptic in surgery on a sure basis. Since the early days of antiseptic there have been many improvements, and we now know that the most perfect cleanliness, or asepsis, that is attainable is much to be preferred even to the most elaborate antiseptic.

It is, of course, entirely beyond the scope of this series of papers to consider the details of major surgery, but the principles of antiseptic which obtain in this branch are equally applicable to minor operations, and their disregard by many, who are not surgeons, is the best justification for their present brief consideration. The necessity of scrupulous cleanliness is seen in such a simple, but admittedly important, procedure as vaccination. The careful physician will perform even this comparatively simple operation under aseptic conditions, thereby saving himself much annoyance in case of accident.

The first, and really the most important, duty of the physician with regard to infections is to see that he does not carry them to other patients. There can be no doubt that physicians have played no small part in the spread of infectious diseases, particularly in the past, but fortunately, with the better understanding of the subject, this seldom occurs now.

The disinfection of clothing and of instruments belongs to the subject of general disinfection, that of the hands and person to local disinfection.

The cleansing of the hands, as it is done in a number of American hospitals, is about as follows: "Trim and clean the nails, wash the hands and forearms for five minutes in very warm, sterile water, using green soap and scrubbing them energetically with a brush or a gauze pad, cleansing the nails again during this part of the process. Rinse the hands for three minutes in 75 per cent. alcohol, to remove soap and to aid in sterilization; then in 1 to 1,000 solution of mercuric chlorid, or in a solution of 1 to 2,000 mercuric chlorid with 1 to 40 phenol, and finally rinse in sterile, warm water." This may be somewhat more elaborate than is necessary in most cases of minor surgery, but even here it is well to err on the safe side.

For the disinfection of the whole body a full bath in warm water with the liberal and judicious use of soap is sufficient, and the clothes may undergo disinfection separately at the same time. This procedure is so simple that the physician can not escape blame should he carry infection from one patient to another through the omission of necessary precautions.

When minor surgical operations are to be performed it is always well to thoroughly disinfect the surface at and around the prospective seat of operation. For this purpose the procedure given for cleansing the hands of the surgeon is sufficient, though in some cases it may be found necessary to supplement the soap and water with oil of turpentine.

Wounds and ulcers require disinfection to destroy those bacteria which can be reached, and antiseptic dressings to prevent the development of colonies from those which escape destruction or which may afterward reach the spot.

AQUA HYDROGENII DIOXIDI.—U. S.—Solution of Hydrogen Dioxide, or, as it is frequently called, Solution of Hydrogen Peroxid, is useful for decomposing pus, in which bacteria are protected from the action of other disinfectants. It thus secures the rapid cleansing of freely exposed pus cavities or ulcers, and at the same time it acts powerfully on bacteria, though they are not all destroyed so long as any pus remains. The official solution is equal, in disinfectant power, to a 1 to 1,000 solution of mercuric chlorid. The action on pus of hydrogen dioxide is so extremely rapid that it frequently detaches small masses which may escape decomposition.

The use of this solution is not unattended with risks, particularly in sinuses or deep, partially closed wounds. Mucous membranes decompose hydrogen dioxide rapidly, and the skin slowly, with the liberation of nascent oxygen. It is not certain whether the bactericidal property is due to the liberation of oxygen alone, or whether the preparation possess a special influence on the micro-organisms. The decomposition whereby the oxygen is liberated is supposed to depend on a ferment, catalase, which is widely distributed, and, as the preparation loses its bactericidal powers, once the oxygen has been liberated, it is of course useless as an antiseptic, though extremely useful as a disinfectant. Hydrogen dioxide has an especial reputation in the treatment of sore throat and even diphtheria, for which it is used as a spray or as a gargle with entire safety. It attacks metals readily, and only rubber or glass should be used in connection with it. Diluted with an equal amount of water, it is an excellent mouth wash, but not infrequently contains a little acid, and the mouth should be rinsed after its use.¹

After the disinfection of ulcers and wounds an antiseptic dressing is applied. Cotton, gauze and lint impregnated with various antiseptics are found on the market. Only the active substances that are used in this connection will be discussed, as the application of dressings belongs to surgery.

IODOFORMUM.—U. S.—Iodoform, Tri-iodomethane, is usually obtained by the action of iodine on alcohol, in the presence of an alkali or an alkaline carbonate. Iodoform was discovered by Scruellas, in 1822, but was not used in medicine until some time after 1837. Despite its disagreeable penetrating odor, iodoform continues to hold first place among local antiseptics, used for the dressing of wounds. At first it was supposed to share with chloroform (from which it differs chemically only in the iodine displacing the chlorine) a strong antiseptic action, but, in the case of iodoform, this has been found to be but slight; it is, however, materially increased by the slow liberation of iodine. When its local use as a dressing is long continued, enough of it may be absorbed to produce poisoning, which does not, however, result in a typical narcosis, such as chloroform produces, but gives rise to disturbances of cerebra- tion, headache, delirium and other symptoms. These are due to the iodoform molecule; but exanthemata, which are sometimes severe, are usually attributed to the liberated iodine, which, when liberated, is thought to circulate in the blood as an alkaline iodid or in combination with albumin. Hematuria,

albuminuria and urinary casts may also result from its absorption, and many attempts have been made to find a substitute for iodoform without its poisonous effects.

Some surgeons deny that iodoform exerts any direct antiseptic power, and attribute the benefits from its use to its limitation of the secretion on which the bacteria would otherwise develop. Binz observed that iodoform lessened the emigration of leucocytes, and it is said to be particularly useful in local affections with free secretions.

When iodoform is intended for use as a dusting powder, its odor may be rendered very much less disagreeable by incorporating with it 4 per cent. of coumarin. The following has been used to some extent:

| | | |
|----------------------------|--------|----|
| R. Iodoformi | 3v | 20 |
| Coumarin | gr. xv | 1 |
| Acidi borici q. s. ad..... | 3xiii | 50 |

Misce bene. Sig.: To be used as a dusting powder.

Pulvis Iodoformi Compositus (N. F.), containing Iodoform 20, boric acid 30, naphthalin 47, and oil of bergamot 3 parts, also constitutes a useful and comparatively unobjectionable antiseptic dusting powder.

Where iodoform is to be used in the form of an ointment the addition of from 5 to 10 per cent. of balsam of Peru, or of 2 per cent. of oil of anise has been found to be advantageous. The addition of oil of anise, in somewhat larger quantities, has also been recommended for iodoform gauze, particularly when the gauze is to be used in appreciable quantities or for any continued length of time. If the antiseptic action of iodoform is due to the liberated iodine, then necessarily many of the proposed substitutes must be practically devoid of antiseptic power, since the iodine is too firmly bound to be liberated by the tissues.

IODOLUM.—U. S.—Iodol designated chemically as tetra-iodopyrrol, one of the recent additions to the Pharmacopeia, illustrates this particular condition very well. The iodine in this case is so thoroughly combined that the substance has been recommended as being comparatively non-toxic. Another class of preparations, such as nosophen, isosphan and europheon, depends for the antiseptic action largely on the cresol or the phenol compounds united to the iodine. Loretin and vioform are combinations of iodine and quinolin, and there is no reason to suppose that they have any advantages over the other preparations just mentioned.

THYMOLIS IODIDUM.—U. S.—Thymol iodid, much better known by the formerly trade-marked name "Aristol," is a condensation product of two molecules of thymol with two atoms of iodine, and more properly, therefore, should be designated by its true chemical title, di-thymol di-iodid. This preparation, which really belongs to the phenol group of iodine compounds, has met with a better reception than many of the other iodoform substitutes. It is probable, now that the patents have expired on aristol and the substance is available at much more reasonable prices, that its popularity and use will be extended still further. This, however, is problematic. Schmiedeberg specifically states that aristol, isosphan, soziodol, pierol, loretin and antiseptol, all of which contain iodine, are not more actively antiseptic than are the corresponding iodine free compounds, while the latter are, of course, much less expensive. Since the number of possible combinations of this type is practically unlimited, we will do well to exercise circumspection in accepting those which appear from time to time.

PHENOL.—U. S.—Acidum Carboliceum (U. S. P., 1890) is hydroxybenzene, and may be obtained from coal tar by fractional distillation and subsequent purification, or may be made synthetically. In its pure state it occurs as colorless, needle-shaped crystals, or as a white crystalline mass.

PHENOL LIQUEFACTUM.—U. S.—Liquefied Phenol, Liquid Carbo-lic Acid, contains from 85 to 89 per cent. of absolute phenol, and is the form in which this substance is usually seen and used.

Phenol or carbo-lic acid is now used as an antiseptic dressing for wounds very much less frequently than it was some years ago, because of the danger of poison due from absorption. It may be applied in the form of a 2 per cent solution in water; stronger solutions are used, but many cases of gangrene

1. An agreeable, and at the same time efficient, mouth wash is obtained by mixing equal parts of aqua hydrogenii dioxidi, liquor antisepsicus* (U. S.) and a saturated solution of potassium chlorate.

have followed the use of even dilute solutions on the extremities, particularly the hands, for a continued length of time.

A sharp distinction is to be drawn between the anesthetic and antiseptic uses of phenol. Solutions of phenol in oil, or mixtures with fats, are excellent anesthetics when brought in contact with painful surfaces or wounds, but they possess very little antiseptic action, because phenol is more soluble in fats and oils than in water or weak saline solutions, hence it does not leave the oil to penetrate the bodies of bacteria, without doing which it does not injure them.

Practically the same holds true of its affinity for alcohol, and it is for this reason that alcohol is such an excellent antidote for carbolic acid, externally as well as internally. The absorption of phenol is followed by its appearance in the urine, which usually becomes dark greenish or nearly black in color.

CRESOL.—U. S.—and its more desirable form:

LIQUR CRESOLIS COMPOSITUS.—U. S.—Compound Solution of Cresol, has been mentioned under general disinfectants. The latter compound has been extensively used, particularly in the form of one or the other of the numerous proprietary preparations, as a local disinfectant and also as an antiseptic. The saponaceous properties of this particular preparation make it very useful in a variety of instances in which a detergent action is to be attained in addition to the disinfection.

THYMOL.—U. S.—This is a phenol occurring in the volatile oil of thymus vulgaris and in some other volatile oils. It possesses strong antiseptic properties, but its comparative insolubility in water, 1 in 1,100, has interfered materially with its extended use. Thymol iodid, the only official combination of thymol, has been referred to in connection with iodoform substitutes.

An ideal disinfectant, or antiseptic dressing for wounds, should act strongly on the living protoplasm, should be slowly absorbed, and should affect the central nervous system but slightly after absorption. Phenol has the disadvantage of being rapidly absorbed and of profoundly affecting the central nervous system. Thymol, being but slightly soluble in water, but volatile at ordinary temperatures, is slowly absorbed, and, as its excretion keeps pace with its absorption, there is little danger that it will exert a poisonous action when used locally.

RESORCINOL.—U. S.—Resorcinol (U. S. P. 1890), a diatomic phenol that is usually referred to by its popular name, resorcin, was at one time extensively used in dermatologic practice, but is now seldom employed except for scalp diseases and sometimes internally.

PYROGALLOL.—U. S.—This is better known as Pyrogallolic Acid and is a triatomic phenol, sometimes used in dermatologic practice.

ACIDUM SALICYLICUM.—U. S.—Salicylic Acid has been used to some extent as a local antiseptic, particularly in the form of dusting powders, diluted with talcum, zinc oxid or boric acid. Salicylic acid is used extensively in dermatologic practice, particularly in the form of ointment. It is only slightly soluble (1/310) in water.

The practice of dermatology involves a special knowledge of antiseptics, and the subject can be given only general consideration at this time, so that we must content ourselves with little more than a simple enumeration of some of the official substances that are used, merely suggesting the number and variety of the available materials.

PIX LIQUIDA.—U. S.—Tar, a product obtained by the destructive distillation of the wood of one of several species of *Pinus*, has been widely used in the treatment of skin diseases, usually in the form of an ointment.

UNGUENTUM PICIS LIQUIDE.—U. S.—Tar ointment contains 50 per cent. of tar.

OLEUM CADINUM.—U. S.—Oil of Cade, or Oil of Juniper Tar, is a product of the dry distillation of *Juniperus Oxycedrus* and is closely allied to tar, being used in the same way.

BALSAMUM PERUVIANUM.—U. S.—Balsam of Peru has already been noted under expectorants. Its antiseptic properties are probably due to the benzoic and cinnamic acids which it contains. It is used in dermatology, either in ointment or in collodion.

NAPHTHALENUM.—U. S.—Naphthalene or Naphtalin and BETANAPHTHOL.—U. S.—Naphtol, are used in dermatologic practice, though the former, at least, has practically fallen into disuse for medicinal purposes.

Among other substances having antiseptic properties, used locally, is

SULPHUR PRECIPITATUM.—U. S.—Precipitated Sulphur. This and the other official forms of sulphur have been mentioned in connection with cathartics. Sulphur constitutes a most important agent in the treatment of a number of skin diseases. It is applied either in the form of lotions or of ointments. For the former, precipitated sulphur is usually preferred, while in ointments either

SULPHUR SUBLIMATUM.—U. S.—Sublimed Sulphur, or

SULPHUR LOTUM.—U. S.—Washed Sulphur is used. In the official

UNGUENTUM SULPHURIS.—U. S.—Sulphur Ointment, 15 per cent. of washed sulphur is directed to be used. This ointment is now only half the strength of that formerly official and is, therefore, better suited as a mildly stimulating antiseptic application.

SODII THIOSULPHAS.—U. S.—Sodium Thiosulphate, better known as Sodium Hyposulphite, is another useful antiseptic that is now little used medicinally, except in dermatology. It is freely soluble in water and is usually prescribed in the form of a lotion. It is said to be particularly useful in the destruction of parasitic fungi.

GLYCERINUM.—U. S.—Glycerin is not alone useful as a mild antiseptic, but is also extensively used as a vehicle for many other substances in the treatment of skin lesions.

GLYCERITUM AMYLI.—U. S.—Glycerite of starch is a preparation that was introduced many years ago to serve as an ointment base in cases in which lard or fat might prove objectionable.

Mercurials.

HYDRARGYRI IODIDUM RUBRUM.—U. S.—Red Mercuric Iodid or Binioid of Mercury is the most active of all the official germicides and antiseptics. It is comparatively expensive, however, and is only slightly soluble in water.

HYDRARGYRI CHLORIDUM CORROSIVUM.—U. S.—Corrosive Mercuric Chlorid, Bichlorid of Mercury, Mercuric Chlorid, or, more popularly, Corrosive Sublimate, is by far the most popular and most generally used of all local chemical disinfectants and antiseptics. It is extremely poisonous and many fatalities have occurred from its use, even in the vagina and in the washing of wounds. Gauze impregnated with a solution of mercuric chlorid is often placed over small or closed wounds to prevent the access of bacteria. It is widely used as an antiseptic and disinfectant, but it is extremely caustic and can not be applied to mucous membranes and to open wounds except in very dilute solutions, for fear of absorption.

Mercuric chlorid is slowly but completely soluble in 13 parts of water and in 3 parts of alcohol. The solubility of this substance in water is much facilitated by the presence of other soluble chlorids. This fact has been utilized in the preparation of the commercial tablets of mercuric chlorid that are sold for making antiseptic solutions. These tablets usually contain about 0.5 gm. (7.5 grains) each of mercuric chlorid and ammonium chlorid, the sal alambroth of the alchemists, which, when dissolved in 500 c.c. (1 pint) of water make a solution of 1 to 1,000. This solution is useful for the disinfection of the hands, for walls and floors and for many fabrics that are not injured by water.

Mercuric chlorid attacks metals and therefore must be avoided with metal instruments. It is a very popular insecticide and a number of the mercurials are used as parasitides, notably for pediculi. For this purpose, however, the various ointments of mercury are preferable.

UNGUENTUM HYDRARGYRI.—U. S.—Mercurial Ointment, contains 50 per cent. of mercury.

UNGUENTUM HYDRARGYRI DILUTUM.—U. S.—Blue Ointment, a new addition in this edition of the Pharmacopeia, contains 33 per cent. of mercury and conforms more closely to the proposed international standard for mercurial ointment. Another ointment that is sometimes used as a parasiticide is

UNGUENTUM HYDRARGYRI OXIDI RUBRI.—U. S.—Ointment of Red Mercuric Oxid, or Red Precipitate Ointment, containing 10 per cent. of red mercuric oxid.

Antisepsis of the Mucous Membranes.

The antisepsis of the mouth is important, not only because of the infectious diseases pertaining to it, but also because of the excellent opportunity that is afforded to micro-organisms to multiply there in enormous numbers on the particles of food in the cavities of teeth or wedged between them. That this is true is shown by the putrid smell acquired by particles of meat which remain but an hour or so in the mouth. The extent to which bacteria may increase may be inferred from the calculation, given by Novy, that 30,000,000,000 contain less than one-sixth of a milligram (1/400 grain) of organic matter.

The main factor in securing antisepsis of the mouth is cleanliness. If the teeth are carefully cleansed and all organic matter removed, the bacteria have less on which to thrive, and mild antiseptics then fully suffice to keep the number within bounds.

LIQUOR ANTISEPTICUS.—U. S.—Antiseptic Solution is a new addition to the Pharmacopeia, containing 2 per cent. of boric acid with aromatic antiseptic volatile oils. It is designed to be used as a mild antiseptic lotion or wash.²

The official antiseptic solution is also useful as a gargle, preferably diluted with equal quantities of water. The use of hydrogen dioxid as a spray or gargle has been mentioned, also its use in connection with the official antiseptic solution.

POTASSII CHLORAS.—U. S.—Potassium Chlorate, while not a particularly active antiseptic, has long been favorably known to be a desirable addition to gargles and mouth washes. It is soluble in 16 parts of cold water and is generally used in saturated solution, from which traces of chloric acid may possibly be liberated. Alum and boric acid are also useful as gargles.

After the use of any of these gargles the mouth should be well rinsed with water to prevent injury to the teeth.

The antisepsis of the nasal passages is usually accomplished by thorough cleansing with warm saline solution (0.9 per cent.), nine grams (135 grains) to a liter (quart) of water, or by a mild alkaline solution made by adding nine grams (135 grains) of sodium bicarbonate to the saline solution just mentioned, after which a mildly antiseptic solution, such as the official, is used as a spray or douche, or, in lieu of this, one-tenth of 1 per cent. of phenol may be added to the saline douche, but the latter is not recommended as a routine practice.³

It may be permissible here to enumerate some of the substances that have been or are used as mild antiseptic applications to the mucous membranes.

ACIDUM BORICUM.—U. S.—Boric Acid, generally referred to as Boracic Acid, is quite free from toxicity. It is soluble in about 16 parts of water and is but slowly absorbed.

GLYCERUM DIOXYGLYCERINI.—U. S.—Glycerite of Boro-

2. The official antiseptic solution is slightly acid. When an alkaline antiseptic mouth wash is desired it will be well to use the "Alkaline Antiseptic Solution" of the National Formulary. Either one of these preparations can readily be prepared by any trained pharmacist. They are very inexpensive and should be given the preference over the various nostrums that are not alone exploited as local antiseptics, but are also advertised as sure cure remedies for a very large number of intestinal disorders. The working formula for the alkaline antiseptic solution is as follows:

| | | |
|---------------------------|-----|------|
| Potassium bicarbonate | ℥i | 32 |
| Sodium benzoate, āā | ℥i | 32 |
| Borax | ℥ss | 2 |
| Thymol | ℥ss | 2 |
| Eucalyptol | ℥ss | 2 |
| Oil of peppermint, āā | ℥ss | 2 |
| Oil of wintergreen | ℥ss | 2 |
| Tincture of eudimar | ℥ss | 15 |
| Alcohol | ℥ss | 60 |
| Glycerin | ℥ss | 250 |
| Water, sufficient to make | ℥ss | 1000 |

3. The pharmacopeia of the German Hospital, Philadelphia, contains a formula for an alkaline antiseptic tablet that has found favor with some. It contains 0.25 gm. (about 4 grains) each of sodium bicarbonate, sodium borate, sodium chlorid and sodium phosphat, with 0.005 gm. (about 0.1 minim) of oil of cinnamon. One of these tablets (the same mixture can also be directed in powder) is to be dissolved in six tablespoonfuls of directly boiled water and used as a wash for the nose.

glycerin, contains 30 per cent. of boric acid and has the same uses.

SODII BORAS.—U. S.—Sodium Borate, or Borax, has an alkaline reaction and is sometimes preferred to boric acid on this account. It is soluble in sixteen parts of water.

SODII CHLORIDUM.—U. S.—Sodium Chlorid, common table salt, has been in use as an antiseptic from time immemorial, and the only reason we have for presenting it here is to call attention to the fact that the Pharmacopeia recognizes it as a valuable article of the materia medica and provides certain standards and tests for purity.

SODII PHENOLSULPHONAS.—U. S.—Sodium Phenolsulphonate, the Sodium Sulphocarbonate of former editions of the Pharmacopeia, is another mild antiseptic that has limited but well-defined uses.

Practically all the salts of the alkalis have well-defined antiseptic properties, but it is obviously not necessary to recount all of them at this time.

Complete disinfection of the nose, mouth, throat, vagina and urethra is not practicable, and is not even necessary; the main thing to be sought is the cleansing of those regions from pus and organic matter on which bacteria thrive. Mucous membranes decompose the solution of hydrogen dioxid with such copious evolution of oxygen that it can not be used in the nose, and because of this rapid action by the mucous membrane itself, a large amount frequently repeated is necessary to completely disinfect such cavities.⁴

The antisepsis of the eye is confined largely to the use of camphor, boric acid and sodium borate. In virulent affections more active antiseptics are sometimes indicated; in these cases weak solutions of mercuric chlorid, copper sulphate, zinc chlorid, silver nitrate or formaldehyd are used. These substances, however, are all extremely irritating and great caution is required. Their use by the general practitioner is not advised.⁵

Some years ago J. Stilling recommended the use of the anilin colors, more especially pyoktannin blue and pyoktannin yellow, as weakly antiseptic applications to the eye. Pyoktannin yellow is still used to some extent either as powder, pencil or in watery solution.

Burns or scalds resulting in destruction of the skin should be treated antiseptically. Treves directs that the burn be washed with a solution of hydrogen dioxid and then with a solution of boric acid; the vesicles are then opened with an aseptic needle and the surface dusted with iodoform and dressed with aseptic cotton.

LINIMENTUM CALCIS.—U. S.—Lime Liniment, or Carron Oil, so called from the name of the iron works in England where this preparation had its origin, consists of equal parts of lime water and linsed oil. It has long been in use as a popular dressing for superficial burns and constitutes a readily applied and effective non-antiseptic remedy that rapidly allays the accompanying pain. If there has been extensive destruction of tissue, this remedy should be avoided, as it is not alone difficult to remove, but also forms a covering beneath which bacteria may proliferate safe from the reach of antiseptics.

POTASSII PERMANGANAS.—U. S.—Potassium Permanganate,

4. For use in the vagina, where a simple detergent and antiseptic action is sought, the official Liquor, Cresolis Compositus in 0.5 to 1 per cent. solution will be found to be all that is required. When an astringent effect is desired the following formula for an antiseptic astringent powder will be found to answer the purpose very well.

| | | |
|---------------------|------|------|
| R. Sodii boratis | ℥iij | 60 |
| Alumen exsic. | ℥ss | 40 |
| Thymol | ℥ss | |
| Phenol | ℥ss | |
| Eucalyptol | ℥ss | |
| Olei gaultherie, āā | ℥ss | viii |

M. Sig.: A heaping teaspoonful to be dissolved in one liter (1 quart) of hot water, to be used as a douche.

5. The method of using boric acid in the eye varies greatly, but usually a 2 per cent. solution of boric acid in equal parts of distilled water and camphor water will be found to be sufficient. When it is desired to use sodium borate in connection with boric acid the following will be found satisfactory:

| | | |
|-------------------|-----|-----|
| R. Acid boric | ℥ss | xv |
| Sodii boratis | ℥ss | xxx |
| Aqua dest. | ℥ss | |
| Aque camphore, āā | ℥ss | 50 |

already referred to under the head of general disinfectants, is often considered to be devoid of antiseptic properties because of the readiness with which it oxidizes all organic matter. It is true that potassium permanganate is readily decomposed by the organic matter with which it first comes in contact, and that it would be unusual indeed to find bacteria the only form of organic matter present in any one case. When we remember, however, that a very large number of bacteria represent but an infinitesimally small amount of organic matter, we will appreciate why potassium permanganate is capable of destroying vast numbers of micro-organisms in those cases in which its action can be confined to them.

This substance finds its greatest usefulness as a local application in rendering foul ulcers odorless. For this purpose a fairly strong solution, 2 per cent., is freely used as a wash. Much weaker solutions are sometimes used with great benefit as urethral irrigations in gonorrhea and as vaginal douches. A hot 1 per cent. solution of potassium permanganate will be found extremely useful as a deodorizer for instruments after use in the vagina while awaiting sterilization. Potassium permanganate destroys some alkaloids much more quickly than others, e. g., morphin more readily than strychnin. It can not enter the circulation, hence when swallowed it can act only on the substances found in the stomach. Obviously it is not suited for hypodermic injections.

Clinical Reports

SARCOMA IN A YOUNG CHILD.

FRED S. SPEARMAN, M.D., C.M.

WHITING, IOWA.

A number of interesting points are to be noted in connection with the following case:

1. The extreme youth of the patient, so that the malignant growths or the causes favoring their production must have been present almost, if not quite, from the time of birth.

2. The occurrence of tumors in several generations of the patient's family, showing an apparent hereditary tendency to neoplasms.

3. The marked displacement of the heart and spleen from their normal locations as the result of pressure by the tumor in the lung.

Patient.—E. S., born Nov. 15, 1902, male.

Family History.—Parents are both healthy; their occupation farming. A brother and sister are also in good health. Father's father and grandmother died from carcinoma. Both died years before the birth of my patient. Father's mother had an epulis removed about six years ago. Another growth came on another portion of the gums a year or so later, but disappeared of itself.

Previous History.—The child was never very robust, but had had no serious illness before the present one.

Present Illness.—I saw the patient for the first time on July 10, 1905. The parents stated that a little more than a year previously they had noticed an enlargement in the right side of the boy's scrotum. This had grown steadily but slowly for the first eight or nine months, but since then more rapidly. It did not seem to be painful at any time, but lately, on account of its increasing bulk, had caused some inconvenience, and the child appeared slightly nauseated at times.

Examination.—This showed a tumor of an ovoid shape about half the size of one's fist in the right side of the scrotum. It was solid, smooth, not translucent, no fluctuation was present or nodules felt, and there was no tenderness on pressure. The skin over the tumor was normal, there was no redness or sign of ulceration. The left testicle could be felt in the upper part of the scrotum and was of normal size. The child was bright and intelligent. He was of rather slender build and his complexion was tanned. Evidences of rachitis were present, as shown by a rather large head, somewhat box-shaped, and a

slightly developed rosary, which became more pronounced as the case progressed. I advised operation.

Operation.—A trocar was introduced, but no fluid obtained. An incision about one and one-half inches long was made through the superficial tissues into the growth. This was of a reddish-gray color, homogeneous, was friable, of about the consistency of rather old bologna sausage, and was adherent to the tunica, which were considerably thickened. I got out the growth piecemeal, removing portions of the tunica also. A small quantity of clear fluid escaped when the upper part of the tumor was removed. Chloroform was the anesthetic used, and I noticed that the child did not breathe well toward the last, although the heart's action was fairly good throughout. Recovery was uneventful, and I let the parents do the dressing after the first week. There was a slight serous discharge for a time from the wound, but it had practically healed by July 26.

I sent the tumor to Dr. G. S. Browning of Sioux City for examination, who pronounced it a fibrosarcoma containing a large proportion of fibrous tissue.

After the operation the boy's general health improved for a time, his appetite gained and he played more with the other children.

Further History.—August 10 the parents brought him to me again. They said that he had seemed listless for a few days, caring neither to eat nor play and showing some nausea at times. His skin and conjunctivæ were slightly jaundiced. As the weather was very hot at the time, I attributed his condition to this and did not examine him closely, but gave him a calomel purge and a bitter stomachic mixture. August 13 he was again brought in, as he was no better. Jaundice was more marked, and the mother informed me that the nausea was increased and that he had complained at times of pain in the left side in the region of the lower ribs.

Examination.—Percussion showed the area of liver dullness extended nearly an inch below the costal margin. On the left side there was an area of dullness reaching from about the lower level of the fourth rib in the anterior axillary line to an inch below the border of the ribs. This dullness extended to the spine behind and nearly to the median line in front. On palpation a firm mass could be felt below the ribs. Auscultation revealed an absence of breath sounds over the lower area of pulmonary dullness and faintness in the upper portion. There was less expansion of the left side of the chest. The apex beat of the heart was displaced nearly to the left border of the ensiform cartilage. Considerable meteorism was present. Pulse was about 140 and temperature 99. I suggested the possibility of an internal growth similar in nature to that occurring in the testicle, and judged from the physical signs present that the liver and spleen were probably involved, as well as the lung. An examination of the urine made a few days afterward was negative. In view of the autopsy findings, later examinations, which I omitted to make, would no doubt have revealed renal involvement.

The patient was put to bed on liquid diet, and under fair-sized doses of calomel the jaundice disappeared to a great extent in a short time. At first the stools were bile-stained, but afterward became slate-colored, remaining so until the end. There was considerable trouble throughout on account of meteorism, requiring constant use of purgatives and enemata. The dullness extended on both sides quite rapidly, and the child's respiration became continually more embarrassed. An aspirating needle, introduced into the left chest on August 21, brought only a small amount of bloody fluid. The following day Dr. R. E. Coniff of Sioux City saw the case with me and agreed in the probable diagnosis of an internal sarcoma. A blood count made by him showed the white cells to number 35,000 to the c.mm.

At this time there was a marked bulging out of the ribs on the left side behind and laterally, although the intercostal spaces did not bulge. The dull area on both sides was nearly two inches below the costal margin and the liver was plainly palpable. The outlines, both of it and the tumor on the left side, could be seen through the abdominal walls. On deep pressure on the left side of the abdomen at the level of the umbilicus a hard body could be felt, which I thought to be a nodules in the large intestine. The apex beat was displaced to

within one inch of the right nipple and about one-half inch below. To and fro murmurs were present. They were harsh, prolonged, and of a somewhat ringing or humming quality, giving the impression of tenseness, like the sudden stretching of an elastic band. Pulse rate was about 160 and very weak, respirations over 40, no rise in temperature. There was slight puffiness of the eyelids, especially the right one, and the superficial veins on the right side of the neck and over the liver were distended. Priapism was present throughout the latter part of the case, being more marked after micturition. A condition of phimosis present may have had something to do with this, as well as the splenic involvement. There was no urinary suppression at any time, although the quantity was decreased. The child became continually more emaciated, his breathing more and more difficult, as toward the last air entered only the very apex of the left lung, accessory muscles of respiration were brought into play, the heart's action became faster and weaker, and on September 1 he died.

Autopsy.—This was performed the next day. An incision was made from the ensiform cartilage to the umbilicus through the abdominal wall, which was very thin. The diaphragm could be seen bulging downward on the left side and was very tense on account of pressure of the growth from above. On incision the tumor was found closely adherent to the diaphragm, which formed its base. It was of a spongy, stringy consistency and nearly all of the left lung was involved. The mass was softer in the center, being almost semi-fluid, and portions removed were of a grayish color, slightly tinged with pink. The spleen was not much enlarged and was shoved down to the level of the umbilicus. The liver extended down to the same level, was very friable, and of a lighter color than normal, and yellow patches and streaks were present throughout. A whitish fluid escaped from the cut or broken surfaces on squeezing. The kidneys were enlarged and engorged, being of about the same color as the spleen.

Specimens of the different organs were sent to Dr. Henry Albert, state pathologist, of Iowa City, for examination. He reported that the pulmonary growth belonged to the class of endothelial sarcoma, although the arrangement of the cells was such that many pathologists would call the growth a carcinoma. The liver showed subacute inflammation. The spleen had distinct areas of inflammatory changes, with infiltration of round cells, and the kidneys manifested a distinct acute diffuse nephritis. Neither liver, spleen nor kidneys revealed any evidences of malignancy, however.

PNEUMONIA COMPLICATED BY MENINGITIS.

W. H. AXTELL, M.D.

Surgeon Northern Pacific Railway.

BELLINGHAM, WASH.

I report the following because of its infrequent occurrence:

History.—Mrs. W., aged 32, family history negative, very sparsely built, has one son 5 years of age, and has had no illness since childhood. The present illness began Nov. 28, 1904. In the morning she had a sharp chill, followed in the afternoon by high temperature and a slight pain in the right lower chest. During that night and the forenoon of the next day the pain became very much augmented.

I saw her at 3 p. m. on November 29. Her temperature then was 105 1/5; pulse, 140; respiration, 36 and panting in character; she was cyanotic. Auscultation revealed crepitant râles in the lower lobe of the right lung in the axillary line. The area of dullness on percussion was about the size of a silver dollar. The pleurisy extended over a greater part of the right lateral chest. There was slight delirium when partially asleep.

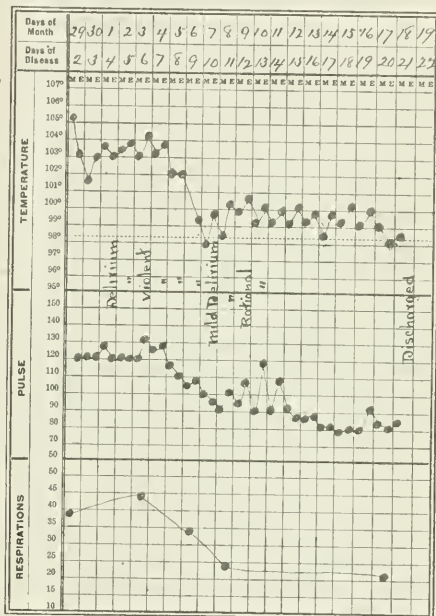
Diagnosis.—Lobar pneumonia, with pleurisy.

Course of Disease.—She was moved to the hospital the same evening. The course of the disease was tempestuous, but followed that of a typical pneumonia, the crisis occurring on the

eighth day. On the third day slight meningeal symptoms developed. These began with a very sharp frontal headache, the pain of which was very distracting. The pupils, at first contracted, were dilated after the fourth day. There was some rigidity of the muscles at the back of the neck, but no convulsive movements. The heart showed no signs of depression or of inflammation. The delirium, at first mild, increased in severity until, on the day of the crisis, she became a raving maniac.

Osler says: "Meningitis is usually associated with endocarditis and occurs in 8 per cent. of fatal cases and endocarditis in 25 per cent. of all cases."

This woman had no heart complications whatever. Two days before the crisis, when the temperature was the highest, the patient became so violent that it required the combined effort of two nurses, night and day, to restrain her. On the twenty-first day of the disease she was discharged from the hospital, thoroughly convalescent. Up to the present time her mental condition has remained normal and there has been no evidence of insanity. The treatment was simply supportive. The ice cap was applied for the relief of the head symptoms and cool spongings for the temperature.



POINTS OF INTEREST.

1. Complication of meningitis without endocarditis.
2. The violent nature of the disease itself. (The meningitis in no way retarded or altered the usual course of the disease or lengthened its duration.)
3. The heart during the whole course of the disease and without special treatment showed very little depression.
4. A study of the chart shows a marked similarity in the variation and fluctuation of the delirium, temperature, pulse and respiration.
5. Of the many authorities consulted, Osler is the only one who particularly mentions meningitis as a complication of pneumonia. Tyson in his recent work simply calls attention to Osler.
6. Complete recovery.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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[Further information on second advertising page following reading.]

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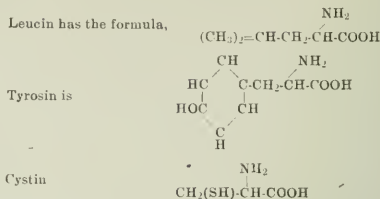
THE SYNTHESIS OF PROTEIDS.

When the average medical man who has not had a recent training in chemistry sees an article on the modern progress in the study of the proteid molecule, he is generally of the opinion that the contents will be beyond the range of his chemical knowledge and passes the matter by. The fundamental principle of the structure of the proteid molecule, however, is not beyond the comprehension of the man who possesses but very little knowledge of chemistry. The same is true of the principles underlying the experiments of Fischer and Curtius in the synthesis of proteids. As these studies in proteid chemistry have produced what are probably the most important advances made in the fundamental principles of physiologic chemistry and biology for many years, we feel it our duty to attempt to explain at least the essential principles of the subject to our readers.

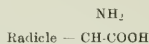
The first insight into the composition of the proteid molecule was obtained by studying the products obtained by splitting it up by means of various agencies, such as the digestive ferments, boiling acids, superheated steam. After passing through stages in which albumoses and peptones are produced, we eventually obtain a collection of simpler substances which are dissimilar to the original proteids. The longest known among these substances are leucin and tyrosin, but they are merely two of a great number of similar bodies, nearly twenty of which have already been isolated in pure condition and thoroughly identified. The important thing to bear in mind about these substances is that they are the elementary components of the proteid molecule, from which it is built up. The German writers usually refer to them as the *Bausteine* (building stones) of the proteid molecule. It has been firmly established that they exist, ready formed, in the proteid molecule, and that the process of digestion by trypsin, or by boiling acids, or by any other means, merely consists in separating these building stones from one another, so that the entire structure falls apart, and in this way we obtain the single components of which it was formed.

The next thing to take into consideration is the chemical structure of these substances, and here lies the key to the problem, for we find that each one of them is possessed of a common chemical grouping to which it

owes its most essential properties. For example, let us examine the structural formulas of a few of the *Bausteine*.

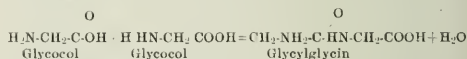


It will be observed that each building stone is an acid, which has an NH_2 group (amido group) substituted for a hydrogen atom on the carbon nearest the acid radicle (COOH), and hence they are called amino acids. It makes no difference what the rest of the radicles are, whether they are simple chains (leucin) or members of the aromatic series (tyrosin) or sulphur-containing bodies (cystin). without exception, this relation of an NH_2 group to an acid radicle is constant, as in this formula:



Through this arrangement every one of the constituents of the proteid molecule is provided with a group with a strong basic character (NH_2) and a group with a strong acid character (COOH), and hence it is possible for them to unite with each other in indefinite numbers and, because of the great variety of individual substances, in practically an almost infinite number of combinations. It is believed that it is in just this way that the proteid molecule is built up.

Now, because of the existence of both acid and basic characters in the *Bausteine*, it is possible to make them unite with one another again, after they have been separated during the process of splitting of the proteid molecule. (This process of splitting is called "hydrolysis," because, in the reaction, water is taken up by the substances.) By artificially uniting *Bausteine* in this way Curtius in Heidelberg, and more particularly Emil Fischer in Berlin, have attempted to rebuild a proteid molecule. The bodies so formed are called "polypeptides," and the process by which they are made may be illustrated by showing the reaction by which the simplest one of them, glycyl-glycin, is formed through the union of two molecules of glycocol, the simplest of the *Bausteine*.



It should be noticed that here, in the building-up process, water is split off, which corresponds to the fact that water is taken on (hydrolysis) in the breaking-down process. By means of such reactions it has, up to the present time, been possible to build up large molecules containing as many as six or seven of the *Bausteine*, and it is only a matter of time, labor and money before much larger molecules may be formed.

It must not be imagined that the structure of the complete proteid molecule is simply a long straight string of amino acids joined only in the same way as the components of glycyl-glycin. The existence of diamino acids, of benzene rings, of hydroxyl groups as in serin or tyrosin, of ring compounds as pyrolidin carbonic acid, of substances with two acid groups as glutaminic and asparaginic acid, adds complications to the formation until it is impossible to estimate just how all the various building stones may be arranged. One must also bear in mind the size of the proteid molecule, which Hofmeister has estimated (for serum albumin) as having a molecular weight of 10,166, with an empirical formula of $C_{450}H_{720}N_{116}S_6O_{140}$, and for hemoglobin the molecular weight has been estimated at 16,669. Within such a "giant molecule" there is room for variety almost beyond computation.

The question that the practical man will probably ask at this point is: "Are these polypeptids proteids; has a proteid molecule yet been formed?" The answer to that must be as follows: Polypeptids are not proteids in the sense that egg albumin or fibrin are; they are crystalline, soluble substances, and much smaller in size and molecular weight than even the peptones, which are the smallest divisions of the proteid molecule that retain most of the proteid characteristics. They are, however, probably intermediary between the peptone and the amino acids into which it splits, and they possess among others the following very important characters that are exhibited by proteids: First, they give the well-known biuret reaction, by which we usually distinguish peptones; second, and most important, they are split up by trypsin, exactly as are the proteids, liberating the *Bausteine* again. As the enzymes are such specific substances, acting only on molecules, with very specific natures and structural configuration, this is very strong evidence of the close relation of these synthetic products to the larger molecules that are ordinarily called proteids.

It should also be borne in mind that neither Emil Fischer or any other scientist expects in this way (or in any other way) to "create life in the test-tube." That is a fantasy that exists only in the minds of the ill-informed. It is hoped, indeed expected, that true, typical proteids may eventually be synthesized, but the production of a proteid is in absolutely no way comparable to the production of a living cell.

THE PARASITIC ORIGIN OF MALIGNANT NEOPLASMS.

The number of observers who have discovered the cause of malignant neoplasms in the past ten or fifteen years almost equals the number who have found the parasite of syphilis. Bacteria, yeasts, protozoa, all the different varieties of minute animal and vegetable life, have been, in turn, incriminated only to be dismissed from the bar of professional opinion with the verdict of not guilty, or the more canny one of "not proven." The

subject seemed to have been attacked from all possible sides and tested in all possible ways, but, judging from the recent work of Schmidt,¹ methods of attack are still open.

If cancers and other malignant growths are due to parasites, there surely must be some reason why we can not see these micro-organisms. Past experience with other parasites furnishes a variety of explanations. The parasite may be ultramicroscopic, it may be unstable by methods at present known, or it may so closely resemble the cells of the host as to be indistinguishable. Schmidt thinks that he has discovered the parasite in an ameba which he has been able to observe in carcinoma in various phases of its existence. Amebas have a definite cycle of development, and among other things, at a certain stage in their development, require an intermediate host, which may be an insect or some low form of vegetable life.

The researches of Schmidt, who, reasoning from analogy, concluded that such an intermediate host must be present, led him to the discovery that a certain form of mould obtained from malignant neoplasms contained bodies corresponding in morphology to amebas in certain stages, which were not present in the same variety of mould obtained from other sources. The mould and the enclosed parasite, under favorable circumstances, could be observed to develop, and in their development went through entirely dissimilar processes.

The inoculation into animals of moulds obtained from new growths led to the formation of malignant neoplasms in a percentage of cases much too high to have been due to coincidence. In all the inoculated animals in which positive results were obtained the growths appeared at the point of inoculation and after a period of incubation which was approximately the same in all instances. In some of the experimental cases the tumors gave rise to metastases, in others they did not; in all cases they were histologically of a malignant type, either carcinomata or the so-called Jensen's tumor.

After the discovery of the parasite Schmidt reasoned that if it were really responsible for malignant neoplasms it should, if inoculated into subjects with such growths, give rise to a reaction similar to that observed after the administration of tuberculin to a patient with tuberculosis. With this idea in view, a number of individuals suffering from inoperable new growths were inoculated subcutaneously with dead cultures of the organism. In nearly all cases the result was a rise in temperature, accompanied in some instances by very marked local reaction. The amount of dead culture injected varied from one-tenth of a milligram to five milligrams, and the injections were always made at a point some distance from the new growth. In at least one instance failure to react led to a diagnosis of a non-malignant disease, the diagnosis being confirmed by operation.

1. Münch. med. Wochft., 1906, III, 162.

These observations are certainly striking, and the work is along hitherto untraveled lines. Great possibilities are opened up, for, if patients with malignant neoplasms react to injections of Schmidt's organism, it should be possible to cure the disease by the inoculation of the attenuated virus according to the principles laid down by Wright for the treatment of certain bacterial diseases. So far as Schmidt's observations on human beings are concerned, we think it can fairly be said that as yet a sufficient number of tests have not been made. We must acknowledge the suggestiveness of the work, however, and hope that it will soon be substantiated.

HEART BLOCK AND THE STOKES-ADAMS SYNDROME.

The cause of the heart beat, and the path which is taken by impulses passing from the auricles to the ventricles, has been a matter of controversy for years. The physiologists have practically always been divided into two camps regarding the matter, one group insisting that the transmission of the heart impulse takes place through the nervous system, the other that it occurs by means of muscular tissue. Until within two or three years the former group seemed to have a little the best of the argument, but the discovery by His, Jr., in 1903, that there existed a muscular band which connected the auricles with the ventricles put an entirely new face on the matter. This bundle, which is now quite generally spoken of as the bundle of His, is, in man, a narrow band 18 millimeters long, 2.5 millimeters wide, and 1.5 millimeters thick. The bundle runs posteriorly in the septum of the ventricles, from which it passes into the musculature of the right auricle and its valves.

The experimental demonstration that the bundle transmits the impulses from the auricles to the ventricles has been made by His, Humblet, and more recently by Erlanger,¹ whose interesting experiments should be read by all students of heart disease. Without going into detail regarding the methods of experimentation, it may be stated that by varying degrees of compression of the bundle of His all stages of heart block, i. e., interruption of the transmission of impulses from the auricles to the ventricles, may be obtained. Slight compression results merely in an increase in the inter-systolic pause; more marked compression produces intermittency in the ventricular contractions, and complete compression causes the auricular and ventricular contractions to occur independently of one another. The experiments also showed that, while the accelerator cardiac nerves are not influenced by heart block, the vagi lose their control over the ventricles.

The bearing which these observations have on certain forms of heart disease, and especially on the so-called Stokes-Adams syndrome, can not be overestimated. It will be remembered that the cardinal symptoms of this condition are bradycardia, in which the auricles may be

definitely shown to beat more rapidly than the ventricles, and apoplectiform or epileptiform attacks. As Erlanger states, all the cardinal symptoms of Stokes-Adams disease may be explained by the effects of heart block. The relation of heart block to slow pulse and disparity of action between the auricles and ventricles has already been made clear in discussing the experimental work. The epileptiform attacks are explicable as the result of anemia of the brain, and are doubtless similar to those seen after hemorrhage in warm-blooded animals. The apoplectiform attacks are probably due to venous congestion of the brain, which has long been known to be associated with slow respiration, paralysis of the glottis, and spasmodic symptoms.

A glance at the autopsy protocols of the published reports of cases of Stokes-Adams disease shows at once that, so far, no one pathologic condition has been found as a cause. It is also apparent that in some cases lesions are described which could easily exert pressure on the bundle of His—tumors of the septum, for example. Naturally, up to the present time, there has not been any opportunity to examine this bundle in any large number of cases. We believe that a case of Stokes-Adams disease has recently been reported by Stengel, in which definite disease of the auriculo-ventricular bundle was present, and there is little doubt that similar reports will soon be forthcoming. Some points which have been developed in the treatment of this affection, on purely empirical grounds, are interestingly made clear by the experimental work, especially the disadvantages of digitalis in this affection, and the good results sometimes following the use of iodids. The latter may be partly explained on the ground that the disease of the bundle of His is sometimes syphilitic. Erlanger suggests that atropin, by steadying the pulse, will also be of value in this condition.

OUR DUTY REGARDING "PATENT-MEDICINE" LEGISLATION.

A large majority of "patent medicines" are injurious to the health of the public and the cause of many deaths. We believe this is the opinion of every physician, except the few who are biased by commercial relations. There is not a practicing physician who is not conversant with the deadly nature of some "patent medicines" and who, from his own individual experience, can not bear witness to cases in which harm has resulted from their use. It seems strange, therefore, that our profession is not earnestly supporting the movement for controlling the sale of these preparations.

We have emphasized the fact that it is neither wise nor necessary to oppose "patent medicines" *per se*, and few physicians do so. But there can be no argument against the need of legislation for the protection of the public against fraud in "patent medicines," and especially against those containing such poisons as cocaine, opium or its alkaloids, chloral and acetanilid. And yet

1. The Journal of Exp. Med., 1906, vol. VIII, 8.

the experience this year in several states emphasizes the fact that physicians are taking practically no interest in the legislation that is being attempted.

In South Carolina they had a very fair bill before the Legislature, but it was killed simply because those who were working for it—as a rule, laymen—were unorganized. The opposition, on the other hand, was well organized by the Proprietary Association of America, and this association was especially in a position to control many of the druggists, as it also partially “controlled” the newspapers with the famous “red clause.” According to the *Journal of the South Carolina Medical Association*, a delegation of druggists visited the capitol to work against the measure, because “if it were passed it would be simply a diversion of the revenue of the traffic into the pockets of dealers in other states, and not a restriction of the sales with protection to the public as was contemplated, and that such a diversion would be not only unjust, but very injurious, to our own drug sellers.” But while the druggists were being used to oppose the measure, physicians were inactive. Referring to this fact, the above journal says: “We are able to comprehend, even if we do not sympathize with, the action of the druggists, but we neither understand nor excuse the indifference of physicians to a measure which concerns one of the most important planks in our platform.”

The druggists seem to have been organized in South Carolina, as they are in other states, by the Proprietary Association, evidently through the N. A. R. D., but we do not believe that a majority of the druggists are opposed to a law regulating “patent medicines.” Most certainly many of those who are opposing such legislation do so at the instigation of the “patent medicine” manufacturers and could easily be won over if physicians would but appeal to them. “We believe,” says the *Journal of the South Carolina Medical Association*, “that their best interests will be served by working in association with physicians and not in opposition. Pharmacists and physicians should be closest friends, as they are mutually dependent and their aims and ideals should be in harmony. However commercial their recent action may indicate them to be, we believe that if we could get together the result would be a better understanding and a higher conception of the duty which they, as well as we, owe the public.”

The journal urges the physicians of South Carolina to give the matter thought and, when the occasion presents itself again, to assist in obtaining the legislation which they know is needed in the interest of public health.

In Iowa a bill is before the Legislature, modeled after the North Dakota law. It is a very conservative bill, and was introduced by Dr. Young, a member of the Senate. The profession of Iowa seems to be as unconcerned in the matter as are the physicians of South Carolina. A correspondent, who has been in touch with what has been going on in the Iowa Legislature, tells us that at the

meeting of the committee on February 16 to consider the bill four different representatives of the “patent medicine” manufacturers appeared before the committee, but that no physicians were present, except those who were members of the Legislature. We are informed that the proprietary men did not make a very good impression on the committee, and felt that there was not much response to their talk, which was largely an attack on the *Ladies' Home Journal* and *Collier's Weekly*. But they were not long in putting their machinery into effect in Iowa, as they did in South Carolina and in other states, with the result that druggists from all parts of the state wrote to the members of the Legislature asking them to oppose the bill, and, of course, such efforts are having their effect. The newspapers responded, too, but not as they did in Wisconsin and in Massachusetts last year. Even one medical member of the House is reported to have weakened when he received several letters from druggists in his district. Those favoring the measure expected some help from the medical profession in Iowa, but, from all reports, received practically none.

From Mississippi comes almost the same story. A bill, also modeled on the North Dakota law, was introduced by Representative Lockwood, not himself a physician. Several medical societies passed resolutions approving the bill, but the members of these societies, having passed the resolutions, evidently considered that they had done their full duty as men and physicians. A correspondent who was on the ground writes:

“Physicians used no influence in favor of the bill, except to pass resolutions indorsing it; they advanced no arguments; they wrote no letters to the committee or to members of the legislature. So much for sins of omission. While the physicians of Mississippi were attending strictly to their private affairs and forgetting the interests of public health the Proprietary Association of America was busy. It sent men up from New Orleans to Jackson to lobby; it manipulated the ‘red-clause’ press (though a number of independent weeklies through the state came out squarely for the bill); it distributed literature. Antikamnia sent a special agent to the spot. (Observe how this ‘ethical’ proprietary shows its true colors when quackery and fraud are threatened.) The retail druggists were stirred up to write to the Legislature, and protests poured in on the committee having the bill in charge. This committee is largely made up of physicians. Mr. Lockwood looked, with some confidence, to a favorable report. He made an error of estimate.

“Now come the sins of commission. The arguments of the proprietary interests and the complaints of the retail druggists were more potent with the physicians of the Committee on Public Health than principle, the honor of their profession or the public health which they were supposed to conserve. The bill was killed in committee, and the four physicians on the committee are said to have voted to kill the bill.”

We hope that the physicians referred to voted to kill the bill because it was not satisfactory, and not because

they were opposed to the regulation of the patent medicine business. We understand that another bill is in course of preparation and will be introduced immediately. We sincerely hope that the physicians on the committee will at least vote in favor of letting it come out into the open, in which case it is likely to pass, because public sentiment is in favor of the proposed legislation. It certainly will if physicians do their full duty.

The fight against fraud in "patent medicines" is on in Maryland, Mississippi, New York, New Jersey, South Carolina, Virginia, Iowa, Ohio, Kentucky and in some other states. In each of these states, we believe, the state society has a committee on legislation. It is the duty of that committee to take the lead in the movement; if there is no committee, then it is the duty of the president of the state association to see that the medical profession in his state is at least given an opportunity to act. If those fail to act who have been appointed or elected to represent and lead the profession in movements in which it is interested, then little successful work may be expected, unless some unusually public-spirited member comes forward and takes the lead.

Our profession claims to act on altruistic motives; here is an opportunity for its members to demonstrate its altruism by work. The movement against the "Great American Fraud" is being made by non-medical men; should we not support them? Is it not our duty to do this? Can we do less than help in this propaganda against the unrestricted greed of those nostrum manufacturers who are not only swindling the people, but undermining their health and who even sacrifice human life to satisfy their greed? The facts recorded on page 666 of this issue concerning one nostrum alone should be sufficient to arouse every physician to appreciate what his duty is.

THE BOSTON SESSION OF THE AMERICAN MEDICAL ASSOCIATION.

The Boston session of the American Medical Association will be the largest ever held. There is no doubt of it. It will be forty-one years since the Association met in New England, and the historical attractions will, of themselves, be sufficient to draw many to the meeting. The members of the profession from New York—city and state—will go as they have never gone before. From the south, the southwest and the extreme west there are more inquiries about railroad rates, accommodations at Boston, etc., than in any other year. New England itself is also being heard from in a way to show that it will be unusually well represented at the session. The officers of nearly all the sections report filled programs unusually early and more evidence of interest in scientific work. While the passenger associations have not acted definitely, those in authority have given assurances that half rates will prevail, with the extension of time to those who want to extend their visit in New England. It is hoped that provisions will be made to accommodate those who want to go by one

route—say by the lakes—and return by another. Many foreigners have already accepted invitations to attend, among them Professor Trendelenburg, Leipzig, Germany; Mr. Reginald Harrison, London, Eng.; Professor von Rosthorn, Heidelberg, Germany; Professor Dührssen, Berlin, Germany, and Professor von Frey, Würzburg, Germany. Hence we repeat: The Boston session of the American Medical Association will be the largest ever held—and the Boston people know it and are acting accordingly. Committees have been working for months making preparations, and they promise good accommodations and a thoroughly interesting and profitable time to all who attend.

THE PHILIPPINE JOURNAL OF SCIENCE.

We are glad to welcome into the journalistic field such a fine periodical as the *Philippine Journal of Science*, the first issue of which has just made its appearance. This journal takes the place of the bulletins formerly issued by the Bureau of Government Laboratories of the Philippine Islands. The periodical is to contain original articles by members of the bureau staff, as well as by others who are doing scientific work in the Philippine Islands and adjacent countries of the Orient. The journal will thus have the unique function of presenting the united scientific results achieved in contiguous countries in the tropics. With the growing interest which is being taken in tropical medicine, it seems certain that a publication of this character will secure a large number of readers. The present issue contains articles on "The Water Relations of the Coconut Palm," by E. B. Copeland; "The Coconut and Its Relation to the Production of Coconut Oil," by H. S. Walker; "The Occurrence of *Schistosoma Japonicum* vel *Cattoi* in the Philippine Islands," by P. G. Woolley, and "A Study of Some Tropical Ulcerations of the Skin with Reference to Their Etiology," by R. W. Strong. The last is illustrated profusely by excellent photomicrographs of histologic sections of the skin. The mechanical work of the journal is excellent. It is announced that the journal will be issued in approximately ten numbers a year.

THE PURE-FOOD BILL.

Rather contrary to expectations, the Heyburn Pure Food Bill passed the Senate February 21 with only four dissenting votes. The constitutional objections to the bill, raised by Senator Spooner, seem rather far fetched and we think he is only making excuses for his opposition. The standard for food and drinks is purity, or at least safety, and a plain statement on the package of what its contents consists; and these ought to be a sufficiently definite standard and certainly within the spirit of the best good for the public. The bill has now to go before the House, and it is openly charged by press-correspondents that a number of votes were given to the bill with the understanding that it would not be disposed of by the House at this session. The friends of pure food must prevent the realization of this ex-

peetation. If the senators were amenable to public opinion, members of the House are still more so; they must reckon with their constituents more directly, and it will be strange if the policy of delay thus suggested can be successfully carried out. There is all the more need, however, that we should not slacken in our efforts to insure the passage of the bill. The whiskey and "patent medicine" interests and the innumerable army of adulterators of all kinds will not be idle. All the influences that have been at work heretofore will now be more active than ever to prevent the passage of the bill or to emasculate it by amendments. Only half the battle has been won, and we may lose all if we allow ourselves to be lulled into a false security by this success. It will not be much trouble or expense for each physician to write to his congressman, asking him to support the pure food bill; just a sentence or two will be sufficient. And if half the physicians of the United States do this, it would go a long way toward getting a national pure food bill.

AN OBJECT LESSON IN PURE FOOD.

A New York chemist is reported to have treated some of his friends to what he called a "synthetic dinner," each article of food being an artificial substitute for the real thing. It is not stated how well these materials tasted, but it is rather significantly said that after the dinner the chemist's friends joined the ranks of the "pure fooders." As the *Chicago Tribune* aptly remarks, it was an object lesson showing "what kind of meals many of the people of the United States might expect in a few years to be sitting down to three times a day, in the absence of legislation for their protection."

Medical News

ILLINOIS.

Smallpox.—Smallpox in dangerous form is epidemic in Carroll County. Twenty cases are reported in Lanark and 2 in Milledgeville. All lodge meetings and public gatherings have been prohibited in Lanark and the schools have been closed. —The 2 cases of varioloid reported in Lincoln have been rigidly quarantined and no new cases have appeared.

Personal.—Dr. R. S. Frisbie, assistant superintendent of the Asylum for Feeble-Minded, Lincoln, has resigned. —Dr. J. L. Allegen, Rockford, was assaulted February 14 by William Gleason, whose horse became frightened at Dr. Allegen's automobile. —Dr. F. O. Jackman, Bloomington, is suffering with septicemia. —Dr. S. P. S. Edwards, Moline, has been elected secretary of the Tri-City Sanitarium.

Chicago.

Personal.—Dr. Palmer Findley has accepted the chair of gynecology in the College of Medicine of the University of Nebraska, Omaha, and will remove to that city in the spring.

Decision Against Medical Society.—Judge McKewn of the Superior Court has rendered a decision against the Chicago Medical Society in its efforts to maintain in Grant Park a boulder placed there in memory of Dr. Charles Guthrie and his pioneer work on chloroform.

Personal.—Dr. Charles Adams has returned from a trip to Mexico. —Dr. Nicholas Senn has been selected to deliver the oration on surgery at the International Medical Congress, Lisbon. —Dr. Frank Billings is taking a yachting trip in the Caribbean. —Dr. Willoughby Walling is visiting in New Orleans. —Dr. S. Jakubowski has had his name changed by decree of court to S. Jackson.

Public Health Condition.—For the week ended February 24 decreases are shown in death rates of all diseases excepting typhoid fever, which remains the same as for the previous week. The deaths of the week numbered 594, equivalent to an annual death rate of 15.10 per 1,000. Pneumonia caused 108 deaths; consumption, 52; nephritis, 49; violence, including suicide, 44; heart diseases, 44; nervous diseases and cancer, each 31, and acute intestinal diseases, 30.

INDIANA.

Smallpox.—It is reported that 20 cases of smallpox have developed in Michigan City since February 25.

Damages Against Hospital.—Mrs. Lillie M. Grimes, Summitville, was awarded \$2,500 damages against the Marion Hospital Company, January 27, for injuries sustained June 16, 1904, by falling from a second-story window of the hospital.

Physician Acquitted.—Dr. William H. Dings, Mitchell, charged with having performed an illegal operation on Carrie Shaw, Sept. 8, 1894, from the effects of which she died, was acquitted in the Circuit Court, February 21.

Do Not Wish Notoriety.—At the regular meeting of the Fort Wayne Medical Society, the medical society of Allen County, February 20, a resolution was adopted that a scrap book be kept by the secretary of the society in which is to be preserved all articles appearing in the daily papers, in which the names of members of the society are mentioned in connection with cases.

Licenses Revoked.—The State Board of Medical Registration and examination has revoked the following licenses: "Dr." Louisa Wessell, Fort Wayne, and "Dr." Nelson D. Ross, Muncie. —"Dr." George Snider, a "magnetic healer" of Richmond, has been ordered by the state board to discontinue the practice of medicine under penalty of being arrested and prosecuted for violation of the state law.

Pathologic and Bacteriologic Laboratory.—Indiana University, Bloomington, announces the opening of its new laboratory of pathology and bacteriology in which courses are offered in medical bacteriology, pathologic anatomy and pathologic physiology, and which offers gratuitous service to the physicians of the state in all lines of laboratory diagnosis falling within its province, such as examination of sputum, pus, genitourinary discharges, the tests for diphtheria, meningitis, malaria, typhoid fever, examination of autopsy material, uterine scrapings, etc.

January Disease and Death.—Bronchitis and tonsillitis were the most prevalent diseases; pneumonia stood fourth and scarlet fever fifth; in Allen County an epidemic of smallpox with 52 cases was reported. In all but 27 counties of the state typhoid fever was prevalent. The deaths of the month numbered 2,995, or 411 fewer than in January, 1905. The annual death rate for cities was 16.5 per 1,000, and for the country 11.5 per 1,000. Of the decedents 405 were less than one year of age and 794 had attained or exceeded the age of 65. Consumption caused 419 deaths; pneumonia, 415; violence, 122; cancer, 113; influenza, 45; cerebrospinal meningitis, 38; typhoid fever, 35, and diphtheria, 32.

Personal.—Dr. Allison Maxwell, Indianapolis, has resigned as emeritus professor of the practice of medicine in the Indiana Medical College, the school of medicine of Purdue University.

—Dr. T. Victor Keene, Indianapolis, was seriously burned while working in the State Laboratory, February 9. —Dr. Thomas W. Moorehead has been elected president, and Dr. Myron A. Boor, secretary, of the Terre Haute Board of Health.

—Dr. George T. McCoy, Columbus, has been appointed a member of the State Board of Health, vice Dr. Charles M. Eisenbeiss, Elkhart, resigned. Dr. Eisenbeiss has been appointed postmaster of Elkhart. —Dr. Martin Hassenmiller, West Baden, has returned from Europe. —Dr. B. Frank Chambers, Lyons, has been appointed surgeon for the Vincennes Division of the Vandalia Road. —Dr. and Mrs. Ernest S. Baker, Lafayette, have left for California.

KANSAS.

Adds School for Nurses.—At the last meeting of the board of trustees of the University of Kansas it was decided to establish a school of training for nurses in the Kansas University Medical School, Rosedale.

School at Epileptic Hospital.—A school has recently been opened for the patients at the State Hospital for Epileptics, Parsons; 25 children are at present in attendance. Manual training will be given a prominent place in the school work.

Personal.—Dr. Alfred F. Yole, Leavenworth, has been appointed physician at the federal penitentiary, vice Dr. F. Meigs

Thomas, resigned.—Dr. J. L. Everhardy, Leavenworth, has been appointed county health officer of Leavenworth County, and Dr. William R. Van Tuyl, Leavenworth, county physician.—Dr. E. W. Reed, Holton, has been appointed physician of Jackson County, vice Dr. Joseph C. Shaw, term expired.—Dr. William C. Bower, Lebanon, has been appointed local surgeon for the Rock Island Railway System.

Hospital Notes.—Arrangements have practically been completed for the purchase of the Stewart Hospital, Hutchinson, by twelve physicians of the city, who will place the institution under the charge of the Dominican Sisters of Mercy. The officers of the institution are: Dr. Clemens Klippel, president; Dr. James E. Stewart, vice-president; Dr. J. E. Foltz, secretary, and Dr. Richard A. Stewart, treasurer.—At the annual meeting of the board of directors of the Wichita Hospital it was announced that the hospital is practically self-supporting, the deficit for 1905 having been only \$77.27.—The directors of the Sabetha Hospital Company have decided to increase the capital stock to \$50,000 in order to build a large brick addition to the present building, which is overcrowded.—The Sisters of Charity expect to build a hospital in Leavenworth at an expense of not less than \$50,000.

LOUISIANA.

One Case of Yellow Fever.—On January 28 one case of yellow fever was reported from Kenner, Jefferson Parish, by Dr. Gustave M. Corput of the U. S. Public Health and Marine-Hospital Service.

Sanitarium Fire.—The Fenwick Sanitarium, Abbeville, was burned to the ground February 6, but all the patients were removed in safety. The loss is estimated at \$40,000, three-fourths of which is covered by insurance. The institution will be rebuilt.

Lepers' Home Purchased.—After long negotiations the Indian Camp property in Iberville Parish has been purchased by the state for the lepers' home. The land comprises about 358 acres, and on this four two-room cottages will be erected, each containing ten bedrooms.

The New State Board of Health.—The new State Board of Health reorganized January 8 with the following officers and members: President, Dr. Clifford H. Irion, New Orleans; vice-president, Dr. W. Glendower Owen, White Castle; secretary, W. S. Ingram, New Orleans, and members, Drs. George W. Gaines, Tallulah; Allen J. Perkins, Lake Charles; T. Edgar Schumpert, Shreveport; James M. Batchelor, New Orleans, and William G. Armstrong, New Orleans. The central office of the board will continue to be at 204 Carondelet Street, New Orleans.

Personal.—Dr. Clifford H. Irion, Benton, recently appointed president of the State Board of Health, has moved to New Orleans, and Dr. R. A. Gullage of Gilliam has purchased Dr. Irion's practice.—Dr. J. Wofford Sanders has resigned as a member of the board of health of New Iberia, and Dr. William J. Emmer has been appointed his successor.—Dr. Charles M. Menville, Houma, has been appointed coroner of Terrebonne Parish, vice Dr. Claiborne A. Duval, deceased.—At the annual meeting of the board of administrators of the Charity Hospital, New Orleans, February 5, all the officers of the board and of the hospital without exception were re-elected.

MARYLAND.

Building Fund for Hospital.—The directors of the Union Hospital of Cecil County are making efforts to raise \$5,000 additional and expect to commence building during the summer at Elkton. Committees have been appointed on plans and site.

Baltimore.

Deaths.—There were 51 deaths from pneumonia and 34 from consumption for the week ended February 24.

Anniversary Exercises.—At the John Hopkins thirtieth anniversary exercises, held February 22, Prof. Lewellys F. Barker, Dr. Osler's successor, delivered an address on "The Science of Medicine and Medical Practice." A marble bust of Dr. William Osler was presented to the university by Mr. Daniel C. Gilman, ex-president, on behalf of the admirers of Dr. Osler. It will be placed in McCoy Hall.

Personal.—Dr. George C. Wegefarth has gone to Cuba.—Dr. John Williamson Palmer, the distinguished poet and author of "Stonewall Jackson's Love," is critically ill.—Drs. James S. Fenton, William S. Love, James D. Igglehart, G. Milton Linthicum, C. Frank Jones, Silas Baldwin, Frederick Caruthers, Patrick F. Martin and Thomas S. Sudler have been appointed coroners for Baltimore.

MASSACHUSETTS.

Must Report Tuberculosis.—Boston physicians have been notified by special circulars that they must report all cases of tuberculosis coming under their observation. It is thought that not more than one-half such cases have been reported in the past.

Westfield Vital Statistics.—The board of health of Westfield reports 203 deaths in 1905, a rate of 14.91 per 1,000. Of these 20 were from pneumonia, 25 from tuberculosis, and 29 from heart disease. There were in the town, during the year, 94 contagious cases: typhoid fever, 49; scarlet fever, 24; diphtheria, 12; measles, 8, and cerebrospinal meningitis, 1.

Appointment Confirmed.—Dr. Walter R. Brinckerhoff has received official notice of his appointment as director of the United States Government Leprosy Research Hospital, to be located in the leper settlement, Molokai, Hawaii. He is to work under Surgeon-General Wyman and will leave Boston soon to take charge of the erection of the necessary buildings.

Allow Expert Fees.—District Attorney John B. Moran has failed to make the Massachusetts committee on public service believe that the medical examiners in Suffolk County shall not be allowed expert fees for testimony given by them in cases arising out of and connected with autopsies or inquests performed or conducted by them in their official capacity as medical examiners.

Use Much Water.—In a legislative hearing in regard to enlarging the water supply of Springfield it was developed that the city now uses 150 gallons per day per capita, while other cities and towns use much less: Chelsea, 113; Quincy, 101; Malden, 60; Pittsfield, 100; Taunton, 46; Leominster, 60; Natick, 40; Haverhill, 60; Newton, 55; Brookline, 90; New Bedford, 76, and Brockton, 35.

Tuberculosis Exhibit.—The state tuberculosis exhibit, the outgrowth of the recent exhibition in Horticultural Hall, has been completed and is to be on exhibition for one week, beginning February 28, at the Franklin school house, Boston, and then one week at the North Bennet Street industrial school. Thence it will go successively to Lynn, Lowell, Worcester, Springfield, North Adams and Fall River. The cost of maintaining it a week is \$100 beside hall rent.

MISSOURI.

Hospitals Opened.—St. Luke's Hospital, Kansas City, was opened to receive patients February 19. It is hoped within two years to begin the erection of a hospital to cost \$250,000.—The new St. John's Hospital, Springfield, was opened to the public February 22.

Memorial Meeting.—Memorial services for the late Dr. Elisha Hall Gregory were held February 18 in the Y. M. C. A. building, St. Louis. Dr. George Homan, president of the St. Louis Medical Society of Missouri, presided, and the eighteen past presidents of the society were named as honorary pallbearers. The members of the society attended the funeral services in a body.

Personal.—Dr. John H. Duncan, St. Louis, has gone to Europe.—Dr. and Mrs. C. B. Hewitt, Kansas City, left for Cuba, February 14.—Dr. J. H. Simons, St. Louis, is confined to his house with an infected wound of the foot.—Dr. C. R. Woodson, St. Joseph, has been decided not guilty of contempt of court "since he disclaims any purpose of intention of contempt."—Dr. William F. Meyer, St. Louis, has been exonerated, as the coroner has decided that in killing his brother Dr. Meyer acted in self-defense.

NEW YORK.

Osteopaths Fined.—C. E. Rumsey, Watkin, and O. C. Clock, Elmira, were each fined \$50 for illegal practice of medicine.

Fire in Physician's House.—Fire in the residence of Dr. Andrew J. Dick, Watertown, caused damage of about \$600, fully covered by insurance.

Insane Transferred.—One hundred and twenty-five patients have been transferred from the Hudson River State Hospital, Poughkeepsie, to the St. Lawrence State Hospital, Ogdensburg.

Examination for Medical Inspectors.—A civil-service examination was held in Syracuse, February 3, for the position of medical inspector of public schools. There were twenty applicants for the ten positions.

Sentenced to Prison.—Adam Blackborne, a barber of Fairport, charged with practicing medicine without having been legally registered, pleaded guilty and was sentenced to six months in the penitentiary.

Hospital Donations.—The first day of the annual donation to the Rochester City Hospital netted nearly \$11,000 for the institution.—By the will of Albert G. Pickin, New York, \$5,000 is bequeathed to the Hospital Association of the City of Schenectady.—Friends of the City Hospital, Watertown, have subscribed \$3,200 toward the payment of the debt of \$13,000 on the institution.

Associated Physicians Meet.—The Associated Physicians of Long Island held their eighteenth annual meeting in Brooklyn, January 27, at which the following officers were elected: Dr. Elias H. Bartley, Brooklyn, president; Drs. J. Ensor Hutcheson, Rockville Center; H. Beekman Delatour, Brooklyn, and Arthur H. Terry, Patchogue, vice-presidents; Dr. James C. Hancock, Brooklyn, secretary, and Dr. Charles B. Bacon, Brooklyn, treasurer.

Personal.—Dr. Frederick H. Millener, Buffalo, has been appointed surgeon-in-charge of the nose, throat and ear department of the German Hospital Dispensary.—Dr. Sydney P. Rogers, Cohoes, was injured by being thrown from his buggy in a collision, February 4.—Dr. James C. Sharkey has been appointed health officer of Rensselaer, vice Dr. William L. Allen, retired.—Dr. James E. McAllen, Seneca Falls, recently fell while alighting from his buggy and sustained a Colles' fracture.—Dr. George F. Mills has been appointed health commissioner of Oneida.—Dr. George E. Swift has been chosen as health officer of Hudson, vice Dr. Henry W. Johnson, retired.—Dr. John Archibald has assumed the duties of mayor of Cohoes.—Dr. John J. English has resigned as police surgeon of Troy.—Dr. La Salle Archambault, Cohoes, has returned after two years in Europe.—Dr. Frederick W. Parsons, Poughkeepsie, has been appointed second assistant physician of the Hudson River State Hospital, Poughkeepsie, vice Dr. Charles H. Langdon, deceased.—Dr. Clarence E. Carruth has been appointed city physician of Cohoes, vice Dr. Edward M. Bell.—Dr. Martin Cavana, Oneida, has been reappointed surgeon for the New York, Ontario & Western Railroad.—Dr. Edgar H. Douglass, Little Falls, has been appointed surgeon for the Little Falls and Frankfort division of the New York Central Railroad.—Dr. Amos P. Dodge, Oneida, has been reappointed local surgeon of the New York Central Railroad and of the West Shore Railroad.

New York City.

Charter for Postgraduate School.—A limited charter for three years has been granted to the Brooklyn Postgraduate Medical School by the State Board of Regents.

Middleton-Goldsmith Lecture.—The Middleton-Goldsmith lecture of the New York Pathologic Society was given February 23 by Dr. Ludvig Hektoen, Chicago, on "Phagocytosis."

Harvey Society Lecture.—The eleventh lecture in the Harvey Society course will be delivered at the New York Academy of Medicine by Prof. J. Clarence Webster, Chicago, March 3, on "Modern Views Regarding Placentation."

Sued for Alleged Neglect.—Suit has been commenced against Dr. Herman J. Boldt for damages said to have been caused by the defendant allowing "a towel" to remain in the body of the plaintiff for a long period of time after the performance of a laparotomy. The plaintiff claims \$25,000 damages. Dr. Boldt says there is no justification for the suit.

Arraigned and Exonerated.—Dr. John A. Burke, who was arrested January 8 on the charge of complicity in an illegal operation on Mrs. Lillian Kropf, was discharged January 29, fully exonerated.—Dr. Carl F. B. Fuchs, Brooklyn, charged with having performed a criminal operation on Mrs. Anna Hoffmann, Ridgewood, was discharged from custody January 29.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended February 17, 1,674 cases of measles, with 37 deaths; 371 cases of diphtheria, with 62 deaths; 328 cases of tuberculosis, with 176 deaths; 198 cases of scarlet fever, with 11 deaths; 100 cases of varicella, with 1 death; 30 cases of cerebrospinal meningitis, with 21 deaths; 30 cases of typhoid fever, with 10 deaths, and 1 case of smallpox; a total of 2,732 cases, with 318 deaths.

Tuberculosis Exhibit Opened.—Between 2,000 and 3,000 persons visited the traveling tuberculosis exhibit of the committee on the prevention of tuberculosis of the Charity Organization Society, which was opened to the public in the Educational Alliance building on February 20. It will remain open until March 10. Dr. Alfred Meyer delivered a lecture. Stereopticon views were shown illustrating how the roofs of tenement houses could be used as sanatoria.

Brooklyn Wants a Health Commissioner.—The Kings County Medical Society has announced itself as in favor of having a health commissioner instead of an assistant sanitary superintendent. The society contends that the health department can not be administered with satisfaction either to the medical profession or the public because of lack of authority and direct responsibility. An appeal has been made to President Coler requesting him to have a bill proposed providing for the appointment of a health commissioner for this borough.

Interne Anesthetists Organized.—The interne anesthetists of the various Brooklyn hospitals have organized a conference to meet at the various hospitals from time to time and listen to papers, reports of cases, etc. The first meeting was held at Long Island College Hospital, December 19, on invitation of Dr. Adolph F. Erdman. After an informal social half-hour Dr. James T. Gwathmey, Manhattan, demonstrated the use of his new vapor inhaler. The January meeting was held at the Bushwick Hospital on invitation of the consulting anesthetist, Dr. Woolsey.

Gifts to Hospitals.—Isaac Guggenheim has given \$250,000 to the Sydenham Hospital for the erection of a new building, conditioned on the raising of a sufficient endowment by the hospital directors for the maintenance of the institution.—By the will of the late Margaret H. Jones, St. Luke's Hospital, Presbyterian Hospital and the Postgraduate Hospital will each receive at least \$125,000.—Nearly \$20,000 has been paid into the treasury of the Beth-Israel Hospital as a nucleus of the fund for the annual Purim ball, to be held March 14 for the benefit of the poor of the East Side.

Bronx Medical Society.—This society was organized two months ago by about forty physicians of Bronx borough. Dr. Alfred F. Brugman was made president of the society. One of the first subjects for discussion was an amendment to the vaccination bill, now before the legislature, releasing from compulsory vaccination the children of parents who have scruples against vaccination. The society adopted a resolution protesting against the passage of any measure which would allow unvaccinated children in the public school and directed that the members of the legislature from the Bronx borough should be informed of this action.

Pasteurized Milk for City's Wards.—All milk and cream *bought by the charities department is now pasteurized. The department purchases daily about 3,000 quarts of milk for the 6,000 inmates in the city's charitable institutions, and all the milk is pasteurized before its delivery by the contractor. The contract requires that all the milk shall be raised to a temperature of not less than 155 degrees nor more than 167 degrees F. and shall immediately be cooled to a temperature of 45 degrees F. or less. The process is so simple that there is scarcely an appreciable difference in the cost of the milk. The beneficial effects have been chiefly noted in the improved keeping qualities of the institutional supply.

NORTH CAROLINA.

Personal.—Dr. Charles L. Minor, Asheville, was painfully injured in an automobile accident recently.

Hospital Notes.—Pittman Hospital, Tarboro, is being enlarged.—The physicians of Raleigh are actively working for the establishment of a new general hospital in that city.—Mission Hospital, Asheville, has added a new wing, which was formally opened last month.

Sanatorium Company Chartered.—The Crowell Sanatorium Company opened at Charlotte, January 1. The new company has absorbed the Crowell Sanatorium, Charlotte. The officers of the new company are: Dr. S. M. Crowell, president; Dr. I. W. Faison, vice-president; Dr. W. M. Strong, secretary-treasurer, and resident physician.

Preparation for State Meeting.—The Mecklenburg County Society has taken action regarding arrangements for the annual meeting of the Medical Society of the State of North Carolina, in Charlotte, May 29 to 31. Dr. Robert L. Gibbon was chosen chairman of the committee of arrangements, and Drs. R. J. Brevard, John R. Irwin, W. O. Nesbet and E. P. Russell make up the remainder of the committee. The president of the society, Dr. E. C. Register, was also made a member.

PENNSYLVANIA.

Bequest to College.—By the will of the late John Porterfield, Allegheny, \$50,000 is ordered to be paid to the Medical Department of the Western Pennsylvania University, Pittsburg, on the death of the testator's sister.

Entertained Takaki.—The Allegheny County Medical Society entertained Baron Kaichiro Takaki, surgeon general of the

Japanese imperial navy, February 14. A dinner was given at the Hotel Schenley, after which an address was delivered by Baron Takaki, followed by a smoker-reception at the German Club.

Railway Surgeons Meet.—The annual meeting of the Pittsburgh & Lake Erie Railway Surgeons' Association was held at Pittsburgh, February 15. Dr. John D. Milligan, Pittsburgh, was elected president; Dr. Edward M. Hand, Conopolis, was re-elected secretary, and Drs. Loyal W. Wilson, New Castle, and George W. Gallagher, New Haven, were elected vice-presidents.

Hospital Notes.—St. John's General Hospital, Allegheny, is to be enlarged so that it will accommodate at least 60 more patients, at a cost of more than \$25,000.—Forty physicians of Harrisburg have formulated plans for the institution of a private hospital in Harrisburg. Dr. C. A. Rahter was elected chairman, and Dr. C. M. Rickert, secretary, of the organization.

Damages for Physician's Death.—The United States Admiralty Court handed down a verdict of \$25,000 in favor of the widow and children of Dr. J. M. B. Ward of Marcus Hook, against the Steamship Company of Copenhagen. Dr. Ward was killed by falling down the hold of the steamer *Euxinia*, Jan. 21, 1903, while in the discharge of his duties as quarantine physician.

Monongahela Valley Medical Society.—At a meeting held in Monessen, January 25, this society was organized. The membership includes physicians from Washington, Fayette and Westmoreland counties. The following officers were elected: Dr. John W. Gordon, Bellevue, president; Dr. Harry J. Reppman, Charleroi, vice-president; Dr. Joseph W. Hunter, Monessen, secretary; Dr. J. C. Enos, Charleroi, corresponding secretary; Dr. Howard R. Day, Monessen, treasurer, and Drs. George E. Nickels, Bellevue; McKay, Charleroi, and Arthur R. Wilson, Monessen, censors.

Personal.—Dr. George B. Kunkel has been appointed surgeon of the Philadelphia & Reading Railway in Harrisburg.

—Dr. H. E. Zerner has resigned as alderman of New Castle.

—Dr. Isadore J. Weida, Etnaus, has been elected president of the board of health, vice Dr. Martin B. Backenstoe, resigned.

—Dr. Ralph W. Montelius, Mount Carmel, has been appointed surgeon for the Philadelphia & Reading Railway between Port Clinton and Williamsport.

—Dr. J. Marion Vastine, Catawissa, has been appointed division surgeon for the Philadelphia & Reading Railroad.

—Dr. Theodore B. Lashells, Meadville, fell January 31, fracturing his right hip.

—Dr. Charles W. Everhart, Royersford, who has been a patient at the Phoenixville Hospital, became violently insane, January 10, and was removed to the State Hospital for the Insane, Norristown.

—Dr. Charles D. Schaefer, Allentown, has been unanimously elected acting mayor of that city.

—Dr. Jacob Stickle, Williamsport, was recently operated on for a tumor of the left breast.

—Dr. Laurant C. Thomas, Latrobe, has been appointed local surgeon for the Pennsylvania Railroad.

Philadelphia.

Gift to Hospital.—At the annual meeting of the Methodist Episcopal Hospital, February 9, it was announced that \$2,000 had been subscribed for a new ward.

Diphtheria Closes School.—On account of the discovery of two cases of diphtheria in the Meredith school, February 23, the school was ordered closed and fumigated.

Illegal Practitioner Sentenced.—A woman who advertised as "Dr. Roberts, female specialist," was tried in the Criminal Court, January 30, charged with abortion, was found guilty and sentenced to three years in the Eastern penitentiary.

Medical Inspection.—The reports, made February 23, of medical inspections during January, show that in 315 public schools 6,454 visits were made. Treatment was recommended in 4,483 cases, and 1,561 children were excluded from attendance. Of these 691 were boys and 870 girls. The number of pupils readmitted was 802. Vaccinations were made in 277 instances.

Alumni at Banquet.—The dinner given by the alumni of the University of Pennsylvania Medical School, February 21, was attended by more than 260 persons. The toastmaster was Dr. George E. de Schweinitz. Among the speakers were Provost Harrison on "The University of Pennsylvania"; Dr. George A. Piersol, "The Medical Faculty of the University"; Dr. W. W. Keen, "Sister Medical Schools"; Dr. George Guthrie, "Pennsylvania Alumni"; Dr. John A. Witherspoon, "The Alumni from Afar"; Dr. Daniel M. Hoyt, "The Junior Alumni"; and Dr. Sylvester J. Dechan.

Surgeon-General Takaki in Philadelphia.—Surgeon-General Kanekiro Takaki of the Japanese army and navy spent the

week of February 19 to 24 in this city. He received the degree of bachelor of science at the "University Day" exercises, February 22. February 23 he addressed the students of the university on "Sanitation in the Army and Navy", and on February 24 he addressed the students of Jefferson Medical College in the amphitheater of the college on "The Medical College Conduct of the Russo-Japanese War", and stated that the Japanese had received their surgery from the teaching of Dr. Gross.

Prevalence of Measles.—The epidemic of measles shows no sign of abatement, according to reports of the bureau of health. Since January 1 there have been 4,921 cases reported, but large as the number is, it does not include all sufferers, for in many instances medical advice is not sought, and in such cases returns are not made to the health authorities. In the six days which ended at noon February 23, there were 649 cases reported, and it is believed that the number for the week will exceed that of any week since the disease became prevalent. In the first week of the present year 353 cases of measles were reported, and the disease has steadily progressed ever since.

Much Typhoid.—The prevalence of typhoid fever has reached the highest mark in about three years. Dr. A. C. Abbott emphasizes the importance of filtration and has compiled the following figures: In the Queen Lane district with unfiltered water there have been during the week 63 cases of typhoid, among a population of 293,210 people, or 21 cases to every 1,000 inhabitants. In the Wentz farm reservoir district, which is supplied with unfiltered Delaware water, there have been 87 cases among 176,712 people, or 49 cases for every 100,000 people. In the filtered water district of West Philadelphia, with 42,000 population, there was not one case of typhoid fever. There have been but three cases since January 1. In the Twenty-first and Twenty-second wards, which are supplied with filtered water, and which include 113,000 people, there were but seven cases. The records of the health bureau show that there are 2,300 cases of typhoid under treatment in the city.

Personal.—Drs. Charles Browne and E. J. Porteous left February 23 for an extended tour of the Pacific Coast.—Dr. Rebecca Fleisher, who has been ill for many weeks, has returned to her home in Philadelphia.—Dr. and Mrs. L. Webster Fox have returned after a month spent in Port Antonio, Jamaica.—D. Richard H. Harte, surgeon to the Pennsylvania Hospital, has been elected a member of the city council.—Dr. E. G. Whinna, who has been in failing health, has left the city to recuperate.—Dr. Arthur R. Cobb, while in a state of despondency, jumped from the second-story window of a cottage in Cape May, and sustained general contusions and fractures of both arms. He is convalescing in the Hahnemann Hospital.—Dr. Joseph P. Tunis entertained the Biological Club at dinner at his residence, February 23.—Dr. Robert Abbe, New York City, will address the W. W. Keen Surgical Society of Jefferson Medical College in the amphitheater, March 17, at 8 o'clock, and will be given a reception at the Bellevue-Stratford after the address.

GENERAL.

Cholera in Manila.—Dr. Heiser, chief quarantine officer, reports that the cholera situation in Manila remains about the same. A few sporadic cases have occurred in the city, but in almost every instance the infection could be traced to the outside. He states that cholera has practically described an entire circle of a radius of 25 miles around the city of Manila. In view of the very few cases of cholera in Manila and their sporadic character, it was deemed advisable still further to modify the outgoing interisland quarantine which was placed on vessels.

Health Report of the Isthmus for January.—Colonel Gorgas reports that the health of the Isthmus continues excellent. In January there were 22,000 employes on the rolls and the daily sick list was about 503; this gives an average sick rate of 22 per mille. Such loss from sickness, Colonel Gorgas states, compares very favorably with that of any body of men working anywhere. The daily sick rate is an accurate measure of the loss to the commission from illness. It does not necessarily mean a low death rate. During January the number of deaths from pneumonia was large. Among the employes there were 74 deaths, and of those 26 were from pneumonia. Most of these were among negroes. Only one American died from this disease. The report states that surprise has been expressed that there should still be breeding places of mosquitoes on the Isthmus, but calls attention to the fact that when the Americans left Havana after a most successful yellow-fever cam-

paign, the last inspection showed something like 300 breeding places in that city. Mosquito work on the Isthmus has reduced the number of such places to the minimum. There have been no new cases of yellow fever since the last report.

FOREIGN.

Little Plague in Japan.—Acting Assistant Surgeon Fowler of the United States Public Health and Marine-Hospital Service reports that after a cessation of thirteen days a case of plague occurred in Kobe.

Frontier Practice.—A number of physicians residing on either side of the boundary between France and Belgium met recently at Paris to draw up a satisfactory code of ethics for their guidance in frontier practice.

Prizes for Milk Supply and Housing of the Lower Classes.—An international exposition of hygiene is to open at Milan in May and to continue through the summer. To celebrate the occasion the king of Italy has offered a prize of \$1,000 for the best well-tested arrangement for supplying cities with pure milk. A second prize of \$2,000 is also offered for the best type of dwelling house for the masses adapted to the climate of southern Italy.

Proposed Changes in Examinations at University of Edinburgh.—Changes in the medical course at the University of Edinburgh are proposed, to enable students to appear for examination in the earlier subjects of the curriculum at an earlier period than has been the case. This is to give more time for the final subjects. The *Lancet* states that it would still further help if the university court had applied for powers to prevent, when it was thought desirable, students attending classes of an advanced division when they had failed in the subjects of an earlier division. Meanwhile the university has no such power, the result being that the work of classes is sometimes hindered by a number of students attending who are not in a position to benefit by the class and who act as a drag on the others.

Von Noorden in Vienna.—As already mentioned, Carl H. von Noorden, at present in Frankfurt, has accepted the summons to the chair of internal medicine left vacant by the death of Nothnagel at Vienna. The Vienna authorities agreed to all his terms, promising the completion of the new model clinic in two years and the erection of a new laboratory for him, with extensive remodeling of the present clinic at once. He is to bring his assistant with him, and the latter is to have a professorship of medical chemistry created for him. Von Noorden has never been a clinical teacher, and it will be a great change for the specialist in the pathology of the metabolism to attempt to fill the chair of Nothnagel and Skoda, distinguished for their universality and skill as teachers. A Vienna correspondent of the *Deutsche med. Wochft.* refers casually to the danger of von Noorden's making the clinic one for metabolic affections exclusively, but the editors comment that von Noorden's record should banish this fear. He made many friends in this country during his recent visit here to lecture. One of his addresses then on some of the problems of metabolism was published in *THE JOURNAL* at the time, Oct. 28, 1905, as our readers will remember. He is comparatively a young man, not quite 48.

Announcements by von Behring in Regard to "Immune Milk Supply" in Prevention of Tuberculosis.—On February 8 Professor von Behring lectured at Berlin on this topic before the German Agricultural Council. He announced that he had lately perfected an inexpensive method for producing and keeping the immunizing properties of the tubercle bacilli for injection while at the same time destroying the vitality of the tubercle bacilli. He calls the fluid thus obtained "tuberculase" and expressed hopes that it was destined to prove an effectual aid in the stamping out of tuberculosis among men and animals. He added that he had not been experimenting with tuberculous cattle in a condition even remotely approximating that of a consumptive human being, "and consequently," he continued, "I have no scientific basis for the assumption that tuberculase may prove an effectual remedy for human pulmonary tuberculosis. I did not speak at Paris of a remedy for consumption in the sense of a cure for already established tuberculous destruction of lung tissue. I spoke only of a remedy to prevent consumption in young persons by acting on an already existing tuberculous focus in such a way that its self-healing may proceed with the natural healing powers of the organism, undisturbed by renewed tuberculous infection." He aims to render children immune to tuberculosis by feeding them on milk from cows immunized with tuberculase. The children will then grow up refractory to tuberculous infection.

Pharmacology

Indorsements of Campaign Against Nostrums.

Dr. C. W. Dulles, Philadelphia, writes:

"As one who has followed the career of *THE JOURNAL* since its birth, I wish to express the gratification with which I have seen it attain a degree of scientific excellence that makes it the equal (*me judice*) of any medical periodical in the world. At the same time, I may express the pleasure it gives me to find it fully enlisted in the cause of intelligence and decency in the application of medicinal agents to the treatment of disease and warring against the credulity of the medical profession and the unscrupulousness of the manufacturers of many proprietary medicines. Having for years, in private and in public, borne testimony against these two disgraces of our time, it is most encouraging to see so strong a champion of the good cause enter the lists. May your efforts be as successful as your object is laudable."

Dr. Victor H. Dye, Sistersville, W. Va., writes:

"At this time I take pleasure in heartily indorsing everything that *THE JOURNAL* has done and is doing in the crusade against 'patent' and proprietary medicine vendors. It is exactly portraying my sentiments regarding that curse of the American people."

Dr. W. C. Herman, Cincinnati, writes:

"I take great pleasure in sending you my congratulations for the great work *THE JOURNAL* is doing for the physician and for the laity as well in its exposure of the nostrum evil. This work comes a little bit late, it is true, but 'everything comes to him who waits' good and bad."

Dr. Theodore Zbinden, Toledo, Ohio, writes:

"I wish to express my approval of all the undertakings of the American Medical Association, and wish to say that I am especially pleased with the work of the Council on Pharmacy and Chemistry. I am looking into the matter of patent-medicine advertisements published in some religious journals and hope to accomplish something in that way. Be assured of my hearty co-operation with the officials of the American Medical Association in all their good work."

At the regular meeting of the Muscogee County (Ga.) Medical Association, February 7, the society unanimously indorsed the resolutions adopted by the Suffolk District Section of the Massachusetts Medical Society, approving the action of the American Medical Association in establishing the Council on Pharmacy and Chemistry, and commending the educational campaign now being conducted by *Collier's Weekly* and the *Ladies' Home Journal* in exposing the business methods of the Proprietary Association of America.

Similar resolutions were adopted by the Androscoggin County (Maine) Medical Association, the Logan County (Ohio) Medical Society, the Delaware County (Ohio) Medical Society, the Utica (N. Y.) Medical Library Association, the Champaign County (Ill.) Medical Society, the Fayette County (Ky.) Medical Society, the Lenawee County (Mich.) Medical Society, the Chattanooga and Hamilton County (Tenn.) Medical Society and the Calhoun County (Ala.) Medical Society. Each member of the last named society was also requested to write a personal letter of commendation to the editors of *THE JOURNAL* of the American Medical Association, the *Ladies' Home Journal* and *Collier's Weekly*.

A Physician's Experience with Acetanilid.

The physicians of Racine, Wis., recently gave a banquet for the members of a medical society in an adjoining town. The afternoon preceding the banquet one of the visiting physicians took several powders of acetanilid and caffeine, and immediately before the banquet—about 9 p. m.—he took one or two more. In all he took about 18 grains of acetanilid. As the banquet progressed he gradually became cyanotic, but seemed normal otherwise until collapse occurred. The heart action was very weak, and there were nausea, vomiting, diarrhea, and intense cyanosis. He was at once put to bed in the hotel in which the banquet was held, and several physicians worked over him all night. Powerful stimulants were applied, but he was not con-

sidered out of danger till the next morning; and even then there was still some cyanosis. He was not able to go home till after thirty-six hours had elapsed.

Poisoning from Electric Headache Powders: Recovery.

Dr. A. P. Merrill, Pittsfield, Mass., reports January 23, that he was called to see a woman about 27 years old. She was suffering with considerable pain in the stomach and said she "felt cold and numb all over," and was listless and could hardly be roused to answer questions. She had had a bad

irregular, and for over an hour the radial pulse could not be felt. He decided that she was suffering from acetanilid poisoning and treated her accordingly, giving stimulants and applying external heat. The woman was ill for a number of days, and for forty-eight hours she could hardly keep awake. During that time the extremities were cold and more or less numb. Her digestion was much upset, and Dr. Merrill states that she reached normal only after three weeks or more. The powders taken by this patient were labeled "Electric Headache Powders" and were bought at a local drug store.

THE SLAUGHTER OF THE INNOCENTS.

Kopp's Baby's Friend.

In THE JOURNAL, Nov. 25, 1905, page 1678, there appeared a letter from an Omaha physician reporting the death of a child following administration of four drops of Kopp's Baby's Friend.

In the same issue we published the report of an analysis of this preparation. According to this analysis, Kopp's Baby's Friend contains in 100 c.c., 0.0719 gm. morphin sulphate; approximately one-third of a grain in one fluid ounce.

On January 6, 1906, page 54, we noted a report of the death, in Baltimore, of a child aged three and one-half months following administration of this preparation. As will be remembered, in reporting this case we quoted from a published statement of the state's attorney, in which he emphasized the "urgent need of a law prohibiting the sale of any patent or proprietary medicine containing any deadly drug unless the same is labeled 'Poison'."

On Feb. 10, 1906, page 447, we printed a letter from the physician who reported the first-mentioned case, notifying us of a case of poisoning from the use of this "remedy."

We have now to record two other deaths which, it is alleged, have followed the administration of Kopp's Baby's Friend. In Utica, N. Y., twin children, a boy and a girl, aged five weeks, were given the preparation in

the evening; the boy is said to have been given four drops and the girl two. In the morning each were given another dose. Both children died that day, the boy at 2:30, the girl at 7:45 p. m.

"The said Adam and Eve Gnad, otherwise known as Zariah, died on the 25th day of January, 1906; the boy died at 2:30 p. m. and the girl died at 7:45 p. m. at No. 25 Kossuth

headache for three days and on that evening had taken a headache powder, and as she felt worse after it she took another in twenty minutes, as the directions were to repeat if necessary. In about fifteen minutes after taking the second powder she felt numb, cold, very tired and sleepy, and had difficulty in speaking. There was absolutely no feeling in the extremities or over two hours. Dr. Merrill says that when he saw her, about thirty-five minutes after she had taken the second powder, she had considerable pain in the stomach, the pupils were unequally dilated, the heart action was very weak and

Avenue, in the City of Utica, County of Oneida, N. Y., of morphin poisoning. The evidence shows that Stanislaus Gnad, the father of the infants, had administered to them a dose of a mixture, which is known as 'Kopp's Baby's Friend,' on the night of January 24, 1906, and that the infants (whose age was one month and one day) died on the following day. Now after investigating the circumstances attending such deaths and obtaining the report of Drs. James C. Hunt and H. F. Preston, who made an autopsy on the bodies of the deceased infants and also the report of Drs. Nelson and Smith, chemists, who made an examination of the

stomachs and stomachs' contents of the dead infants, and also an examination of a portion of the mixture above mentioned, showing that it contained morphin, I find and decide that the said Adam and Eve Gnad, otherwise called Zariah, died from an overdose of 'Kopp's Baby's Friend' which was administered by their father, but without criminal intent."

Thus without any particular effort on our part there has come to our attention within three months evidence of four deaths and one case of poisoning from this "soothing" medicine for infants. The question is, how many cases have occurred to which our attention has not been called, or which have not been reported? Is it possible that we have accidentally heard of all of all such cases? Is it not more likely that there are hundreds that there are never even reported to

the coroner? Of course, it would be wrong to check this kind of business by legislation; vested interests are at stake, especially vested interests of newspapers. Kopp's Baby's Friend is only a sample; it is no worse than hundreds of others that are allowed to be sold for the aggrandizement of the few, but to the injury and death of the many.

Poisoning from Mrs. Winslow's Soothing Syrup.

Dr. G. M. Cummins, Hamilton, Ohio, reports a case of poisoning from Mrs. Winslow's Soothing Syrup, which occurred in his practice.

Oct. 24, 1905, he was called to see a male twin child, aged 3½ months, suffering from cholera infantum. He ordered a restricted diet and prescribed as follows:

| | | |
|--|--------------|------|
| R. Bismuth subnitrate |gr. xii | 75 |
| Pepsini (pure) |gr. xl | 2 60 |
| Aque q. s. ad |ss | 45 |
| Sig.: Shake and give 1 teaspoonful every hour. | | |



City Clerk,

Knoxville, Tenn.

Dear Sir:

Would you for a compensation furnish me with a monthly report of the births occurring in your city? What I desire is the fathers' names and addresses. In case of illegitimates, the mothers'. I have made arrangements with the City Clerk in many cities for the furnishing of this report and would like very much to have that of your city.

Kindly let me hear from you and oblige

Yours very truly,

MRS. J. A. KOPP.

CEO

[It is purely a coincidence that we are able to reproduce the above letter at such an appropriate time. It was sent by Dr. Cochrane, secretary of the Board of Health of Knoxville, and was received by us February 24, in the same mail that brought a certified copy of the coroner's verdict on the Utica poisoning cases.]

At 12 o'clock that night he was called and told the baby could not be aroused, that it had been sleeping for an hour or more and had almost stopped breathing. A neighbor had suggested giving the child a dose of Mrs. Winslow's Soothing Syrup and it had been given two doses of one-half teaspoonful each, one-half hour apart. On examination Dr. Cummins found the pupils contracted to the size of a pinhead, pulse very slow and respirations four a minute. He diagnosed opium poisoning. Dr. Cook was called in consultation, and after four hours' work they succeeded in bringing the patient around all right. Dr. Cummins states that he has no doubt that this was a case of opium poisoning from the morphin contained in the soothing syrup.

Chamberlain's Colic Remedy Satisfactory to a Morphin Habitue.

A correspondent sends us a newspaper containing the following item:

Judge Smith sentenced Miss Ella Clark of the city (Mason City), to Mt. Pleasant asylum to-day (Jan. 29, 1906). She was proven to be addicted to the use of morphin to the extent that her health has been undermined and she is now almost a physical wreck and is confined to her bed. In her desire for the drug she brought large quantities of Chamberlain's colic remedy, which it is said she has been using for years.

Probinin.

New York, Feb. 21, 1906.

To the Editor:—The article on "The Pharmacopeia and the Physician" in THE JOURNAL, February 10, contains, under the caption, "Laxative Sweet Substances," a reference to and a footnote on probinin. We beg leave to state that probinin is not a "laxative sweet substance"; the phenolphthalein it contains is merely an adjuvant.

The note makes no mention of the fact that probinin is primarily a biliary disinfectant, the salicylic acid it contains being excreted by the epithelia of the biliary passages. Among many others, Dr. Kuhn (*Zeitschr. f. kl. Med.*, vol. lxiii) reports in detail extensive experiments which show that salicylic acid is the best biliary disinfectant.

The assertion that salicylic acid and acid sodium oleate are the most powerful chologogues is perfectly "in accord with the generally accepted opinion of therapeutists." Thus Professor Stiller (*Wien. med. Woch.*, I, 1905) writes that according to Mandelstamm's researches salicylic acid is the most powerful chologogue. While the bile salts produce a thick bile, salicylic acid causes an abundant, thin secretion, which is deficient in solid constituents and is well adapted to disintegrate and mobilize biliary calculi. Professor Rosenheim (*Deut. Med. Woch.*, Oct. 2, 1905) reports similarly. Sir James Barr (*British Medical Journal*, Jan. 20, 1906, p. 126) refers to the chologogue action of the salicylates. Professor Ewald (see translation in *Brooklyn Med. Jour.*, Oct., 1905) says that after acute attacks of inflammation or colic, chologogue remedies are indicated, and he prefers bile salts, acid sodium oleate, sodium salicylate, etc.

Probinin is "difficult to prepare" because acid sodium oleate is an oily substance, disagreeable to handle, and it would give the pharmacist much trouble to incorporate it properly into a pill with the other ingredients. Certainly the constitution of the pills would vary if the pharmacists were to prepare them, and they would be more expensive. Besides, acid sodium oleate is not kept in stock by druggists, being a special preparation of sodium oleate used by the manufacturers.

We are, of course, in heartiest sympathy with THE JOURNAL's work for ethical and scientific therapeutics, and hence regret all the more the derogatory remarks made on probinin, which are doubtless due to an insufficient acquaintance with the remedy.

SCHERING & GLATZ.

[The contention that one of its ingredients is rarely found in stock and that it is disagreeable to handle is in part true, but we repeat that probinin can be prepared by any competent American pharmacist. We admit, however, that an article like probinin is more likely to be satisfactory if prepared by a reliable and well-equipped manufacturing pharmaceutical house, such as Schering & Glatz represent, than by the average pharmacist.—Ed.]

Correspondence

Interstate Reciprocity.

CHICAGO, Feb. 24, 1906.

To the Editor:—In reply to the criticisms of my article on "Interstate Reciprocity," by Dr. B. D. Harrison, secretary of the Michigan State Board of Registration in Medicine, I beg leave to submit the following:

I desire at the outset to state that my article incorporated an educational plan which I proposed as a feasible working scheme and for which neither the Illinois State Board of Health nor the Council on Medical Education of the American Medical Association, with which I have the honor to be connected, are to be held responsible, as the article represents simply my own personal views. I desire to thank Dr. Harrison for calling attention to the words "medical boards" in the sixth paragraph and for the substitution of the word "societies" therefor.

I regret very much that Dr. Harrison seems to have utterly failed to grasp the fundamental ideas which I tried to convey, namely, that the American Medical Association is desirous of assisting the examining boards, and that the plan proposed is not simply a scheme of reciprocity, but a proposed plan of education which, if successfully carried out, will serve as a rational foundation on which reciprocity will naturally rest.

I attempted to anticipate and prevent any criticism of this kind by stating explicitly, at the outset, that "everything relating to the whole subject of medical education belongs to the state." And, again, "The examining and licensing board in each state is the only body authorized to determine the conditions or terms under which physicians are licensed in the state." In order to emphasize still further the fact that the authority of the state is supreme, after outlining the plan of a standard curriculum, in the preparation of which I distinctly state that the leading educators "and members of the examining boards are to unite," I again say, "To establish reciprocity it is only necessary for the states to adopt the standards of the Council on Medical Education." Under the circumstances I see no occasion for the use of such expressions as "usurpation of the authority of the state." Does this look like usurpation of power or authority? Does this imply any intention on the part of the council to assume any of the prerogatives of any of the boards? Does this carry the implication that the medical boards are not "capable of fulfilling the duties and responsibilities with which they are charged by the state"? Does this bear out his accusation that the committee "is entering the field entirely without the range of the committee's power and status"?

Dr. Harrison accuses me of "having omitted in his statement of facts a large percentage of the most material facts connected with and necessary to the success of interstate reciprocity," and yet he adds only two more, namely, the statement that no one school of practice has the authority to settle the question of reciprocity, and that all proper and effective medical laws have been enacted by the co-operation of the several legalized schools of practice. These two statements are true, but wholly irrelevant as far as the present discussion is concerned. We are, therefore, driven to the conclusion either that Dr. Harrison thinks these two points the "most material" in solving the problem, or else that he knows what the most material facts are but fails to state them. Dr. Harrison again says: "It is impossible for Dr. Webster, or, for that matter, any one else, or any association of persons except a state legislature, to confer on the Council of Medical Education of the American Medical Association, of which he is secretary, the authority which he truly states is solely vested in state boards." Once more I must protest that this, although true, is irrelevant. The council does not seek this authority, has no use for it, has not asked for it, has not assumed it and has not hinted that it intends so to do.

Dr. Harrison again says: "These medical boards are capable of fulfilling the duties and responsibilities with which they are charged by the state, and do not require unauthorized persons or associations to measure their authority or to perform their legal duties." This is very gratifying information, notwithstanding its insinuations. What the "capabilities" of the various examining boards are I do not pretend to say. It is my

humble opinion, however, that the boards are not all dominated by men who have given as much serious thought to this subject as has Dr. Harrison, and they have not all done such good work. I am further of the opinion that these boards have not done all they should or could have done and that there are many problems yet unsolved; there is yet much want of harmony of thought and action and purpose; there are too many men going around with chips on their shoulders, fearing some one is going to "usurp" something and afraid of honest, fearless discussion, jealous of every plan not suggested by themselves. If the profession is wholly satisfied with the "capabilities" of the various boards, why all this discontent in the ranks?

Dr. Harrison "diffidently" begs leave to inform me that some four years ago a confederation of state medical boards was founded, and that "this confederation has succeeded in establishing practical reciprocity with some twenty-one states, including Dr. Webster's own state, Illinois. It has also adopted an itemized standard of preliminary and medical education, which standard has also been adopted and is now being enforced by the Association of American Medical Colleges."

I beg leave to inform Dr. Harrison, without any diffidence whatever, that the National Confederation of State Medical Licensing Boards was founded about ten years earlier than the American Confederation; that the former was the first organization of its kind in the United States to adopt a standard curriculum; that said standard was adopted at New Orleans, May 4, 1903, and modified and again adopted at Atlantic City, June, 1904; that it was proposed by myself, as chairman of the committee on curriculum, that it was modified the next year by me, and that it was substantially this standard curriculum which was adopted without any important modification by the Association of American Medical Colleges, April 10, 1905, and by the American Confederation, April 27, 1905.

In this connection I beg leave to quote a part of a personal letter from Dr. G. M. Kober, of Washington, D. C., chairman of curriculum committee of Association of American Medical Colleges, dated May 15, 1905, referring to the value of a standard curricula and their adoption by American Confederation and by the Association of American Medical Colleges, in which he says: "In this connection I desire to place myself on record in saying that whatever has been accomplished in this direction during the past year is entirely due to the splendid work which you have performed in this field for over five years, and no one at all familiar with your painstaking tabulations and reports can fail to appreciate the magnitude and immense value of your work, without which my own labors and those of the committee of the Association of American Medical Colleges would have been impossible."

The credit of having first adopted a standard curriculum does not belong to the American Confederation, but to the National Confederation. If these organizations, including Dr. Harrison's confederation, were so ready to adopt a standard uniform curriculum—more or less arbitrary and imperfect though it was, constructed by myself alone, without any legislative authority, without any co-operation of the schools—how much more likely will they and the colleges and examining boards be to adopt a standard if constructed in accordance with the proposed plan?

I beg leave further to inform Dr. Harrison that the Illinois State Board of Health was the first in the Union to offer to reciprocate, and that its first reciprocity resolution was passed Oct. 10, 1899, and it was reciprocating before the American Confederation was born.

This "seventh" in regard to the three schools of practice, and "that no one school, however preponderating (?) its membership, has the authority to settle such a vital question as reciprocity," is true, but irrelevant. If I even remotely suggested such a thing, I am still unaware of the fact. In my plan for a committee on entrance requirements and on standard curriculum it is proposed that the state examining boards be represented, and there is not one word which, even by implication, excludes any school of practice from serving on such committees.

But suppose the committees are made up wholly from the regular school. Let us inquire in what important respects the education of a homeopath or eclectic differs from a regular. All three attend seven years at the grammar school; all three attend the same high school for four years, pursuing the same

studies; all three obtain an arts degree after three or four years of study; all three attend medical colleges in which twenty out of the twenty-three subjects in the curriculum are studied from the same textbooks. In eighteen or nineteen years of study and preparation, a paltry few hundred hours of instruction in materia medica and therapeutics, in which the teaching differs. Would not such eclectics and homeopaths be willing to adopt such a general educational plan if its value, fairness and desirability were demonstrated to them, even though they had no part in its creation? Must one take an active part in the writing of the Bible before he can subscribe to its teaching?

I wish to say, in conclusion, that there is no desire or intention on the part of the Council on Medical Education of the American Medical Association to usurp any of the functions or prerogatives or powers of the examining boards. There is, however, a strong desire to assist these boards and organizations in improving and elevating the standards of entrance requirements and of medical education in every way possible, and to promote harmony and secure intelligent co-operation, and, coupled with this, the confident expectation that interstate reciprocity will follow naturally and legitimately. GEORGE W. WEBSTER,

Organization in Oregon—Further Discussion.

PORTLAND, ORE., Feb. 10, 1906.

To the Editor:—Obedient to the call of its president, the City and County Medical Society of Portland, Ore., convened Jan. 3, 1906, to take action on a letter written by Dr. McCormack to THE JOURNAL of the American Medical Association under the caption, "Oregon Practically an Unorganized State," and also on an editorial which appeared in the same issue of THE JOURNAL based on the letter in question.

The meeting of the society was the largest and most representative in its history, and the discussion which took place was general and of the most animated character. The consensus of thought at the meeting was unanimous and the opinion prevailed that Dr. McCormack by his letter to THE JOURNAL and THE JOURNAL by its editorial did grievous wrong to the profession of Oregon and to its organized societies by publishing the aforesaid letter and editorial and circulating them broadcast, to the detriment of the fair name and credit of the profession of the State of Oregon—a profession, forsooth, which demonstrated beyond all question and cavil its title to being united and well organized, by giving to the American Medical Association one of the most successful sessions that it has ever held.

It is recalled that Dr. McCormack delivered an address to the City and County Medical Society on "Organization," and that at no part of his discourse was there even as much as a hint dropped that his mind harbored such painful impressions concerning the profession of the state and the evils which were corroding and corrupting it. On the contrary, his words carried with them warmth and comfort and made every one feel that he himself felt that his work of organization in the state was satisfactory and sufficient.

Dr. McCormack is reminded that in the discussion which followed his excellent and most interesting address at the meeting referred to there was a very frank avowal of those minor dissensions and differences which exist in all societies, but which found no deeper root in the Portland Society and the profession at large of the State of Oregon than elsewhere, and which were nothing more than surface manifestations of antagonisms which are normal in the modern, strenuous, competitive life.

The City and County Medical Society of Portland, for itself and for the profession of the State of Oregon, resents the charges made in Dr. McCormack's letter and in the editorial columns of THE JOURNAL of the American Medical Association, and characterizes them as unjust and unwarranted.

The society resents and denies the charge that a factional spirit exists obnoxiously in the society that is responsible for the demoralization of the profession throughout the state, and on behalf of its own membership denies the charge that it is divided by factions and that factional spirit is so rife that the society consumes its energies in its internal discords, thereby

nullifying useful effort and hindering all progress, and in answer thereto affirms that the record will show to the unprejudiced investigator that the society has not fallen far short from fulfilling its duties and obligations to the public, to the society and to the profession in all the varied relations that interact between them.

The society resents the charge and denies the truth of the allegation that the most influential members of the profession are outside of the society, and in answer thereto it states that the best elements of the profession are within the society; that the society is actuated by a broad and liberal spirit and has always evinced a readiness and willingness to welcome within its ranks all reputable professional men and women, that it has blackballed none but those who were proved unworthy of being enrolled in its membership on account of flagrant acts of unprofessional conduct.

On behalf of the regular practitioners of the State of Oregon the society resents and characterizes the statement as misleading, mischievous and false that "the average grade of the profession is low and the spirit non-progressive," and in answer thereto respectfully affirms that the great majority (fully 80 per cent.) of the professional men in the State of Oregon now in active practice are graduates of medical schools in excellent standing from the eastern and southern states and from the middle west, and that the charge carries with it a reflection on these schools and the imputation that their graduates and alumni are not worthy or well qualified, and in further answer thereto it is affirmed that it is the progressive spirit which prompts men in all stations in life and all callings to go far and for their chosen spheres of work—that the spirit of the west stands for progress and forever proclaims enterprise.

In behalf of the district and county societies of Oregon, which have not escaped Dr. McCormack's denunciation, the Portland Society avers at this time nothing, inasmuch as Dr. McCormack has so recently visited them, and is, therefore, presumably the better qualified to judge. But in defense of those pioneers of the profession who are striving, under great disadvantages, with limited facilities for communication, to set afoot the intricate and difficult work of organization, it reserves the right to challenge the wisdom of administering a word of rebuke where a timely word of encouragement was most needed.

In defense of the medical schools of the State of Oregon, which are charged with imparting an indifferent standard of medical education, the society has carefully noted Dr. Joseph's letter to THE JOURNAL of the American Medical Association in its issue of Jan. 13, 1906, and, approving its tenor and spirit, commends it to all those who desire to learn the truth regarding the status of medical education in the State of Oregon, and in this connection the society begs leave to say that Dr. Joseph, who has been the dean of the faculty of the Medical Department of the Oregon State University for nearly twenty years, has devoted his best thought and efforts in furtherance of higher standards, and in the prosecution of his work he has enjoyed the undivided support of his colleagues in the faculty, most of whom, being graduates of the best eastern schools, with subsequent European training, are, therefore, pledged to the principle of higher education, and the same may be said regarding the Medical Department of the Willamette University at Salem.

The society has not at its disposal at this time a transcript of the records of the State Board of Medical Examiners, but it believes that the board is striving earnestly to fulfill its functions and to execute the law. The society believes that in its own defense the State Board of Medical Examiners can refute the charges preferred against it by Dr. McCormack that its low standards of requirements have made the State of Oregon the dumping ground for low-grade men who have failed to pass their examinations in neighboring or even distant states. The law is admitted to be defective, but it was the best that could be enacted at the time, and it marked a great forward step, which the society believes will soon be followed by another and greater.

In answer to the charge that the professional fees in the State of Oregon are based on a low standard, the question can be easily solved by reference to the City and County Medical Society fee schedule, which will convince the most skeptical

that, while the schedule may be low in spots, the average is higher—infinity higher—than the average fees in eastern states and the middle west, and will compare very closely with the higher schedules of California and Washington.

The society, acknowledging no disposition on its part to defend the baseness of those who confessed to Dr. McCormack a willingness to debauch their profession and to reduce it with all its glorious traditions to the level of a paltry trade, admits the existence of such evils as Dr. McCormack refers to as "commercialism, division of fees, lodge and other forms of contract practice and kindred evils," but it makes an emphatic denial to the charges that these evils are more pronounced and widespread in the State of Oregon than elsewhere, and Dr. McCormack is respectfully informed that these evils were unheard of and unknown in the State of Oregon until a few short years ago; that the origin of this epidemic or pandemic disorder has been traced to the east and south and middle west; that it has crept slowly to the west, where it has found only limited and partial lodgment, and, furthermore, that the devotees of this nefarious traffic are now known, marked and doomed to the obliquity that awaits them.

Finally, the City and County Medical Society of Portland, for the profession which it represents and for itself, confessing frankly its shortcomings and imperfections and admitting the existence of faults and flaws in its organization, for which at all times it respectfully solicits the aid and co-operation of the parent organization and the wise counsels of its accredited representatives, always, however, in respectful form and with due regard to the amenities of polite life, exercises at this time its right to challenge both Dr. McCormack, who is counted an accredited representative of the American Medical Association, and THE JOURNAL of the American Medical Association to establish proofs of the charges and allegation, all of which are herein and hereby categorically denied.

Always mindful of the splendid service that THE JOURNAL of the American Medical Association has rendered and is rendering the medical profession, and its courteous recognition of the efforts of the profession of Oregon at the last session of the American Medical Association, and mindful, also, of the conspicuous service which Dr. McCormack has rendered the profession as missionary in the work of organization and in the interest of higher standards, both in ethics and practice, we remain, for the City and County Medical Society of Portland,

HENRY WALDO COE,
President City and County Medical Society.

GEORGE F. WILSON,
President Oregon State Medical Society.

WALTER E. CAREL,

Ex-President Oregon State Board of Medical Examiners.

KENNETH A. J. MACKENZIE,

Second Vice-President American Medical Association.

P. S.—On account of the unavoidable absence of members of the committee from the state, the transmission of the letter was delayed for a considerable time.

DR. MCCORMACK'S COMMENTS.

To the Editor:—Reading between the lines of the committee's communication, as was the case with Dr. Joseph's letter as to educational matters, there is such constant admission of the discord, commercialism and other evils indicated by me that, but for the repeated declaration that what I had said was "misleading, mischievous and false," and the reiterated challenge that both THE JOURNAL and myself "make good" in the matter, any further comment from me would be unnecessary. As it is, I take up the matter again very reluctantly, embarrassed by the abundance of the corroborative testimony which has come to my hands without seeking, by the seeming harshness of some of the expressions quoted, for which I am not responsible, and still more by the fear of again being misunderstood by leaders so long oversensitive with each other that the most kindly expressed and best intended criticisms were made a new occasion of discord, instead of promoting harmony.

I have before me the published proceedings of the meeting at which this committee was appointed. It was held to consider my report, but the factions went so far afield in protracted and angry crimination and recrimination over matters almost en-

tirely foreign to it as to keep the presiding officer busy preserving order and make what I said of discord seem mild. The profession of Oregon has seen the account of these proceedings, as a number of copies were sent me from out in the state, and it could serve no useful purpose for others to know more of them. The committee says it was an animated meeting, and it certainly was. On the subject of discord between the leaders of the profession, I also quote from a letter of Dr. Walter Brown, Cloverdale, Ore., in the current number of the *Medical Sentinel* (Dr. Coe's journal):

"I will relate an incident in my own experience. About two years ago a fairly intelligent, well-to-do stockman consulted me. His case was so plainly and unmistakably a surgical one that I advised him to go to Portland and have an operation performed. I mentioned three surgeons and told him to consult any or all of them. Instead of remaining in Portland six or eight weeks, as he should have done, he returned in ten or twelve days. He anticipated my surprise and said: 'Doctor, those surgeons in Portland are a pack of snapping, snarling coyotes. I called on Dr. No. 1, who treated me courteously and told me what would have to be done, etc. I next called on Dr. No. 2, and he treated me very politely, but when I told him what Dr. No. 1 had said about my case, I saw he did not like it a bit. Dr. No. 3 was even worse. When I went back to Dr. No. 1 and told him what Drs. Nos. 2 and 3 had said about my case, he grew furious. So I decided about all they cared for was the size of the wad they could get out of me and each was afraid the other would get it, and I said to myself they could go to h—l. I went to see that Chinese doctor. He treated me for a while, and I felt so much better that he told me I could come home, and he would treat me by mail.' It is barely possible that you can imagine my chagrin and mortification at this recital. But I will add that this man had to make a business trip to the home of the city of the A. M. A. JOURNAL and while there had an operation performed."¹

In regard to the administration of the medical law, I submit the following letter from one who reports an actual experience:

"ORE., Jan. 6, 1906.

"Dr. J. N. McCormack, Bowling Green, Ky.

"Dear Doctor:—From the enclosed clipping (*Portland Oregonian*) you will see that your missionary work in our state has already done some good, and I wish to congratulate you for telling the truth so well. Your criticism of the State Board of Medical Examiners was especially timely, for I believe that no poorer board ever existed, and the standard of the profession can never be raised until a new board is formed.

"When I took the examination for my license some four years ago, it was ludicrously easy, and yet every man, with the exception of Dr. Clouche—an Ann Arbor graduate—and myself, cribbed very openly, in plain view of the examiner in charge. The common method was to copy the examination directly from books which they had either on the desks or on their laps, but a few had been industrious enough to prepare 'ponies'. In the anatomy examination, when one old fellow couldn't find what he wanted in the book, Dr. _____ very kindly wrote out the answer and said, 'That's the way I want it answered,' and then winked very broadly at me as he handed it to him. The evening after Dr. _____ examinations, we met him as we were coming out of the Marquam Theater, and Dr. Clouche asked him why he didn't try to stop the cribbing which was so flagrant and disgusting. He replied that the board had decided that any man who was bright enough to crib was bright enough to pass any examination they might give him.

"After some hesitation I joined the local branch of the State Medical Society some two years ago. . . . Were it not compulsory to belong to it in order to remain in good standing in the American Medical Association I would certainly withdraw from the same. . . .

"Trusting that I have served to help convince you that the criticisms you made were justified, and that the state needs a new board of examiners, I am,

"Yours very truly, "_____"

To show that was not an isolated example, I quote again from Dr. Brown's letter in Dr. Coe's journal:

"At the time of my examination I saw applicants consulting notes and books pretty freely in making out their papers; however, that has nothing to do with the grade of the examination or the examiner, but it was the faulty method of holding the examination."

Similar support could be given for every other material statement made by me if necessary. In this connection it may be proper for me to say that I did not make the acquaintance or receive a word of information from any physician in Portland who was not a member of the City and County Society, and that I have used no letters or information since not furnished by the members of that organization or the State Society. That my purposes were not so generally misunderstood, even in Portland, except by those who are such important factors in the conditions criticised, I quote the following from one of the most prominent of the younger physicians, a kind of letter which might be multiplied indefinitely from out in the state:

"PORTLAND, ORE., Dec. 16, 1905.

"My Dear Doctor:—I wish to commend you on your article in THE JOURNAL of December 9, and I hope, representing as I do the younger profession, that the influence of your recent visit and your just and timely criticism of our organization will soon bear fruit. The profession has been coming closer and closer together the last few years, and you have given this coalescence a marked impetus.

"I hope you can come to Oregon again; I hope you will make definite plans to do so, because in just such sections your influence on those who are stubborn, and encouragement to those who are striving, is just what is needed."

And at a later date the following from the same gentleman:

"I am sorry that many of the members of the society to which I belong have taken the wrong view of your communication to THE JOURNAL on the Oregon organization, and I hope the committee, which was appointed to reply to you, will 'cool off' a little, and consider the spirit in which you wrote the communication, and the motives which prompted you in doing so.

"The wording of your criticism was taken very literally, and very much to heart, but it is one of those misunderstandings which will be adjusted in the course of time, and soothed down by the cooling balm of sober second thought.

"With the compliments of the season, I am,

"Very truly yours, "_____"

If space permits, Mr. Editor, I will join in the request that my article and the correspondence with Dr. Josephi be reproduced as an introduction to the report of the committee, that the whole subject may be considered together, and especially that the kind and conciliatory spirit which has actuated me from the beginning may be extended to the enforced introduction of matter here which might otherwise seem harsh.

In conclusion, this visit to the Pacific Coast had long been in contemplation and had no connection with the session of the Association in Portland. While a representative of that body, I alone am responsible for my conclusions and for their publication, and if there seems anything ungracious on the part of the Association, or in the editorial comments of THE JOURNAL, which were based on what had been reported by me, I ask that the entire responsibility be laid at my door. It was all said in a spirit of kindness, which no misunderstanding there can either pervert or alter. Such factionalism and rivalry as exists in Portland, estranging, as it does, the families and friends of these excellent, worthy men, is not normal, healthful or universal, as the committee, from long familiarity with such conditions, insists and believes, and is no less hurtful to every interest of both the profession and people because it continues in some other equally unfortunate localities. If these gentlemen would only be as kind and generous with each other in their every-day relations as they are to visitors, these conditions would soon be ancient history, as they should be. No one

[2. It is our opinion that no good will be accomplished by taking the space to reproduce the communications referred to. Those who are anxious to read them will find the communications in THE JOURNAL, Dec. 9, 1905, pp. 1804 and 1818.—Ed.]

[1. The current number of the *Medical Sentinel* states that all three of these physicians have since left the state.—Ed.]

would be more benefited by such hearty, cordial co-operation than these leaders and surgeons, and lesser benefits would soon extend to every other physician, and especially to the younger element in the profession, and I again urge that it be tried, confident, from long experience and observation, that it will do all that is promised.

J. N. MCCORMACK.

Medical Forgeries—the Hagen Burger Case.

DENVER, Feb. 19, 1906.

To the Editor:—Dr. J. C. Connell's letter in THE JOURNAL, February 17, contains certain misleading statements relative to the now famous Hagen Burger case that I can not allow to go without correction. By reference to my article on "Medical Forgeries" in THE JOURNAL, February 3, it will be seen that in the second paragraph of his letter he has misquoted the sentence relative to the power of revocation vested in the Colorado licensing board. He has changed the past tense of the verb to have to the present.

In criticising the board's failure to convict Hagen Burger of the criminal charge still pending against him, as compared with the inability, thus far, of the Queen's University senate to revoke the diploma which they know was secured on fraudulent representation, Dr. Connell fails to take into consideration the greater difficulty one encounters in securing a conviction on a criminal charge than in prosecuting a civil suit. Furthermore, under the old Colorado statute extradition was impossible, and he should not criticise us for failure to convict a fugitive from justice.

I am not aware of apologizing for allowing Hagen Burger to escape conviction of the charge still pending in Colorado, nor is there anything in my article threatening to "place certain disabilities on all Queen's College graduates coming to Colorado." The Colorado board and the plan of medical licensure are too broad in their treatment of applicants for license to resort to anything so small. No qualified graduate of Queen's University need fear mistreatment at our hands.

The following from my article with reference to the action of the senate does not sound like criticising Queen's University for not "immediately canceling the degree granted to Hagen Burger":

"Their senate is now conducting an investigation of the case, in which those of their faculty in charge of matriculation and examination of candidates for graduation were most ingloriously duped, and to do other than to revoke the diploma granted Hagen Burger by their college would gain that institution a most unenviable reputation with the medical boards throughout the world."

Why will not Dr. Connell frankly admit that the faculty was duped by the oleaginous Teuton, and proceed as vigorously as the Canadian law will permit to revoke his diploma obtained by securing advanced standing through fraud? A trip to Europe is not necessary to prove it.

S. D. VAN METER.

Secretary-Treasurer Colorado State Board of Medical Examiners.

Pauper Fees by Wealthy Corporations.

BEDFORD, IND., Feb. 19, 1906.

To the Editor:—I inclose a schedule of fees of the Maryland Casualty Company, Baltimore. The Maryland Casualty Company is sending this schedule to all physicians who act for them, and possibly some physicians will sign the schedule without considering that it means just about one-half of the former fees. I wrote the company that it would be impossible for me to sign it. For such a company, in its present prosperous condition, to ask us to accept such inadequate fees is simply preposterous. The idea of a surgeon accepting \$3 for amputating a finger or \$15 for trephining! If the profession will stand together it will be much better off.

C. H. EMERY.

[The schedule of fees, which has been referred to by several correspondents, asks surgeons to make visits where minor surgical operations are required, such as contused, incised or lacerated wounds, for \$1. This amount is paid also for the removal of foreign bodies from the eye.

Three dollars for the amputation of fingers, for reduction of fractures of the hands or feet, or for dislocation of the bones

of the hands or feet, or for ligating an artery below the knee or elbow.

The generous fee allowed for dislocation of the shoulder, elbow, wrist, ankle or jaw, or for treating fractures of the scapula, fibula, clavicle, ribs, arm, forearm or jaw, is \$5.

For fracture of the femur, tibia or patella, \$10.

The liberal allowance of \$15 is made for trephining the skull, removing the eye, reducing a dislocation of the hip joint or amputating the forearm, or for the excision of the larger joints except the hip joint.

The company becomes extremely generous toward the end and gives \$25 for amputation of the hip or shoulder joint, or excision of the hip joint, or for amputation of the thigh or of the leg.

Then, if more than one patient is treated in the same locality and at the same visit, the above charge is allowed for one, but for all over one only one-half is allowed. Further, if the person injured has received more than one injury the surgeon is paid for treating the most serious injury only, and so on.

We agree with our correspondent that if the profession will stand together they will not be insulted with such contemptible offers as those made by the Maryland Casualty Company of Baltimore.—Ed.]

Quinin in Pneumonia.

ALBUQUERQUE, N. M., Feb. 19, 1906.

To the Editor:—I have read with great interest the article "Pneumonia" appearing in THE JOURNAL, Feb. 10, 1906, by Dr. W. J. Galbraith. Why Dr. Galbraith should claim originality in this course of treatment, however, I fail to see. Dr. A. J. Giesy, attending physician to the Good Samaritan Hospital, Portland, Ore., pursued the course of treatment, to my knowledge, in 1894, and how much earlier I do not know, and as house physician to the Good Samaritan Hospital at that time I have repeatedly administered, by Dr. Giesy's directions, from 30 to 50 grains of quinin at the initial dose and have pursued a like course at different times during the subsequent twelve years. I do not, by any means, think that this measure should be put forth as a matter of routine, but many patients in the first stage of pneumonia are doubtless greatly benefited, and it may abort a case—if one's judgment of such an event is to be accepted.

J. B. CUTTER, M.D.,

Surgeon in Charge, Santa Fé Coast-Line Hospital.

Marriages

HENRY W. HERYFORD, M.D., Anderson, Cal., to Mrs. C. E. Corbin of Springfield, Mo.

HARRY J. BRUCE, M.D., to Miss Mary Elizabeth Morrison, both of Chicago, February 7.

P. H. WILLIAMS, M.D., to Miss Sibyl Stafford, both of Paintsville, Ky., February 12.

E. D. JACKSON, M.D., Newcastle, Pa., to Miss Sue Anderson of La Rue, Ohio, February 16.

ROBERT N. CUMMINGS, M.D., Emmett, Idaho, to Miss Harriet Reynolds of Boston, February 19.

DANIEL A. STINE, M.D., to Miss Florence Rebecca Harris, both of Philadelphia, February 14.

WILLIAM WHITALL REQUARDT, M.D., to Miss Chesley Chenton, both of Philadelphia, February 10.

MARTIN M. GROVE, M.D., Dell Rapids, S.D., to Miss Grace Fiske, at Plainview, Minn., January 1.

CHARLES R. DANCER, M.D., Fort Wayne, Ind., to Miss Catherine Rusk of Waveland, Ind., February 19.

EDWARD W. WEBER, M.D., White Plains, N. Y., to Miss Eleanor Jackson of Ottawa, Ont., February 7.

CLEMENT ELLIS CONGER, M.D., Cross Keys, Va., to Miss Hallie Ramsey, at Alexandria, Va., February 21.

J. GEMMILL CHICHESTER, M.D., Redfield, S. D., to Miss Frances Reeves Mettler of Chicago, February 24.

FRANCIS A. SUTCHOS, M.D., Denver, Colo., to Miss Adelaide N. Shell of New York City, at Burlington, Iowa, February 14.

HARRY C. MARXMIILLER, M.D., Newport, Ky., to Miss Ednah Tinker Gruwell of Los Angeles, Cal., at Bluffton, Ind., February 22.

Deaths

Thomas Ross, M.D. McGill University Medical Department, Montreal, 1863; a member of the American Medical Association; ex-president, secretary and assistant secretary of the Medical Society of the State of California; president of the Sacramento Society for Medical Improvement; a member and for eight years president of the Sacramento board of health; physician to the Southern Pacific Railroad Hospital; in 1878 county physician of Yolo County, and for a long time secretary of the Woodland board of health, died at his home in Sacramento, February 11, from cerebral hemorrhage, after an illness of three weeks, aged 65.

Thomas J. Bergen, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1859; surgeon of the First Pennsylvania Infantry during the Civil War; for more than twenty years a member of the staff of St. Elizabeth's Hospital, Utica, and a member of the active or consulting staff of the Utica General Hospital since its foundation; a member of the board of charities and later of the board of town auditors of Utica; a member of the Oneida County Medical Society, died at his home in Utica from heart disease, February 15, after an illness of three months, aged 72.

William Wilson Torrence, M.D. Rush Medical College, Chicago, 1880; a member of the American Medical Association, Illinois State Medical Society and Black Hills Medical Society; honorary member of the North Central Illinois Medical Association; member of the American Association for the Advancement of Science; formerly a well-known physician of Deadwood, S. D. and prior to that time a missionary of the Presbyterian board in Teheran, Persia, and physician to the Shah, died at St. Joseph's Hospital, Denver, February 13, after a long illness, aged 50.

Wesley Davis, M.D. Harvard University Medical School, Boston, 1866; a member of the American Medical Association for many years; a veteran of the Civil War; counselor of the Massachusetts Medical Society; a member of the visiting staff and for a long time a trustee and president of the board of trustees of the Worcester City Hospital; one of the oldest practitioners of Worcester, died at his home in that city from cerebral hemorrhage, after an illness of two weeks, aged 65.

Thomas Kelley, M.D. Rush Medical College, Chicago, 1871; a veteran of the Civil War; for thirty-five years a physician of the Santa Clara Valley, Cal.; for one term county physician, and once president of the Santa Clara County Medical Society; from 1899 to 1904 postmaster of San José, Cal., died at his home in that city, February 14, from fatty degeneration of the heart, after a long illness, aged 69.

Thomas Chappell Cook, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1859; health physician of Colorado County, Texas, for several years; assistant surgeon of the First Texas Heavy Artillery, C. S. A., during the Civil War; a member of the state legislature in 1885 and 1886, died at his home in Weimar, Texas, February 19, from nephritis, after a long illness, aged 69.

James B. Sherry, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1868; a veteran of the Civil War; for several terms medical director of the Department of Massachusetts, G. A. R.; a member of the Fusilier Veteran Association and of the Ancient and Honorable Artillery Company, died at his home in Boston, February 21, from heart disease, aged 62.

George W. Stone, M.D. Bellevue Hospital Medical College, New York City, 1876; a member of the American Medical Association, and one of the most highly esteemed practitioners of Lapeer County, Mich.; for more than twenty years a member of the school board, died at his home in Metamora, Mich., February 13, from heart disease, after an illness of a year, aged 60.

William Valentine McKenzie, M.D. College of Physicians and Surgeons in the City of New York, 1884; a member and president of the Middlesex County (N. J.) Medical Society, and president of the board of education and a member of the board of health of Metuchen, died at his home in that city, February 13, after an illness of four months, aged 44.

Alfred Martin Vollmer, M.D. American Medical Missionary College, Chicago, 1902; a member of the American Medical Association; for two years a practitioner in Apia, Samoa, and vice consul general of the United States at that point, died at his home in Milton, Wis., February 15, from pulmonary tuberculosis, after an illness of several months, aged 30.

David Fawcley, M.D. College of Physicians and Surgeons in the City of New York, 1864; the oldest practitioner of Watertown, N. Y.; a medical cadet in the Army, and later a surgeon in the United States Navy during the Civil War, died in Watertown while making a professional call, February 13, from cerebral hemorrhage, aged 68.

Francis E. North, M.D. College of Physicians and Surgeons, Chicago, of Taylorville, Ill., a member of the Illinois State Medical Society and Christian County Medical Society, died at the Missouri Baptist Sanitarium, St. Louis, February 20, from intestinal obstruction, eight days after an operation for appendicitis, aged 27.

William E. Mattison, M.D. College of Physicians and Surgeons in the City of New York, 1852; surgeon of the Third New Jersey Volunteer Infantry during the Civil War; for many years justice of the peace of North Plainfield, N. J., died at his home in that city, February 11, from heart disease, aged 82.

Warren P. Blake, M.D. Dartmouth Medical School, Hanover, N. H., 1884, a member of the Springfield Medical Club, Hampden District Medical Society and Massachusetts Medical Society, died at his home in Springfield, Mass., February 15, from disease of the liver, after an illness of two months, aged 47.

William Barber, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1865; one of the oldest practitioners of Waverly, Iowa; once coroner of Bremer County; a surgeon during the Civil War, died in Waverly, from heart disease, February 10, after a short illness, aged 75.

A. Henry Butts, M.D. Medical College of Virginia, Richmond, 1858, a surgeon in the Confederate service during the Civil War and until a few months ago a practitioner of Greenville, Monroe County, W. Va., died at his home in Charleston, W. Va., February 7, from pneumonia, aged 72.

William H. Murphy, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1899; a famous Yale athlete and coach; athletic instructor in the United States Naval Academy, Annapolis, Md., died in Westboro, Mass., February 14, aged 35.

John H. Cochran, M.D. New York University, New York City, 1867, of The Plains, Va.; a veteran of the Civil War; representative of Fauquier and Loudon counties in the Virginia legislature, died in Richmond, February 24, from cerebral hemorrhage, aged 63.

James M. Rix, M.D. Bellevue Hospital Medical College, New York City, 1868, a Civil War veteran, some-time member of the school board of Warner, N. H., died at his home in that place, February 16, from cholelithiasis, after an illness of a year, aged 72.

Andrew Milton Miller, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1889, for several years health officer of Alpena, Mich., died from malignant disease of the stomach at his home in Detroit, February 16, aged 42.

Pennick Browning Rogers, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, a member of the staff of the Manhattan Eye and Ear Hospital, New York City, died in New York, February 11, from pneumonia, aged 25.

Eley H. Harrison, M.D. University of Nashville (Tenn.) Medical Department, 1896, city physician of Texarkana, Texas, for two years, died at a sanitarium in Memphis, Tenn., February 15, after an operation for appendicitis, aged 35.

Charles H. Chubb, M.D. Jefferson Medical College, Philadelphia, 1856, of Palenville, N. Y., for a number of years president of the Greene County (N. Y.) Medical Society, died in Mount Vernon, N. Y., February 16, aged 72.

Howard Carey, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1885, of Tenstrike, Minn., died at the Beltrami County Hospital, Bemidji, Minn., from nephritis, February 13, after a long illness.

David Onslow Smith, M.D. Harvard University Medical School, Boston, 1850, well known as a physician and musical composer, died at his home in Hudson Center, N. H., February 15, after a long and painful illness, aged 82.

Harry Martyn Brace, M.D. College of Physicians and Surgeons in the City of New York, 1881, mayor of Perth Amboy, N. J., died at his home in that city, February 19, from nephritis, after an illness of six months, aged 46.

Benjamin B. Ferguson, M.D. Jefferson Medical College, Philadelphia, 1893, a member of the Camden County Medical Society, died suddenly at his home in Camden, N. J., February 12, from cerebral hemorrhage, aged 53.

Benjamin Franklin Grant, M.D. Homeopathic Hospital College, Cleveland, Ohio, 1867, of Bath, N. Y., died at the Coburn Sanitarium in that city, February 17, from general nervous breakdown, after a long illness, aged 78.

L. A. Wilson, M.D. St. Louis Medical College, 1864, assistant surgeon of the Forty-fourth Missouri Volunteer Infantry during the Civil War, died at his home in Cuba, Mo., February 17, after a short illness, aged 78.

A. Perry Bowman, M.D. Chicago Homeopathic Medical College, 1878, president of the Iowa Homeopathic Medical Society, died suddenly at his home in Sioux City, from heart disease, February 19, aged 49.

William Gaines Kibbe, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1878, a Confederate veteran, of Abbeville, La., died suddenly from apoplexy in that city, February 12, aged 64.

Eleanor Rolshausen, M.D. Woman's Medical College of Chicago; formerly of Logansport; county physician of Cass County, Ind., for two terms, died at her home in Royal Center, Ind., February 9, aged 72.

James Murphy, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1866, died at his home in Bangor, Mich., February 13, from cerebral hemorrhage, after a short illness, aged 63.

Hugh J. Sullivan, M.D. University of Wooster Medical Department, Cleveland, Ohio, 1889, coroner of Wayne County, Ohio, died at his home in Congress, from poison taken accidentally, February 24.

Oliver D. Coppedge, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1857, of Concrete, Texas, died in Cuero, Texas, February 9, from pneumonia, after a short illness.

W. Dixon Norwood, M.D. National Medical University of Chicago, 1895, was thrown from his buggy in a runaway accident at Shreveport, La., February 14, and almost instantly killed, aged 36.

Warren Elliott Harrigan, M.D. New York University, New York City, 1885, of Williamsburg, N. Y., died suddenly from heart disease while making a professional call, February 14, aged 43.

William Wallace Munn, M.D. New York University, New York City, 1868, died at his home in Lansing, Mich., February 10, after an illness of ten months from malignant disease, aged 66.

E. Jansen Westfall, M.D. College of Physicians and Surgeons in the City of New York, 1871, died at his home in Rahway, N. J., February 18, from pneumonia, after a brief illness, aged 59.

Walter K. Wadleigh, M.D. Dartmouth Medical School, Hanover, N. H., 1887, died at his home in Hopkinton, N. H., February 7, from nephritis, after a long illness, aged 41.

John Page Burwell, M.D. Jefferson Medical College, Philadelphia, 1880, formerly of Millwood, Va., died recently in Washington, D. C., from heart disease, aged 53.

William H. Cleckler, M.D. Missouri Medical College, St. Louis, 1897, of Gowen, I. T., was drowned while being ferried across Gaines Creek, near Gowen, February 12.

Everett V. Hamilton, M.D. University of Louisville (Ky.) Medical Department, 1889, died at his home in Austin, Texas, February 11, from heart disease, aged 41.

Jacob W. Du Bois, M.D. Bellevue Hospital Medical College, New York City, 1865, died at his home in Millersville, Md., from heart disease, February 19, aged 70.

Thomas B. Lyon, M.D. Kentucky School of Medicine, Louisville, 1880, died at his home in Upland, Ind., February 8, from asthma, after a long illness, aged 53.

Herman Levi Cook, M.D. McGill University Medical Department, Montreal, 1854, died at his home in Toronto, Nov. 16, 1905, from pneumonia, aged 74.

Oscar K. Johnson, M.D. Kentucky School of Medicine, Louisville, 1891, died suddenly at his home in Queens, W. Va., February 18, aged 35.

Morris T. Judah, M.D. (County License, Indiana, 1897), of Gent, Ind., died in Bloomington, Ind., February 14, from heart disease, aged 65.

Henry W. Robertson, M.D. Harvard University Medical School, Boston, 1872, died recently at his home in Crapaud, P. E. I., aged 61.

Charles H. Barnhardt, M.D. Jefferson Medical College, Philadelphia, 1895, died at his home in Concord, N. C., February 7, from pneumonia.

Edwin V. Tegart, M.D. University of the Victoria College, Coburg, Ont., 1859, died at his home in Brantford, Ont., Sept. 9, 1905, aged 70.

George I. McKenzie, M.D. Jefferson Medical College, Philadelphia, 1864, died at his home in Pictou, N. S., in August, 1905, aged 67.

John Gillies, M.D. McGill University Medical Department, Montreal, 1867, died at his home in Teeswater, Ont., Aug. 15, 1905, aged 68.

Herman J. Van der Linden, M.D. University of Utrecht, Holland, 1884, of Delmont, S. D., died suddenly in that place, February 10.

William Hunter Carson, M.D., passed assistant surgeon, U. S. P. H. and M.-H. Service, died at Belize, British Honduras, July 25, 1895.

D. H. Harrison, M.D. McGill University Medical Department, Montreal, 1864, died at his home in Vancouver, B. C., recently, aged 63.

Benjamin A. Penn, M.D. Eclectic Medical Institute, Cincinnati, 1865, died at his home in Bryantsburg, Ind., February 10, aged 82.

Mark A. Perkins, M.D. Kentucky School of Medicine, Louisville, 1887, died at his home in Hastings, Neb., February 13, aged 65.

C. E. Bailey, M.D. Michigan College of Medicine, Detroit, 1881, of Orange, Mich., died recently in Ionia, Mich., aged 54.

Deaths Abroad.

L. de Wecker M.D., the famous ophthalmologist, died at Paris, February 13, aged 74. He was born in Germany and studied at Berlin, Vienna and Paris, practicing as a physician in France and Russia until 1862, when he settled in Paris and devoted himself to practicing and teaching ophthalmology. It was not then taught in the medical colleges as a special science. The list of his works and of the instruments and operations which he devised is a long one.

W. H. Gilbert, M.D., died at Baden, February 11, aged 48. He was known as a popular physician, a balneologist and proprietor of a sanatorium, but his fame rests principally on his suggestion of the medical study trips, which he inaugurated six years ago with great success from the start.

A. Gusserow, M.D., professor of obstetrics and a well-known writer on obstetric and gynecologic topics, died at Berlin, February 6, aged 69. He has been co-editor of the *Archiv f. Gynäkologie* since 1884.

Miscellany

TYPHOID FEVER PROPHYLAXIS.

Report on the Methods Employed in the Campaign Against Typhoid in Germany.

E. D. W. GREIG, B.Sc., M.B., C.M.

Captain Indian Medical Service, Deputed by the Secretary of State for India to investigate the methods.

1. INTRODUCTION.

In order to study the various methods employed in the campaign against typhoid fever in Germany, permission was obtained, through the Foreign Office, for me to go to Germany and investigate the subject there. I reached Berlin Sept. 25, 1905, and was advised to study the methods, in the first instance, at the Kgl. Institut für Infektionskrankheiten. This I did until Oct. 22, 1905, on which date I proceeded to certain of the institutes for antityphoid work to study the practical application of the methods. I visited the institutes at the following places: Saarbrücken, Neunkirchen, Metz, Diedenhofen and Trier. At these places I studied the routine method of examination of the material sent in, and accompanied the superintendent on several occasions into the district to see the methods adopted in investigating outbreaks of typhoid fever in the villages. I was thus enabled to gain an insight into the practical working of antityphoid measures in Germany.

I desire to express my heartiest thanks to Professor Dr. Kirchner (*geh. ober. medicinrat und vortragender rat. in ministerium d. geistl. unterrichts u. med. angelegenheiten*) for his advice and help, to Kgl. Med. Rat. Professor Dr. Gaffky, director of the Kgl. Institut für Infektionskrankheiten, and

to Prof. Dr. P. Frosch, with whom I worked at the institute, for his constant courtesy, and to the superintendents of the institutes at Saarbrücken, Neunkirchen, Metz, Diedenhofen and Trier for affording me every facility for investigation.

2. FACTS OF IMPORTANCE IN CONNECTION WITH ANTITYPHOID MEASURES.

(a) Typhoid fever is spread to a large extent by the bacilli being directly carried from the sick to the healthy, e. g., infection of food, the use of contaminated eating and drinking utensils, etc. In this form of so-called "contact" infection the epidemic has a gradual onset and prolonged course. Should the bacilli gain access to a water supply used by a number of persons, then a large number of cases occur simultaneously—the so-called "explosion epidemic." The workers in Germany have found this latter mode of infection of comparatively rare occurrence as compared with the former.

(b) Living bacilli may continue in the feces and urine for long periods after the fever has ceased, and persons who give no history of previous attacks of typhoid fever, but who have been in contact with typhoid cases, may also harbor the bacilli in their stools. This group of cases is a very important one from the prophylactic point of view; they are the "bacilli carriers" of the Germans. These individuals are, in fact, "reservoirs" of the parasite and play an analogous part to the wild game in Nagana, which harbor the trypanosomes without any apparent signs of disease.

(c) The disease may run a very mild course, particularly in young children, and thus a number of cases may escape observation. The detection of these cases forms a very important part of the antityphoid work.

(d) A disease closely resembling typhoid fever, clinically, but caused by a totally distinct organism—*B. paratyphosus*—may occur at the same time as typhoid fever.

3. IT IS NECESSARY TO ORGANIZE SCIENTIFIC INSTITUTES NEAR THE TYPHOID EPIDEMIC TO PUT INTO PRACTICE THE ABOVE PRINCIPLES.

The German Government has founded eleven institutes, each with a superintendent and two or three trained scientific men, as well as one or two attendants, for the antityphoid campaign in Alsace-Lorraine. These institutes are fully equipped for the scientific work required. They are chiefly engaged in the prevention of the spread of typhoid among the civil population. The military population, which is a large one, has a similar organization, and, the conditions being much more favorable for carrying out the antityphoid measures, the results show a satisfactory reduction of typhoid fever among the troops.

Each institute has its defined area of work, but they also keep in touch with one another. The extent of the area of work is determined by the density of population, e. g., Trier, which is situated in a sparsely populated district, has a very extensive area, while those of Saarlouis, Saarbrücken and Neunkirchen are small, the population being very dense near these places. The institute receives its material from the various medical men in charge of the cases, and the members go out into the villages and towns with the district medical officer of health and investigate the details of the origin of the epidemic. As far as possible, each epidemic is traced back to its source. It is necessary to determine: (i) whether cases are imported ones; (ii) whether the infection is carried by water; (iii) whether carried by food; (iv) whether carried by men affected by typhoid fever, e. g., family epidemic; (v) whether a local focus of endemic typhoid, so-called "typhoid house," exists. In carrying into practice these lines of investigation certain lists kept in every village are examined in the first instance; these are: (a) list kept by police of reported arrivals in the village; (b) the list of attendance at the schools; (c) the sick list (*krankenbassenzisten*); (d) the list of deaths reported. From these lists valuable information is obtained, which forms a starting point for further investiga-

tion. It is generally found that the actual number of cases of typhoid fever far exceeds that which has been reported. The water supply, milk supply and general sanitary condition of the village are carefully inquired into, and the result of these, along with the result of the bacteriologic investigations, is entered in a special form, which is called *Fragebogen*, which contains thirty-nine headings, which are classified under (1) general, i. e., position and character of place, water and milk supply, etc.; (2) special, which contains details regarding patient, the disinfection carried out and the result of the bacteriologic investigations; (3) result of the case, whether it ended in death or recovery; the results of final bacteriologic investigation, and what sanitary improvements have been carried out.

The suspected cases having been picked out by the help of the information obtained from the above-mentioned sources, it is next necessary to examine the blood, feces and urine of each at the laboratory. The blood is taken in capillary tubes. For the urine and feces, special glass tubes, fitted with a metal spoon in the cork and carefully inclosed in a tin and wooden box, are left at the house. Directions are given to the nurse or friends to place three or four spoonfuls of the feces in one tube, which is packed and the box carefully labeled; some urine is also placed in another tube. These are forthwith dispatched to the institute. It is important for the investigation that they should be as fresh as possible. When these are received at the laboratory they are examined at once. The result of the examination is communicated to the medical man in charge of the case and the medical officer of health, who have the necessary disinfection and isolation carried out. When possible the isolation is carried out in special hospitals; otherwise the medical officer of health gives the necessary instructions to the friends for the isolation of the patient in the house. For the purposes of disinfection the liquor crescoli saponatus or the German Pharmacopoeia is used. The eating and drinking utensils are immersed in it. The stools and urine, which are received in special vessels, are mixed with it. After the patient is entirely free from fever, the stool and urine are examined three times at intervals of ten days, and the patients are not allowed to leave the hospital until the result of the bacteriologic investigation shows them to be free from bacilli. It is found necessary to do so three times, as relapses are not infrequent, especially in the fourth week of convalescence, in which case the examinations have to begin afresh.

Having thus considered the general plan of work, it is necessary to consider:

4. TECHNIC FOR EXAMINATION OF MATERIAL FROM SUSPECTED CASES.

As a matter of practical routine, the following examinations are made:

(1) *Blood*.—The usual Widal reaction, carried out both microscopically and macroscopically. The test is made both with typhoid and paratyphoid bacilli. It may be observed that a positive Widal reaction is no proof that the present illness of the patient is typhoid fever, but a reaction, which is at first negative and then becomes positive, is absolute proof.

(2) *Feces and Urine*.—The examination of these for the presence of *B. typhosus* and *paratyphosus* is all important. Unfortunately we have not yet discovered an ideal method for the detection of *B. typhosus* in feces; its recovery from the urine is a simpler matter. We have not got an "enriching" process similar to the peptone water for the detection of the vibrio of cholera. The newer methods, however, are a distinct advance on our older methods, and no doubt further advances will be made.

The following are the methods used: V. Drigalski and Conradt,¹ Malachite green method of Lentz,² Fuchsin agar method of Endo.³ Caffeine-fuchsin agar method of Gachtgens.⁴

1. Drigalski and Conradt: *Zeitschrift für Hygiene und Infektionskrankheiten*, vol. 29, 1902.

2. Lentz and Tietz: "Weitere Mittheilungen über die Anreicherungs-methode für Typhus und Paratyphus bacillen mittelst einer Voculatur auf malachit grün agar." *From Klinische Jahrbuch*. Gustav Fischer, Jena, 1905.

3. Endo: *Centralblatt für Bakter.*, vol. xxv, p. 109.

4. Gachtgens: *Centralblatt für Bakteriologie*, 1. aht. orig., vol. xxxix, No. 5, p. 634.

In the institutes visited, either the Drigalski-Conradi method alone was employed or in combination with the malachite green method. The Endo method was employed in Diedenhofen, as well as the others. Each method has its advantages and disadvantages, but it is certain that rapidly in detecting the typhoid colonies is largely a matter of experience and practice, and an observer who is accustomed to recognize it on one medium may fail to do so on another. The details of the mode of preparation of each of these are given:

A.—PREPARATION OF DRIGALSKI-CONRADI MEDIUM.

(I) *Agar Preparation*.—To three pounds of finely cut horseflesh add two liters of water. Allow it to stand till next day. The expressed meat juice is boiled for one hour and filtered. Add 20.0 gr. peptone silica, Witte, 20.0 gr. nitroase, 10.0 gr. NaCl; boil one hour, now add 70 gr. bar agar, then boil three hours (or one hour in autoclave), render slightly alkaline (indicator litmus paper). Filter, boil half an hour.

(II) *Litmus Solution*.—Litmus solution (Kubel and Tieman) 260.0 c.c. boil for ten minutes, add milk sugar (chemically pure) 30.0 gm. Boil fifteen minutes.

(III) Add the hot litmus-milk-sugar solution to the liquid agar solution cooled to 60° C. Shake well. Render it again faintly alkaline. The color of the froth is a good indicator. Add then 2.0 c.c. of a hot sterile solution of 10 per cent. water-free soda, further add 1.0 c.c. of a freshly prepared solution of 10 gr. crystal violet B. (Hochst) in 100 c.c. warm water (distilled).

One has now a meat-water peptone-nitroase agar with 13 per cent. litmus and 0.01 per mille crystal violet. This can be poured directly into plates and the remainder kept in 200 c.c. flasks.

B.—THE MALACHITE GREEN ENRICHING METHOD OF LENTZ.

The proper preparation to use is malachitgrün (crystal) (Hochst) 1.0 gram, peptone silica 20.0 gr., NaCl 10.0 gr., nitroase (this may be omitted), finely divided, macerated with two liters of water for sixteen hours. The extract is expressed, boiled for half an hour, filtered, then 3 per cent. agar added and boiled for three hours; add to the agar 1 per cent. nitroase, 10.0 gr. NaCl, and 1 per cent. nitroase (this may be omitted). This is brought to the litmus neutral point by soda solution with Duplittest paper. Boiled one hour, filtered through linen. The reaction of the finished agar is sometimes distinctly acid. It is filtered through a coarse filter of 100-200 c.c.

Before the addition of the malachite green, the hot agar is tested by Duplittest paper and so far alkalinized with sterile soda solution until the red strip is distinctly red-violet. This reaction point corresponds to an agar, without nitroase, to an alkaline degree of 1.8 per cent. normal soda below the phenolphthalein-neutral point; if the agar contains nitroase, which remains neutral toward litmus and bacteria, then the alkaline reaction corresponds to 3.5 per cent. normal soda solution below the phenolphthalein point. Add 1.0 c.c. of the hot agar of 1.220 solution of malachite green (the solution keeps good for ten days) is added, i. e., agar contains 1.22-0.00. By this concentration of malachite green (crystal) the growth of the usual *coli*, as well as many *typhoid* and *paratyphoid* organisms, is greatly diminished and practically prevented. The *B. typhosus* growth is also diminished, but only so far that after twenty-four hours the colony can be recognized with the naked eye, the size of a particle of sand, while after a longer period, in the incubator, in two to four days, larger, stronger colonies appear which color the agar yellow.

The finished agar is poured at once into Petri dishes in 2 mm. thick layers. The dishes are well dried.

C.—THE FUCHSIN AGAR METHOD OF ENDO.

In an enamel pot put two liters of water, (tap), 20.0 gr. Liebig's meat 20.0 gr., peptone silica, Witte, 10.0 NaCl, and 80 gr. bar agar. Boil, filter, neutralize. Add 10 gr. chemically pure milk sugar and 10 c.c. of 10 per cent. crystallized fuchsin in 96 per cent. alcohol. Then the medium becomes dark red in color. Now add 25 c.c. of a 10 per cent. sodium sulphite solution. The medium becomes gradually discolored, but only completely so when the agar is stiff. Sterilize in small tubes for thirty minutes. Pour into plates.

D.—THE CAFFEIN-FUCHSIN AGAR METHOD OF GAERTGENS.

Preparation of the Medium.—As a result of his experiments, he found that a 20.0 gr. solution of 0.35 per cent. chemically pure caffeine to Endo's medium (described above), which had an alkalinity equal to 1.5 per cent. normal KOH below the neutral point of phenolphthalein, markedly increased the value of the medium as a means of detecting *typhoid* and *paratyphoid* colonies.

Endo medium, prepared in exactly the same way as described by himself, is liquified, made alkaline to the required degree, and the required amount of caffeine added.

In all these methods attempts are made, with more or less success, to check the growth of members of the coli group and to encourage the development of the *B. typhosus* and *paratyphosus*. In the Drigalski and Conradi method, crystal violet is used; in the Lentz method, malachite green; in the Endo, fuchsin; and Gaertgens, caffeine. At the same time the typhoid colonies are differentiated from the coli group by a color reaction. In Drigalski the typhoid colonies are blue and the coli red. In the Endo the coli colonies turn bright red, while the typhoid colonies are colorless. In both cases the fact that *B. coli* produces acid in presence of milk sugar is made use of. In the one case, litmus, and in the other, decolorized fuchsin. A color reaction is thus obtained in both cases.

Malachite green checks the growth of both coli and typhoid very markedly, but more especially coli. Accordingly, when a stool is planted out on such an agar plate, it may not be possible at the end of twenty-four hours to detect any colonies of typhoid. Lentz has found, however, that if such a plate is

flooded with normal salt solution and gently rocked and then allowed to stand for a few minutes the delicate typhoid colonies diffuse themselves in the solution, while the solid coli colonies sink to the bottom, so that if a little of this fluid is plated out on Drigalski plates practically a pure growth of *B. typhosus* or *paratyphosus* may be obtained. In practice it is found that *B. paratyphosus* is readily "enriched" in this way, but the *B. typhosus* not to the same extent.

Having thus seen the method of preparation of the different culture media and principles of their use, it is next necessary to consider the method of preparation and inoculation of the plates with the feces and urine. The following are the steps:

1. *Preparation of the plates*.—In this investigation it is more convenient to use a larger size of Petri dish than that generally used. It should be from 15 to 20 centimeters in diameter. About 20 to 25 c.c. of the medium is poured into each plate. The plates are allowed to remain open until all the steam has evaporated and the agar is stiff. It is essential that the surface of the plates should be quite dry and firm. Contamination by air-organisms does not occur on account of the aniline dye present in the culture media.

2. *Preparation of the Feces*.—The feces are thoroughly mixed with a small quantity of sterile normal salt solution. Then, when one malachite green plate is used in combination with two Drigalski plates, about 0.5 c.c. of the mixture is placed on a green plate. This amount may also be used with the caffeine-Endo, but with the Drigalski plates alone a much smaller amount, about one or two loofpuls, is sufficient.

In the case of urine, several drops are placed on the green plates, on the Drigalski plate one drop is sufficient.

Having thus got the prepared material on the first plate, the next step is the smearing. This is done in the same way, whether green and blue, or all blue, plates are used.

3. *Smearing of the Plates*.—A sterile glass rod, which has had its terminal end in the water bent at right angles, is used.

The material on the first plate is thoroughly smeared by rubbing the glass spatula, as it is called, in all directions over the surface of the agar. Then, without sterilizing it, the same spatula is rubbed over the surface of a second plate, and then over a third and fourth plate, until the smearing is complete. The plates are then allowed to stand open till quite dry. The plates are then placed in the incubator at 37° C., and left there for twenty to twenty-four hours. At the end of this period the next step is examination of the colonies.

THE EXAMINATION OF THE COLONIES.

It will be convenient to state briefly the characters of the colonies on the different media already mentioned.

1. *Drigalski-Conradi*.—By this method the first plate is so overgrown that it is useless for further examination. The second, third and fourth, however, are carefully inspected. It is very desirable to use a hand lens for this purpose, as it is directly beneath so that the light falls from a wall, not directly from the window, as a better contrast between the colonies is obtained. After a good deal of practice, it is possible to recognize immediately a colony of *B. typhosus* on the plate over which only a single one exists, but at first it takes a considerable amount of time, because a large number of colonies are found which closely resemble those of *B. typhosus*, and it is, therefore, necessary to test each of them according to the methods described later. Broadly stated, the *B. coli* colonies are more or less colored in color, not transparent and from 2 to 3 millimeters in diameter, while the *B. typhosus* colonies have a diameter of from 1 to 3 millimeters. The color is blue with a dash of violet; they resemble dew drops.

2. *Conradi's Coffee Green and Drigalski Method*.—As will be remembered, the first plate in this method was malachite green agar, and the second and third Drigalski-Conradi. At the end of twenty hours the second and third plates are examined and present the same characters as noted above. If typhoid colonies are found on these plates then the investigation is finished, but, if they are not, it is possible by a further procedure to detect them, and this is the special merit claimed for this method. The procedure is that the second plate is flooded with sterile normal saline and gently rocked, and then allowed to stand for a few minutes. By this means it is found that the more delicate typhoid and paratyphoid colonies readily diffuse themselves in the liquid, while the heavier coli colonies grow in the solid. The colonies, when reached by the malachite green, sink to the bottom. The glass spatula is then dipped in the salt solution and rubbed on one or two Drigalski-Conradi plates, which are placed in the incubator at 37° C. for twenty hours. When examined, the plates are found to be "enriched" by the malachite green, giving very good results with *B. paratyphosus*; the *B. typhosus* is not "enriched" to the same extent, but still it is an additional means of detecting this organism, and in the hands of Lentz has yielded good results.

3. *Endo Method*.—Here all the coli colonies are bright red at the end of twenty hours, and, therefore, very easily separated. The typhoid colonies are colorless and very transparent. A stool plated on this medium gives a very striking difference in the color. This method does not strain the eyes to the same extent as the blue plates. If a very large number of coli organisms are present the plate is liable to become entirely red, and this interferes with the examination of the typhoid colonies. On the whole, this medium appears a very useful one for the separation of *B. coli* and *typhosus*.

4. *Gaertgens Caffein-Fuchsin Agar*.—The appearance is essentially the same as on the Endo plates, but the growth of *B. coli* is markedly inhibited.

Having thus seen the general appearance of the colonies, the next step is:

THE IDENTIFICATION OF SUSPECTED TYPHOID COLONIES.

In practice this is done as follows: A portion of the colony is touched with a very fine platinum needle and placed in a

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

INFORMATION WANTED ABOUT DR. COLIN M'KINZIE.

Dr. J. B. Carrell, Hathoro, Pa., and Mr. Webster A. Melcher, 1124 Girard Bldg., Philadelphia, have been endeavoring in vain to learn something about Dr. Colin McKinzie, who wrote or delivered some lectures on gynecology some 125 or more years ago. Copies of these lectures were owned by one J. S. Thompson in 1784. Any facts or suggestions as to avenues for inquiry will be welcomed.

"DISTRIBUTION OF COEFFICIENT."

—, COLO., Feb. 18, 1906.

To the Editor:—Can you explain to me "distribution of coefficient" used in the article "Theory of Narcosis" by Meyer, in THE JOURNAL, Jan. 29, 1906? He bases his premises on that table. What was his mixture of fat and water? How does he obtain his distribution coefficient? He has aroused my interest, but did not exactly satisfy me. A. J.

ANSWER.—By "distribution coefficient" is meant the proportion of a given substance that is distributed between two or more different solvents. This may be illustrated as follows: Suppose we have a substance which is twice as soluble in benzine as it is in water, and we shake it up in a flask containing a mixture of equal parts of benzine and water. Part of the substance will be dissolved in the water, and just twice as much will be dissolved in the benzine. This proportion of 2 to 1 will be the "distribution coefficient," or, as it is usually called, "partition coefficient" of the substance in a mixture of water and benzine. The common laboratory practice of extracting many organic substances that are highly soluble in ether, from watery solutions, by shaking up a mixture of the watery solution and ether in a suitable container depends on this principle.

In Professor Meyer's experiments, the narcotic to be studied was shaken up in a mixture of equal parts of fat and water, and the proportion of the narcotic that was taken up by the fat and the proportion taken up by the water were ascertained. The relation of the amount of narcotic dissolved by the fat to the amount dissolved by the water constitutes the coefficient. For example, if in a given experiment 4 grams of tetralin were dissolved in the fat and 1 gram in the water, the coefficient for tetralin in this mixture would be 4/1 or 4.

State Boards of Registration

COMING EXAMINATIONS.

MAINE State Board of Registration of Medicine, City Building, Portland, March 13. Secretary, Wm. J. Maybury, Saco.

CONNECTICUT Medical Examining Board, City Hall, New Haven, March 13-14. Secretary, Charles A. Tuttle, New Haven.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, March 13-14. Secretary, Edwin B. Harvey, Boston.

Arizona October Report.—Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examinations held at Phoenix, Oct. 2-3, 1905, and Jan. 1-2, 1906. At both examinations the number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75.

At the October examinations the total number of candidates examined was 9, of whom 8 passed and 1 failed. The following colleges were represented:

| College. | PASSED. | | Year Grad. | Per Cent. |
|----------------------------------|---------|-------|------------|-----------|
| | | | | |
| Kentucky School of Medicine | | | (1905) | 79.2 |
| College of P. and S., Baltimore | | | (1904) | 80.7 |
| University of Iowa | | | (1899) | 75 |
| Cooper Med. Coll., San Francisco | | | (1897) | 76.9 |
| Rush Med. Coll. | | | (1903) | 76.3 |
| University of Pennsylvania | | | (1903) | 80.2 |
| Jefferson Med. Coll. | | | (1899) | 84.6 |
| Denver College of Medicine | | | (1901) | 83.4 |

| College. | FAILED. | | Year Grad. | Per Cent. |
|--------------------------|---------|-------|------------|-----------|
| | | | | |
| University of Louisville | | | (1904) | 49.3 |

At the January examination the number of candidates examined was 10, of whom 9 passed and 1 failed. The following colleges were represented:

| College. | PASSED. | | Year Grad. | Per Cent. |
|-------------------------------------|---------|-------|------------|-----------|
| | | | | |
| American Med. Coll., St. Louis | | | (1892) | 75 |
| College of P. and S., San Francisco | | | (1904) | 75 |

drop of highly active serum, in dilution 1-100, on a slide and carefully mixed; at the same time a control should be made with a drop of normal saline solution placed alongside. The agglutination, if it occurs, may be observed with a hand lens or low power of the microscope. Both typhoid and paratyphoid sera are used. In this way a large number of colonies can be rapidly examined. Should complete agglutination occur, then the remainder of the colony is inoculated into tubes containing various nutrient media. From the academic point of view, a considerable number of these are required, but in practice it is found that about three amply meet all the necessities, of which ordinary agar slope, litmus whey and neutral red agar or grape-sugar are most commonly used.

The following is a complete list of the different media, with the methods of preparation:

(a) *Bariskov milk sugar*.—Made thus: (1) 1 gr. nutrose, 0.5 gr. NaCl, aqua distill. 100 c.c. milk; filter several times to clarify (2) 5 c.c. litmus solution (Kubel and Tieman) 1 gr. milk sugar or grape sugar or mannite, maltose, etc. Sterilize six to eight minutes. Cool to 60 per cent. C. Mix (1) and (2). Sterilize for ten minutes on three successive days.

(b) *Mannite*, as above.

(c) *Bariskov's grape sugar*, as above.

(d) *Litmus whey*: 500 c.c. milk; add 10 to 12 c.c. N/1 solution HCl to precipitate casein. Neutralize with soda solution. Boil one to two hours. Let the precipitate fall to the bottom. Take 100 c.c. of fluid and add 5 c.c. litmus solution. Plate in tubes, sterilize two to three hours at 100 C.

(e) *Neutral roth agar*: Agar 2 per cent., grape sugar 0.3 per cent., neutral roth solution 1 c.c. (saturated watery solution of Ehrlich's neutral roth). Mix; sterilize.

Should the agglutination be positive in 1-100 dilution of serum, and the organism gives characteristic reactions in the various media, the diagnosis of typhoid or paratyphoid, as the case may be, can then be made. Only in exceptional cases is it necessary to perform the Pfeiffer experiment.

The above is a description of the routine examinations made at the institutes. In addition to the urine and feces it may occasionally be necessary to examine the expectoration from the lungs, pus and postmortem material. The procedure is exactly similar to that adopted in the examination of feces.

To determine the presence of typhoid bacilli in the blood it is necessary to take about 5 c.c. from a vein and add to it a large quantity of sterile bouillon to neutralize the bactericidal substances present in the blood.

The determination of *B. typhosus* in water is not very satisfactory.

The above is an outline of the methods adopted in the campaign against typhoid in Germany.

It will be readily seen that in a civil population the practical difficulties are enormous. Isolation can not be carried out in many cases, and the disinfection of the urine and feces must be left in the hands of the individual himself, and whether the instructions are implicitly followed is at times questionable. So under these circumstances the progress must be slow. On the other hand, in the army it ought to be a simpler matter, because there the individuals are constantly under observation and discipline. It is a matter of common knowledge that to send a person harboring the parasites of disease back among a number of uninfected individuals is a sure method of lighting up fresh infection. The danger of typhoid infection is that the individual, although appearing perfectly well, may harbor the bacilli and so infect others. The point of importance to remember is that only by repeated bacteriologic examination of the feces and urine are we in a position to say when a man can safely return to duty without being a source of danger to his neighbors; and, further, only by this examination can the latent foci of the disease be discovered; these unrecognized harborers of the disease, the "bacilli carriers," are the chief means by which the disease continues to spread, in spite of all improvements in sanitation.

After these investigations have been continued for some time we get a valuable accumulation of scientific facts, which enables us to intelligently correct real hygienic faults.

It is an interesting fact that methods based on the same principles are employed in Germany to combat the spread of cholera, and our methods for the detection of the cholera vibrio are much more perfect than those for the *B. typhosus* in feces, because we have in peptone water an excellent "enriching" medium for the vibrio of cholera.

| | | |
|---------------------------------------|--------|----|
| University of Kentucky | (1904) | 75 |
| University of the South | (1904) | 75 |
| College of P. and S., Baltimore | (1902) | 79 |
| Medical College of Indiana | (1904) | 75 |
| Georgetown University | (1904) | 81 |
| College of P. and S., Atlanta | (1902) | 89 |
| Vanderbilt University | (1890) | 75 |

FAILED.

| | | |
|----------------------------|--------|------|
| Detroit Coll. of Med. | (1894) | 63.3 |
|----------------------------|--------|------|

New Hampshire January Report.—Dr. H. C. Morrison, regent of the State Board of Medical Examiners of New Hampshire, reports the written examination held at Concord, Jan. 9-10, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 23, of whom 14 passed and 9 failed. The following colleges were represented:

| | PASSED. | Year | Per |
|--|---------|--------------|-------|
| | | Grad. | Cent. |
| Illinois Med. Coll. | (1902) | 75.4 | |
| Jefferson Med. Coll. | (1905) | 78.7 | |
| University of Vermont | (1905) | 83.1, 83.7 | |
| Harvard Medical School | (1904) | 83.2; (1905) | 83 |
| Baltimore Med. Coll. | (1905) | 77.9 | |
| Medical School of Maine | (1903) | 80.1 | |
| Medico-Chirurgical Coll., Philadelphia | (1903) | 80.1 | |
| Dartmouth Medical School | (1905) | 78.2 | |
| College of P. and S., Boston | (1899) | 76.6 | |
| College of P. and S., New York | (1902) | 85 | |
| Roston University | (1896) | 97; (1903) | 85 |

FAILED.

| | | |
|---|---------|------|
| Kentucky University | (1904) | 64.1 |
| Laval University, Quebec, (1903) 66.8; (1904) 66.5, 70.6; (1905) 67.3 | | |
| Riboud Med. Coll., Montreal | (1901) | 66.7 |
| University of Maryland | (1905) | 73.8 |
| Maryland Med. Coll., Baltimore | (1904) | 68.9 |
| Harvard University | (1901)* | |

* No percentage given.

Oregon January Report.—Dr. Byron E. Miller, secretary of the Board of Medical Examiners of the state of Oregon, reports the written examination held at Portland, Jan. 2-4, 1906. The number of subjects examined in was 15; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 33, of whom 25 passed and 8 failed. The following colleges were represented:

| | PASSED. | Year | Per |
|---|---------|------------|-------|
| | | Grad. | Cent. |
| Bennett Med. Coll., Chicago | (1905) | 85.8 | |
| Pulaski University, New Orleans | (1901) | 80.8 | |
| Rush Med. Coll., (1881) 75.2; (1903) 82.6; (1904) 75.6, 79.2, 79.6 | | | |
| Medico-Chirurgical College, Kansas City | (1900) | 76.6 | |
| Harvard University | (1902) | 84.8 | |
| University of Helsingfors, Finland | (1897) | 90.6 | |
| Cooper Med. Coll., San Francisco | (1892) | 79.4 | |
| University of Oregon | (1905) | 77.9, 83.0 | |
| College of P. and S., Chicago | (1899) | 75.5 | |
| University of Iowa | (1904) | 78.4 | |
| University of Pennsylvania | (1903) | 82.5 | |
| American Med. Miss. Coll., Chicago | (1905) | 84.0 | |
| College of P. and S., New York, (1881) 80.6; (1901) 81.5; (1904) 76.4 | | | |
| Sacramento Valley Med. Coll. | (1902) | 78.7 | |
| Georgetown University | (1901) | 86.7 | |
| University of Michigan | (1904) | 85.9 | |
| Willamette University | (1905) | 76.7 | |
| University of Minnesota | (1904) | 81.1 | |

FAILED.

| | | |
|------------------------------------|--------|----|
| Toledo Med. Coll. | (1898) | 73 |
| Chicago Med. Coll. | (1884) | 73 |
| University of Vermont | (1905) | 67 |
| Detroit Coll. of Med. | (1896) | 74 |
| Barnes Med. Coll., St. Louis | (1894) | 74 |
| University of Oregon | (1905) | 68 |
| Willamette University | (1905) | 64 |
| Non-graduate | | 66 |

Wisconsin January Report.—Dr. J. V. Stevens, secretary of the Wisconsin Board of Medical Examiners, reports the written examination held at Milwaukee, Jan. 9-11, 1906. The number of subjects examined in was 15; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 19, of whom 10 passed and 9 were conditioned. The following colleges were represented:

| | PASSED. | Year | Per |
|---|---------|--------------|-------|
| | | Grad. | Cent. |
| College of P. and S., Chicago | (1904) | 88.6; (1905) | 87.8 |
| Wisconsin Coll. of P. and S. | (1905) | 81 | |
| Milwaukee Med. Coll. | (1905) | 86 | |
| Northwestern University | (1905) | 87.8 | |
| Rush Med. Coll. | (1905) | 85.6, 86.4 | |
| Detroit Coll. of Med. | (1904) | 79.3 | |
| University of Michigan, Homeo. Dept. | (1905) | 85.3 | |
| University of Minnesota | (1905) | 84.9 | |

CONDITIONED.

| | | |
|--|--------|--|
| College of P. and S., Milwaukee (2 candidates) | (1905) | |
| Queen's University, Ontario | (1905) | |
| Electric Med. Coll., New York | (1900) | |
| College of P. and S., St. Louis | (1905) | |
| Albany Med. Coll. | (1887) | |
| Northwestern University | (1905) | |
| Indiana Med. Coll. | (1905) | |
| Hahnemann Med. Coll., Chicago | (1905) | |

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Feb. 24, 1906:

Steer, Samuel L., asst.-surgeon, ordered to accompany Troops B and M, 3d Cavalry, from Fort Assiniboine, Montana, to Presidio of San Francisco. On completion of this duty Captain Steer will return to his station.

Reilly, John J., asst.-surgeon, retired from active service with the rank of captain, on account of disability incident to the service, to date from Feb. 4, 1906.

Walters, W. D., surgeon, leave of absence extended until such time as will enable him to rejoin station after return of the transport *Summer* to New York City.

Kirkpatrick, Thos. J., asst.-surgeon, left Fort Moultrie, S. C., on ten days' leave.

Kleider, Chas. F., surgeon, left Fort D. A. Russell, Wyo., on ten days' sick leave of absence.

Kunfer, E. L., asst.-surgeon, left Columbus Barracks, Ohio, with recruits en route to Fort Worden, Wash.

Eyars, Caspar K., contract surgeon, returned to Fort Sam Houston, Texas, from leave of absence.

Parkman, Wallace E., contract surgeon, returned to Fort Assiniboine, Mont., from leave of absence.

Marshall, John S., examining and supervising dental surgeon, left San Francisco for temporary duty at Honolulu, H. T.

Waddell, Ralph W., dental surgeon, left San Francisco for duty in the Philippines Division.

Wing, Frankal surgeon, relieved from duty at Fort Riley, Neb., and ordered to duty at Fort Omaha, Neb.

Lauderdale, Clarence E., dental surgeon, left Fort Logan H. Roads, Ark., and arrived at Fort Reno, Okla., for duty.

Robert, Michael A., contract surgeon, returned from temporary duty at Fort Schuyler, N. Y., to Fort Totten, N. Y.

Boyer, Arthur J., contract surgeon, left Fort Apache, Ariz., and arrived at Fort Huachuca, Ariz., for duty.

Reagles, James, contract surgeon, left Fort Yellowstone, Wyo., and arrived at Fort Keogh, Mont., for duty.

Royce, Robert J., contract surgeon, ordered from Kingsbridge, N. Y., to Fort Jay, N. Y., to accompany the 8th Infantry thence to Philippine service.

Cook, William H., contract surgeon, ordered from Gravesend, N. Y., to Fort Niagara, N. Y., to accompany the 8th Infantry thence to Philippine service.

Navy Changes.

Changes in the Medical Corps U. S. Navy, for the week ending Feb. 24, 1906.

Tyree, F. W., acting asst.-surgeon, detached from the Naval Training Station, San Francisco, and ordered to the Naval Recruiting Station, Kansas City, Mo.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Feb. 21, 1906:

Rosecan, M. J., P. A. surgeon, detailed to attend meetings of committee of American Bacteriologists in New York, N. Y., Feb. 24, relative to the standardization of tetanus antitoxin sera.

Moore, Dunlop, P. A. surgeon, relieved from duty at Yokohama, Japan, and directed to proceed to Honolulu, Hawaii, reporting to Chief Quarantine Officer for duty.

Currie, D. H., P. A. surgeon, department letter of July 27, 1905, amended so as to grant P. A. Surgeon Currie twenty-one days' leave of absence from July 18, 1905, instead of two months.

Burkhalter, J. T., P. A. surgeon, granted seven days' extra leave of absence from February 24.

Frissell, C. M., acting asst.-surgeon, granted twenty days' leave of absence from February 14.

Hallett, E. B., acting asst.-surgeon, granted five days' leave of absence from February 19.

Townsend, F., acting asst.-surgeon, granted seven days leave of absence from February 11.

Walerius, M., pharmacist, department letter of January 30 amended so as to grant Pharmacist Walerius thirty days' leave of absence from February 8, instead of February 15.

BOARD CONVENED.

Board of officers convened to meet at the bureau, February 27, for the purpose of making physical examination of an officer of the Regular Cutter Service in detail for the board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon J. W. Trask, recorder.

APPOINTMENT.

Albert J. Nite appointed acting assistant surgeon for duty at Fort Huron, Michigan.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ending February 23, 1906:

SMALLPOX.—UNITED STATES.

California: Los Angeles, Feb. 3-10, 2 cases; San Francisco, 13 cases.

Florida: Jacksonville, Feb. 10-17, 9 cases.

Georgia: Augusta, Feb. 12-19, 10 cases.

Louisiana: New Orleans, Feb. 10-17, 17 cases.

Maine: Biddeford, Feb. 10-17, 1 case.

Maryland: Baltimore, Feb. 10-17, 4 cases.

Michigan: Ann Arbor, Feb. 10-17, 1 case.

Missouri: St. Louis, Feb. 10-17, 3 cases.

Montana: Missoula County, Jan. 1-31, 1 case; Silverbow County, 1 case.
 Nebraska: South Omaha, Feb. 10-17, 2 cases.
 New York: Buffalo, Jan. 10-31, 1 case; New York, Feb. 10-17, 1 case.
 Ohio: Cincinnati, Feb. 9-16, 9 cases.
 Tennessee: Knoxville, Feb. 10-17, 1 case.
 Wisconsin: Appleton, Feb. 10-17, 2 cases; Milwaukee, Jan. 27-Feb. 3, 1 case.

SMALPOX—FOREIGN.

Brazil: Bahia, Dec. 8-30, 25 cases, 2 deaths; Pernambuco, Jan. 1-15, 43 deaths; Rio de Janeiro, Jan. 7-28, 15 cases, 1 death.
 Chile: Antofagasta, Jan. 18-Feb. 1, 34 cases, 17 deaths; Coquimbo, Jan. 18-Feb. 1, 3 cases.
 China: Canton, Dec. 25-31, 40 cases; Hong Kong, Jan. 6-13, 1 case; Shanghai, Dec. 30-Jan. 6, 1 case, 2 deaths.
 France: Paris, Jan. 27-Feb. 3, 12 cases.
 Great Britain: Bristol, Jan. 27-Feb. 3, 5 cases.
 Greece: Athens, Jan. 15-22, 1 death.
 India: Bombay, Jan. 16-23, 5 deaths; Calcutta, Jan. 6-13, 55 deaths; Karachi Dec. 26-Jan. 2, 3 cases; Madras, Jan. 13-19, 12 deaths; Rangoon, Jan. 6-13, 14 deaths.
 Italy: General, Jan. 25-Feb. 1, 39 cases.
 Mexico: Tuxpam, Jan. 31-Feb. 13, 5 deaths.
 Russia: St. Petersburg, Jan. 20-27, 5 cases.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, Jan. 7-28, 8 cases, 6 deaths.
 Ecuador: Guayaquil, Jan. 8-20, 20 cases, 12 deaths.

CHOLERA—INSULAR.

Philippine Islands: Manila, Dec. 23-Jan. 6, 5 cases, 5 deaths; Provinces, Jan. 11, present.

CHOLERA—FOREIGN.

India: Calcutta, Jan. 6-13, 11 deaths; Madras, Jan. 13-19, 1 death; Rangoon, Jan. 6-13, 1 death.

PLAGUE—INSULAR.

Philippine Islands: Manila, Dec. 23-30, 1 case, 1 death.

PLAGUE—FOREIGN.

Brazil: Pernambuco, Jan. 8-15, 2 deaths; Rio de Janeiro, Jan. 7-28, 9 cases, 1 death.
 Chile: Antofagasta, Jan. 18-Feb. 1, 2 cases, 1 death.
 China: Hong Kong, Jan. 6-13, 2 cases, 2 deaths.
 India: General, Jan. 6-13, 1,351 cases, 1,140 deaths; Bombay, Jan. 16-23, 31 deaths; Calcutta, Jan. 6-13, 16 deaths; Karachi, Dec. 26-Jan. 2, 9 cases, 7 deaths; Madras, Jan. 13-19, 4 deaths; Moulmein, Jan. 20, 1 death; Rangoon, Jan. 6-13, 18 deaths.
 Japan: Kobe, Dec. 9-Jan. 11, 36 cases, 30 deaths; Jan. 13-20, 3 cases, 2 deaths; Osaka, Dec. 9-Jan. 11, 73 cases, 62 deaths.
 Peru: Callao, Jan. 12-25, 1 case; Lima, 7 cases, 5 deaths; Mollendo, 6 cases, 2 deaths; Paita, 1 case; Trujillo, 25 cases, 10 deaths.

Book Notices

THE REAL TRIUMPH OF JAPAN: The Conquest of the Silent East. By Louis Livingston Seaman, M.D., LL.D., late surgeon-major U. S. V. E. Cloth. 291 pages. Illustrated. Price, \$1.50. New York: D. Appleton & Company, 1906.

In the dedication of this book is given the text on which the entire argument is based and which is directly in line with Major Seaman's efforts toward the abolition of the officialism which, he claims, renders ineffective in great measure the work of the undoubtedly able men in the medical department of the United States Army. The dedication reads as follows:

"To the medical and sanitary officers of the Japanese Army, who have proved that the normal condition of the soldier is health, and that those who die in war should fall on the firing line and not by the wayside from disease; to the heroic dead of that army, who have gladly given their lives for the honor and integrity of their beloved country; to that vast army of American dead, whose lives in war have been needlessly sacrificed through preventable diseases, ignorance and incompetency, and to our lawmakers, through whom the necessary reforms can come that will prevent the repetition of such sacrifice, these lines are dedicated."

Dr. Seaman quotes from the statistics of deaths from wounds and from disease in modern wars, demonstrating that in the Russo-Japanese war the ratio was more than reversed on account of the excellence of the hygienic regulations of the Japanese medical department. Sandwiched in between arguments for the reorganization of the Medical Department of the United States Army are interesting narratives of the author's experiences in Manchuria and Japan toward and after the close of the war. He pays especial attention to the system and practice of hygiene in the Japanese Army and gives a most interesting sketch of the history of medical science in Japan. He devotes a chapter to the discussion of beri-beri and its practical extinction in the navy through the researches and exertion of Baron Takaki, and closes with an appeal to the American nation that it should not forget the lessons of the War of the Rebellion and afterward of the Spanish-American War, but should

follow the example of Japan and be prepared to meet emergencies that may arise, with the greatest possible exercise of all that modern medical, surgical, and especially hygienic, science teaches.

A MEMOIR OF DR. JAMES JACKSON, with Sketches of his Father, Hon. Jonathan Jackson, and his brothers Robert, Henry, Charles and Patrick Tracy Jackson; and Some Account of Their Ancestry. By J. J. Putnam, M.D. Cloth. 119, 456. Price, \$2.50 net. New York: Houghton Mifflin & Co., 1905.

This will be considered a rather belated memoir when it is realized that forty years have elapsed since Dr. Jackson's death, and especially since he had attained to an advanced age when he died. But, while belated, it is none the less welcome, if for no other reason than that it is another addition to the literature that enlightens us regarding medical affairs at the time when American medicine was in the forming.

Dr. Jackson was one of the most influential of the physicians in and around Boston during the first quarter of the nineteenth century. While he wrote but little that has come down to us, or that left an impression on medical literature, he was one of those who influenced the affairs of his time and who molded professional and public opinion, not only for the then present, but for the future. He returned from his European studies in 1800, just at the time that vaccination was being introduced, and to him belongs the credit of being the first physician in this country to have absolute confidence in the Jenner theory. He had obtained this confidence from his experiences in the small-pox hospitals of London under Dr. Woodville, the enthusiastic follower of Jenner. Dr. Jackson was a contemporary with Dr. John Collins Warren, and the two were co-workers in many schemes for the betterment of the profession and for improved hygienic conditions of the public. These two were the leaders in the reorganization of the Massachusetts State Medical Society, Dr. Warren being the first president of the new society; and the Massachusetts General Hospital owes its inception to Drs. Warren and Jackson, the former having the credit for conceiving the idea. Thus in the memoirs before us we are carried back to those good old times that we all like to read about, to the time when character and integrity and hard work were the ideals. Nearly half of the volume is devoted to a history of Jackson's ancestors, and these and their times are described in an interesting, if not a charming, manner.

To those who love to read of men who have done things, and of the early history of our country, especially as it relates to medicine, these memoirs will be found both satisfactory and pleasing.

THE ART OF COMPOUNDING. A Text-book for Students and a Reference Book for Pharmacists at the Prescription Counter. By Wilbur L. Scoville, Ph.G., formerly Professor of Theory and Practice of Pharmacy in the Massachusetts College of Pharmacy. Third edition. Revised and enlarged. Cloth. Pp. 337. Price, \$2.50 net. Philadelphia: P. Blakiston's Son & Co., 1904.

Now that the physician is beginning especially to concern himself as to the character and composition of medicines, a book should be welcome which affords information as to how best to prepare many of the pharmaceutical mixtures extemporaneously. While the work is based on the eighth revision of the U. S. Pharmacopoeia and the official preparations are used as examples, most unofficial related classes are included with similar illustrations; thus, for instance, under "Miscellaneous External Preparations" are described cataplasms, fomentations, plaster-mull, plasma, escharotics, pastes, paints, collodion, drying liniments, glycerogelatin, pencils or crayons, salve pencils, spongiopiline and moxa. Specimen combinations are here given and they afford the physician an endless variety of prescription. There is, besides, much valuable information on writing prescriptions, incompatibilities, etc. In plasters, however, the author describes the commercial manufacturer of rubber plasters without referring to the far more valuable therapeutically official plasters made of the adhesive plaster of the new Pharmacopoeia, which any physician may use to advantage.

NERVOUS AND MENTAL DISEASES. By Archibald Church, M.D., Professor of Nervous and Mental Diseases and Medical Jurisprudence in Northwestern University Medical School, Chicago; and Frederick Peterson, M.D., President of the State Commission in Lunacy, New York. Fifth edition, revised and enlarged. Octavo, 937 pages, 341 illustrations. Cloth, \$5.00 net. Philadelphia: W. B. Saunders Co., 1905.

The preface states that practically no very material changes have been made in the arrangement or descriptive text, though the work as a whole has been carefully revised and many brief

interpolations made to improve the subject-matter. This is more strictly true of the section on nervous diseases. The changes are more notable in Dr. Peterson's section on mental disorders. In the former editions the old-style classification of the classic types of mania, melancholia, dementia, etc., was retained almost intact, notwithstanding the fact that the ideas of the Heidelberg school had already begun to tinge the ideas of many American psychiatrists. In this edition Dr. Peterson has included Kraepelin's species of "maniac-depressive" insanity and "dementia præcox," though not according them exactly the same limits and extension as is done by Kraepelin and his followers. He also retains the old forms of mania and melancholia, in which, especially as regards the latter, he will probably find many practical alienists in accordance with him. Dr. Adolf Meyer's elaborate essay on the recent problems of psychiatry is retained in this edition and furnishes a valuable exposé of the modern European views. The book as a whole will deservedly retain the public favor with which the former editions were received.

RADIOTHERAPY IN SKIN DISEASE. By J. Belot, with a Preface by L. Brocq. Translated by W. D. Buicher, M.R.C.S. Authorized translation from the Second French Edition, with thirteen plates and twenty-eight illustrations. Cloth. Pp. 463. New York: Rebanan Company, 1905.

The first part of this book is a historical review of radiotherapy; production of x-rays, including sources of electricity, the various currents, tubes, etc.; methods of exact measurement, and the theory of the Roentgen rays. Part II deals chiefly with the biologic effects of rays and the method of application. Part III takes up the treatment of various diseases. From the descriptions given, the apparatus and technic seem rather complicated. The quantities of rays used are expressed according to the units of the Holzknecht chromoradiometer. The work will be of more value to specialists in electrotherapeutics and dermatology than to the general practitioner.

AROUND THE WORLD VIA INDIA. A Medical Tour. By N. Senn, Ph.D., LL.D. Cloth. Pp. 347. Chicago: American Medical Association Press, 1905.

This book consists of a series of most interesting letters, written by Dr. Senn while traveling, which first appeared serially in *THE JOURNAL*. Beginning with Hawaii, Dr. Senn describes the manner and customs of the peoples, with diseases peculiar to the various countries visited. He writes instructively of the leper colony in Hawaii, giving an eloquent tribute to the work of Father Damien, and describes the condition of medical education in Australia and in India. He speaks highly of the work done by the men of the Indian Medical Service, especially in regard to research work in cholera and plague serums and antivenin. This book is well illustrated, showing characteristic people, buildings and scenery.

DEVELOPMENTAL PATHOLOGY. By E. S. Talbot, M.S., D.D.S., LL.D. First Edition. Cloth. 265 illustrations. Chicago. Published by the Author, 1905.

Dr. Talbot has gathered in this volume articles which he has written on various phases of the subject treated and which he has published from time to time in various medical and dental journals. The contents of the work indicate the extent of the author's research, not only in stomatology, but over a wide field of medical subjects, and embody the results of thirty years' labor. The subject of evolution was little understood thirty years ago, and these various articles prove the accord with that theory shown in most of the deformities of the human body.

LECTURES ON AUTOINTOXICATION IN DISEASE, OR Self-Poisoning of the Individual. By Ch. Bouchard. Translated with a Preface and New Chapters Added by T. Oliver, M.A., M.D., F.R.C.P., Professor of Physiology, University of Durham. Second Edition. Cloth. Pp. 342. Price, \$2.00 net. Philadelphia: F. A. Davis Co., 1905.

This book is about twice as large as the original volume by Bouchard which bore the same title. It has been rewritten by Thomas Oliver, who made the original translations. The new matter has been interpolated and added to the old. In its present form it contains the numerous additions which have been made to medicine in the field which it covers.

ATONIA GASTRICA (Abdominal Relaxation). By A. Rose, M.D., and R. C. Kemp, M.D. Cloth. Pp. 203. Price, \$1.00 net. New York: Funk & Wagnalls Co., 1905.

This work treats an important subject in a superficial way.

It would be of greater use to the general practitioner were there fewer digressions into the field of etymology. A large part of the book is devoted to reports of cases in which the patients were treated by a plaster bandage devised by one of the authors. Methods, new and old, of diagnosing this condition are briefly related.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Veronal.

Veronal as a hypnotic has come into use more and more within the past year or two, especially in the treatment of insomnia due to functional nervous disturbances, such as neurasthenia, hysteria, etc. It is best given in doses of from 5 to 7½ grains (.30-.50) each, and prescribed in the powder form. The sleep that it induces undoubtedly more nearly approaches the normal sleep than that produced by other hypnotics of the same class. Its advantages, therefore, lie in the fact that the usual drowsy feeling which the patient complains of during the day following the taking of bromids or sulphonal, are usually absent. In the experience of reliable authorities, patients state that the sleep thus produced is almost a natural sleep, and a refreshed feeling is observed after the patient awakens. With this preparation, as with all other hypnotics, however, there are a number of cases on record of poisonous effects produced by taking this preparation in too large doses. In *THE JOURNAL*, February 17, page 550, it is noted that poisoning from veronal took place after the ingestion of 4.5 grams (68 grains). The same symptoms of nausea, vomiting, headache and somnolence have been observed after the self-administration of 75 grains (5.00) of chloralamid by a patient who was endeavoring to secure sleep after a prolonged debauch. The preparation was the elixir of chloralamid, taken in teaspoonful doses every few minutes, which was probably because of the presence of the alcohol in the mixture.

The "Practical Medicine Series" recommends veronal in the treatment of insomnia due to epilepsy, general paralysis, neurasthenia and hysteria. It is recommended that it be given in warm water on retiring. Its action is rapid, and within half an hour a quiet, natural sleep, without disagreeable prodromal sensations, is experienced. The duration of sleep from administration of from 5 to 7½ grains (.30-.50) of this preparation was six hours. The patients, according to this authority, do not establish a toleration for the drug or become accustomed to it. The circulation and the digestive systems are not disturbed, and the secretions of the body show no modification. The precaution, however, is given of observing the state of the liver and kidneys before its administration. Spielmeier, in the same periodical, regards veronal as a hypnotic of value, given in gram doses (grains 15) at bedtime. Other authorities find its taste less disagreeable than that of chloral, paraldehyd or dormiol, and its action superior; at the same time, it does not show the cumulative action of sulphonal and trional. Patrick endorses this preparation as a very commendable one, and has used it a great number of cases, and has not observed an instance of decidedly unpleasant effects. He regards the dose of ½ gram (grains 7½) as sufficient in mild cases, and even 5 grains will be effective in such cases. He regards 15 grains as a dose which may be given without hesitation when it is deemed necessary, although he states that some somnolence and slight dizziness may be noted the following day. He quotes one case in which 30 grains were given by mistake, and the only ill-effect was very prolonged slumber, followed by some dizziness and uncertainty on the feet.

D. R. Brower usually prescribes it in doses of 5 grains (.30) each, and in preference to increasing the dose of veronal he

combines with it codein in doses of from 1/4 to 1/3 grain (.015-.02), and he prefers this preparation in the ordinary cases of insomnia to the bromids or even to chloralamid, which he formerly used in preference to the other hypnotics, on account of the fact that it had no depressing effects on the heart or circulation.

Gastric Ulcer.

In the treatment of gastric ulcer William Van V. Hayes, in the *New York State Journal of Medicine*, states that when there are repeated severe hemorrhages with cicatricial obstruction, or when there is a carcinoma engrafted on the ulcer, that a competent surgeon should be consulted. If the case is a medical one he recommends rest in bed, usually for four or five weeks, allowing a week or two, if possible, after the abnormal signs and symptoms are controlled. During the first few weeks of rest in bed the patient should not be allowed to sit up in bed for any purpose. The alimentation should be by the bowel, especially in the more severe cases. It is necessary to vary the food according to the needs of each particular case. In other cases milk may be given in quantities of from one-half to one glass every two hours. It should not be very hot nor ice-cold, and should be combined with two ounces of Vichy or lime water. If milk is not well tolerated, the whites of two eggs, beaten up with water, and two ounces of beef juice may be given alternately every two hours. This should be continued for a period of about ten days, until the symptoms are under control, when he recommends strained gruels, the fine wheat cereals or chicken broths, soft boiled or lightly poached eggs, and bread a day or two old. After a few weeks the patient may be allowed a general diet. Rectal feeding should be employed for one or two weeks in the hemorrhagic and severe cases. Cleansing enemata should be given one hour before the nutrient enemata are administered. The latter should be given through a long tube with side openings, and during its administration the patient's hips should be raised on a pillow. Pressure should be made against the rectum so as to retain the enema for twenty minutes, and the patient should be instructed to maintain the same position for from half to one hour. He recommends the following combination for nutrient enemata:

| | |
|----------------------------|------------------|
| Milk peptonized | 5 ounces. |
| Yolk of egg | 1 |
| Claret | 1 tablespoonful. |
| Prepared cereal food | 1 tablespoonful. |
| Salt | 15 grains. |
| Or Milk | 4 ounces. |
| Water | 1 ounce. |
| Eggs | 2 |
| Salt | 15 grains. |

The milk and egg in this preparation may be predigested with pancreatin, 5 grains, and sodium bicarbonate, 15 grains.

Place the receptacle containing this mixture in a wooden bucket containing water as hot as can be borne by the hand, and allow it to remain for one hour. One tablespoonful of arrowroot made into a paste may be added before predigestion.

Another combination similar to the following is recommended as an enema:

| | |
|--------------------------------|------------|
| Liq. peptones | 1 ounce. |
| Water or peptonized milk | 5 ounces. |
| Salt | 15 grains. |

If the bowel is irritable, from 3 to 5 minims of the tincture of opium may be added to each enema. In order to control bleeding from the stomach, if present, the nitrate of silver may be given in one-fourth grain doses in half an ounce of water, every morning when the patient awakes, for a period of about ten days, after which bismuth subnitrate may be given in 60-grain doses at bedtime, and continued, if necessary. To counteract the hyperacidity, which is irritating to the ulcer, the following combination is recommended by the author:

| | | |
|----------------------------------|----------|----|
| R. Bismuthi subcarbonatis | grs. iii | 20 |
| Sodii bicarbonatis | | |
| Magnesium bicarbonatis, aa. | gr. v | 30 |

Fiat pulvis No. 1. Sig.: To be given fifteen minutes after food.

In cases of severe hemorrhage, the essential treatment is absolute quiet, hypodermic injection of morphin sulphate, gr. 1/4, combined with atropin sulphate, gr. 1/150, and adrenalin chlorid (1:1,000), 30 drops, diluted in water and given by the mouth. An ice-bag or cold compress should be applied to the epigastrium. If necessary, one pint of warm normal saline solution may be given by the rectum or hypodermically. Nutrient enemata may be resorted to after twenty-four hours.

For the resulting anemia in these cases he prefers the liquid preparation of iron, that is, the tincture, in from 10 to 15 drop doses (.65-1.00), in albumin water, and taken through a tube three times a day.

Formaldehyd in Internal Diseases.

J. Zwilling, in an abstract in the *British Medical Journal*, recommends the administration of formaldehyd internally in cases of sore throat, catarrh of the bladder, erysipelas, scarlet fever and diphtheria. In almost every case favorable results were obtained. He recommends that it be given in the form of mint tablets, each of which contains 1 centigram of formaldehyd. In such a way the formaldehyd is set free in the mouth as the tablet dissolves, and exerts a direct disinfectant and bactericidal action, consequently it is well to instruct the patient to keep the tablets in the mouth as long as possible. He administered these tablets once every hour until five tablets were taken, when the interval between the doses was increased to two hours until the temperature became normal, and then one was given every three hours. This was the dose given to children of ages varying from 5 to 10 years. He speaks of administering it in ten cases of diphtheria as a substitute for the local treatment by disinfectant gargles, and in some of the milder cases antitoxin was not administered. In all these cases improvement was rapid and diphtheritic paralysis did not occur in any. He regards it as of value in the treatment of cystitis, which may be due to gonorrheal origin or spinal conditions.

Medicolegal

Osteopaths Are Practicers of Medicine.

The Supreme Court of Alabama says that the case of Ligon vs. State was tried on an agreed state of facts similar in all essential respects to the case of Bragg vs. State, 134 Ala., 165, in which it was held, June 28, 1902, that the practice of osteopathy was the practice of medicine within the meaning of the code provisions of that state. It says that the object of the appeal in this (Ligon) case was to have the Bragg case overruled. Counsel said, in brief: "It is respectfully submitted that on review of the point involved this court should not affirm the correctness of that decision, but should depart from it." The court's answer is that the decision in that (Bragg) case was unanimous. It covered all of the questions here involved, after careful and mature consideration. The court has re-examined it, and on reason and the authorities cited it has been unable to conclude that it is wrong. It should not, therefore, be overruled. The court can add nothing new in this decision to what was there said. To attempt it would be to go over the same grounds with inability to shed new light on them.

Liability of Wife for Medical Care of Husband.

The Supreme Court of Washington says, in the case of Russell vs. Grammann, an action brought by a physician, that a statute of that state provides: "The expenses of the family and the education of the children are chargeable on the property of both husband and wife, or either of them, and in relation thereto they may be sued jointly or separately." That ordinary medical aid and advice for the wife create family expenses has been repeatedly held. The husband is a part of the ordinary family, and under a statute providing in general terms for liability for "expenses of the family," as does the statute above quoted, the court sees no reason why medical and hospital services rendered to a husband are not as fully comprehended in the statute as are those rendered to a wife. Assuming that in this case the wife may not at any time have been with her husband in

the city of Spokane, where he had resided for about three years pursuing his occupation as a painter, it did not follow from that fact alone that the family relationship had in a legal sense been severed. It is not necessary that the husband and wife shall at all times reside together under the same roof in order that the legal status of the family may be preserved. It is a matter of common knowledge that many husbands in their struggles for a livelihood are often required to be far from home and for long periods of time, and that such enforced absences are in behalf of the family, in order that the comforts of life may be provided for them. Such absence may be a strong evidence of affection and regard for the family, rather than otherwise. It will not do to say that in such cases the family status is destroyed by somewhat continued absence of the husband.

Presumption of Death from Circumstantial Evidence.

The Supreme Court of Kansas says, in *Modern Woodmen of America vs. Gerdon*, that it is true that death may be proved by circumstantial evidence, and that absence for a considerable period of time is not indispensable in order to generate a satisfying conviction of the fact. But in all such instances the death of the absent party must fairly be demonstrated by the circumstances of the disappearance. If, for example, in connection with other facts showing a want of motive for absence, it should appear that the missing person was on a vessel which foundered or a train which was wrecked, or engaged in some hazardous enterprise, or met with an accident which might be expected to result fatally, or was exposed to perils incompatible with his age or the state of his health, or was afflicted with a fatal disease, or was mentally infirm, or was suicidally inclined, belief in the fact of death might be forced on the mind very soon after the disappearance. And in some cases the age, health, disposition, moral character, domestic relations, social rank and financial condition of one who suddenly disappears may themselves, without the aid of other circumstances, stifle all doubt that the person is dead. Such, at least, is the view of most of the courts of last resort. But in all the cases enumerated, lapse of time is in a measure a subsidiary matter. There must be a sufficient opportunity for investigation and search, and after the expiration of a period ample for those purposes further stretches of duration without tidings may confirm the inference of death. But the strength of the induction lies in the cogency of the circumstances of the disappearance and not in the fact of absence long protracted. The social aspects of our civilization have been almost revolutionized since the presumption based on the fact of seven years' unexplained absence was adopted. The presumption of death from absence can not have the strong probability of fact as its basis which formerly supported it, and persons who, for their own profit, assume the burden of establishing in courts of justice that the death of an individual has occurred have little excuse for urging their own isolated ignorance of his fate or his whereabouts as the principal item of their proof.

Power of Claim Agent to Employ Physician.

The Kansas City Court of Appeals affirms a judgment in favor of a physician, the plaintiff in the case of *Reynolds vs. C., B. & Q. R. Co.* It says that a passenger named Coffey was injured, May 20, 1902, in a wreck near Albany, Mo. The agent of the station caused him to be moved to a hotel in said town and sent for physicians to attend his injuries. About five days thereafter Coffey sent for the plaintiff, his family physician, to consult with the physicians already in attendance in reference to his treatment and removal to his home in King City. Previously, however, a stock agent of the railroad company had been to see Coffey and had consulted with the physicians in attendance, and had joined in the request of Coffey for the plaintiff for said consultation. The plaintiff treated Coffey for his injuries for about thirty days while he was at Albany, when he was removed to his home in King City, after which time he was his regular attending physician. On the 8th day of July one Wood, who claimed to have authority to adjust claims against the railroad company for personal injuries, saw Coffey at King City and made inquiries as to the kind of care he was receiving and the treatment that the plaintiff was administering to him. Wood saw Coffey more than once after he was moved to King City, at one of which times, when the question

came up who was to pay the plaintiff for his services, he said: "We pay all bills." At one time the plaintiff had a conversation with the station agent of the company at King City, in which he said to the agent that he was not satisfied with the progress made by Coffey and that he wished a consultation in the case. The agent referred him to Wood, and Wood came to King City. Coffey compromised his claim against the railroad company for \$2,500, but in so doing he did not include the medical bill of the plaintiff. At the time of the compromise the plaintiff was summoned to St. Joseph, where the compromise was consummated. He was sent for to confer with the company's general physician and surgeon and other physicians in reference to Coffey's injuries. Wood, for his services and expenses in that matter, as agent of the company, allowed and paid them. But in this case for services, as above stated, which resulted in a verdict in the plaintiff's favor for \$478, the railroad company contended that there was no evidence to show that Wood or any one else had authority to bind it for the payment of the plaintiff for his services so rendered. The court, however, says that the evidence here tended to show that said agent was acting within the scope of his authority when he employed and agreed to pay the plaintiff for his attendance on Coffey. The acts of said agent in visiting the injured, employing physicians and consulting with them in reference to their condition and treatment, taken in connection with the acts of the company in paying for the services of such physicians, was proper evidence to go to the jury, and was sufficient to support the finding that said Wood, when he employed and agreed to pay the plaintiff for his attendance on Coffey, was acting within the scope of his authority. The said Wood appeared to have been put forward as a general agent in looking after such persons, and was placed in a position where others were justified in the belief that his powers were general in that respect, and whatever restrictions there may have been imposed on said agent as between him and the railroad company could have no effect on the rights of third persons, who had no knowledge of the restrictions or limitations on his apparent authority. The court is of the opinion that, as agent of the railroad company to settle claims against it for personal injuries, he was within the scope of his authority in agreeing to pay the plaintiff for his services as physician for Coffey, and, as it was necessarily a part of the latter's claim for damages, it was immaterial whether this agreement to pay was made with the plaintiff or with Coffey, and it was also immaterial whether he employed the plaintiff to render the services in the first place.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia, Pa.

February 17.

- 1 *Puerperal Infection. E. McDonald, New York.
- 2 *Congenital Malformations of the Heart. A. G. Ellis, Philadelphia.
- 3 *Cleansing of Milk Vessels: Relative Value of Washing Powders. A. H. Stewart, Philadelphia.
- 4 *Facts About Eating. J. W. Achorn, Boston.
- 5 Typhoid Fever: How Can It Be Eliminated? J. L. Hedford, Syracuse, N. Y.
- 6 *Abscess of Antrum Causing Symptoms of Acute Articular Rheumatism. K. K. Wheelock, Ft. Wayne, Ind.

1. **Puerperal Infection.**—McDonald reports six cases of which a careful study was made. She found that while streptococcus infection is usually the most common and severe type of infection, other organisms, which usually produce clinically mild symptoms, may produce a severe type of this disease with a fatal termination. She urges that the term puerperal infection should be broadened to include infection elsewhere than in the uterus, and that the location and nature of such lesions should be recognized before any operative measures are undertaken. The presence of pathogenic micro-organisms in the genital canal is by no means sufficient evidence on which to base a diagnosis of puerperal infection.

2. **Congenital Malformation of Heart.**—Anoag 3,875 autopsies performed at the Philadelphia Hospital during the past

thirteen years Ellis found 46 cases of cardiac malformation. Four cases are described at length. One is a case of the rare condition of pectoral heart with divided sternum; the child was a full-term male and lived twenty-three and a half hours. A second case is one of transposition of the aorta and pulmonary artery, the child living thirty-four days. The third and fourth cases are instances of perforate interventricular septum and absence of anterior portion of auricular septum, respectively.

3. Cleansing of Milk Vessels.—Stewart commend a method which consists of washing the bottles and cans by a powerful stream of some hot washing powder solution with rapid solvent power pumped into the bottles, which are then rinsed with boiling water. This method cleanses 95 per cent. of the bottles perfectly. Stewart urges the establishment, under supervision of the bureau of health, of can-washing and cleansing buildings where all cans may be sterilized before they are sent to the farms. The advantages of such a scheme would be: 1, Saving of milk which is now destroyed by rapid fermentation due to infection from dirty cans; 2, saving of ice used to preserve milk which is eventually lost; 3, saving of time; 4, abolition of the use of preservatives; 5, saving of space for the storage of empty cans; 6, increased sale of milk due to restored confidence in its purity; 7, saving of the lives of thousands of children who are now fed on fermenting milk, the food value of which has been lost; 8, prevention of epidemics of dysentery and other milk-borne diseases.

4. Facts About Eating.—Achorn inclines to the belief that many conditions, such as arteriosclerosis, rheumatism, asthma, eczema, neuralgia, etc., are caused by overeating, by too much eating of one kind of food, by taking meals too close together, by nibbling between meals, by taking too much liquid during or immediately after eating, and by not chewing food sufficiently. No more food should be taken into the body than is required by the physiologic needs of the system.

6. Abscess of Antrum Causing Rheumatism.—Wheelock reports a case of pneumococcus infection of the antrum which was followed by general symptoms of acute articular rheumatism. The patient, a woman, had been suffering from a "cold in the head" with free discharge from the right nostril from the beginning of the attack. The frontal sinus was washed by means of a cannula, and on the following day she had a severe chill which was followed by rise in temperature and she was confined to her bed for twenty-four hours. Later she had severe pain in right knee, left elbow and shoulder. This pain and tenderness lasted about forty-eight hours. The second day following the chill the temperature was 100 F. From the first pus could be seen between the anterior end of the middle turbinate and the external wall of the right naris. Exploratory probe puncture was made and two teaspoonfuls of thick pus worked out, which showed pneumococci. Following the flushing of the antrum the naris was free from pus. Pain returned on the following day, when the antrum was again flushed and about one teaspoonful of pus brought away. Patient made a rapid recovery following the last lavage and regained the weight which she had lost during her illness.

Boston Medical and Surgical Journal.

February 15.

- 7 *Serious Head Injuries and the Indications for Operative Treatment. B. Sachs, New York.
- 8 Head Injuries. M. Prince, Boston.
- 9 *Indications for Operation in Head Injuries. W. N. Bullard, Boston.

7. Indications for Operative Treatment of Head Injuries.—As the result of an extensive personal experience with head injuries, Sachs has arrived at the conclusion that if there is an extensive injury to the skull, particularly in the parieto-temporal region, whether it be fracture or fissure; if there is evidence of splintering of the inner table, or of the presence of a foreign body or of persisting intracranial hemorrhage, operative interference is warranted at the earliest possible moment. (X-ray examinations and lumbar puncture are valuable diagnostic aids). In comminuted fracture of the skull the surgeon must decide whether or not the danger of infection is increased by surgical procedures. Surgical technic and surgical methods

should be developed to such a degree that the brain and skull will be handled with as much skill as are the abdominal viscera. In all cases, but especially in those in which external injury can not be considered the determining factor, the question of surgical interference must be decided on purely neurologic lines. Sachs does not approve of continuing the discussion of the differentiation between concussion, contusion and compression. He says that it is much more important to decide whether the brain has or has not been injured tangibly; and if injured, whether the site of the injury is on or near the surface; in short, whether or not it is accessible. If inaccessible, simple trephining may be resorted to, provided there are symptoms of increasing intracranial pressure which can not be relieved by lumbar puncture or by other simpler methods. Even if the injury is in an accessible region, it is best to adopt a conservative attitude and to determine whether we may trust to surgical skill rather than to the reparative powers of nature. Hemorrhages are often absorbed and many inflammatory processes recede more or less spontaneously. In determining the gravity of brain injury Sachs considers disturbances of cardiac and respiratory action, of vesical and rectal control, and the condition of consciousness as the most important symptoms. These are the manifestations of increasing intracranial pressure and of other serious injury. Recovery from coma, however slight, after twenty-four, forty-eight or seventy-two hours, is encouraging; deepening coma is of grave significance. The behavior of the pupillary reflexes is of no special value in deciding the question of operative interference. If the symptoms point to distinct focal lesion, although years may have elapsed since the initial injury, surgical measures must be adopted, providing only that the lesion be accessible. If the external injury points to one site and the symptoms to another, Sachs advises considering both, attacking the site of external injury first, but trying to reach the other as well.

9. Id.—In all cases of compound fracture of the external surface of the cranium in adults, Bullard advises immediate operation. In cases of simple fracture he considers it safer to operate in all cases in which there is clear external evidence of fracture, although in children it is sometime permissible not to operate when no symptoms exist. He also advises operating on all depressed fractures; in all cases in which symptoms of little meningeal hemorrhage exist; and when unconsciousness comes on after an interval of consciousness following injury to the head; in adults, whenever the unconsciousness after a severe injury lasts more than twelve hours, and when it is evident that the unconsciousness is due to the injury and not to other causes; when persistent unilateral convulsions follow injury to the head in an adult, provided that such convulsions never occurred previous to the injury and that no other cause for them exists. Inequality of the pupils occurring immediately or shortly after injury also is an indication for operation. Slow pulse, with other symptoms, is an indication for operation; rapidity of the pulse is not a contradiction, although weakness of the pulse may be.

Medical Record, New York.

February 17.

- 10 *Teacher's Part in the Tuberculosis Problem. S. A. Knopf, New York.
- 11 Necessary Principles in the Diagnosis of Surgical Conditions of the Upper Urinary Tract. J. B. Clark, New York.
- 12 Administration of Diphtheria Antitoxin and Performance of Intubation by the Department of Health of New York City. J. S. Billings, Jr., New York.
- 13 *Non-operative Treatment of Prostatic Hypertrophy. W. S. Reynolds, New York.
- 14 *A Factor in Perineal Lacerations. W. H. Shipps, Borden-town, N. J.

10. Teacher's Part in the Tuberculosis Problem.—Knopf calls attention to some of the particular duties devolving on teachers in the struggle against this disease which so essentially attacks the masses. The pupils should be taught to love fresh air. Ventilation of class rooms should be ample. When the site of the schoolhouse does not permit of the possession of large playgrounds, a roof garden, which can be covered in winter, is absolutely necessary. Heating and general ventilation of these rooms should be of the most improved kind. The walls and woodwork of the school room should be plain and

easily cleansed. All corners should be rounded and the walls painted. The school furniture should be so arranged that it can easily be moved so that the floors can be thoroughly cleansed after each daily session. The hygienic drinking fountain should replace the drinking cup. A well-equipped gymnasium and a swimming tank with constantly running water, suitably warmed, should be the property of every public school. Every pupil should be taught to swim and should be given the opportunity to bathe several times during the week. Knopf says that teachers may do more toward the prevention of tuberculosis by teaching the children under their charge how to breathe, sit, stand and walk properly than the entire number of physicians taken together can accomplish. He gives a number of rules which he advises teachers to have printed on leadlets to be read and reread by the pupils, and explained and commented on by the teacher. These rules include common methods of prevention of the transmission of tuberculosis and refer to such subjects as spitting, coughing, sneezing, cleanliness of finger nails, and so on. He calls attention to the proper feeding of school children, and advocates the offering of school lunches at moderate prices. He shows the great danger lurking in alcoholic drinks, including patent medicines, which are in such common use among the masses. An important point, he says, in the prevention of tuberculosis among school children is that the school teacher should be familiar with the subjective signs and symptoms of tuberculosis and the characteristics of the person disposed to consumption. He believes in weeding out the tuberculous child and the tuberculous teacher from the public schools, but he also believes that we should provide for these same patients, both teachers and children.

13. Non-Operative Treatment of Prostatic Hypertrophy.—Reynolds, while admitting the necessity in many cases, holds that the patient should not be urged to operation until proper systematic treatment has been tried. In catarrhal prostatitis he employs massage at sufficient intervals to free the glands and to relieve the congestion, unless contraindicated in cases in which interstitial changes have taken place in the prostatic tissues. All alcoholic drinks must be stopped, and a careful watch kept on the urine. He considers that the best remedy for relieving the congestion is nitrate of silver, the application to be made with a rubber catheter attached to a small syringe. The solutions should be mild at first and increased or decreased in strength according to the effect produced. If considered advisable for the patient to use the catheter himself definite instructions should be given him as to the manner of doing so, and the method of keeping it clean. He considers that in cases of this kind the patients may lead comfortable lives, well satisfied with their condition; so well satisfied, indeed, that operation will not be considered.

14. Factor in Perineal Lacerations.—Shippo explains why violent and uncontrolled expulsive efforts of the mother just prior to the birth of the child play an important part in the causation of perineal rupture. The patient is worn out with the exertion which she has been making for hours, and which she believes to have been futile. She is anxious to see the end of her sufferings, and, listening to the advice of her friends, she uses all her reserve force and strains with all the energy of which she is possessed. Shippo believes that too short a time is given, as a rule, for the physiologic softening and stretching of the tissues. In his practice he encourages the woman in labor, assuring her that though the pains she is suffering are apparently accomplishing little, they are in fact surely preparing the way for the birth of the child. He, moreover, warns her of the approach of the period just prior to the delivery, when all bearing-down efforts must cease. The integrity of the perineum remains intact in proportion as control over the last expulsive efforts of the patient is secured. Shippo operates in every case of laceration, except the most superficial.

New York Medical Journal.

February 17.

- 15 "Treatment of Cerebrospinal Meningitis. O. T. Osborne, New Haven, Conn.
- 16 Newer Views of the Principles of Infant Feeding and How They May Be Applied. H. D. Chaplo, New York.

- 17 Fracture of the Skull. G. T. Vaughan, Washington, D. C.
- 18 "Ossiculectomy Under Local Anesthesia in the Treatment of Chronic Suppurative Otitis Media. M. J. Ballin, New York.
- 19 Diagnosis of Chronic Urethral Discharges. S. L. Gans, Philadelphia.
- 20 Rheumatic Manifestations in Childhood. E. J. McDonough, New York.
- 20½ Ocularia. H. H. Roberts, Lexington, Ky.
- 21 Tapeworm Stimulating Appendicitis Recurrens. A. A. Gumbiner, New York.

15. Treatment of Cerebrospinal Meningitis.—According to Osborne, the treatment of this affection consists in diminishing congestion, in taking means to prevent or to relieve cerebral or spinal pressure, and in combating all acute symptoms and complications as they occur. He says that the administration of diphtheria antitoxin in cerebrospinal meningitis is theoretically unsound and practically a failure. Spinal puncture is indicated when there is cerebral pressure, but he is in doubt as to whether or not it is indicated for diagnostic purposes, except in rare instances. The almost constantly beginning sore throat should be treated with antiseptic gargles and sprays, none better, he thinks, than the hydrogen peroxid solution. Conjunctivitis should be treated with simple boric acid solution. A calomel or saline purge should be given, and painful joints should be wrapped with cotton and kept warm. Pain should be stopped with morphin, by the mouth or hypodermically, depending on the intensity. If the pain is not severe and there is no vomiting, and if the pulse is good, bromids or chloral may be administered for the first two or three days. To quiet cerebral excitement and delirium, and to intensify the action of the morphin which must be given, Osborne believes that there is nothing that will compare with ergot, given intramuscularly or subcutaneously. The frequency of its administration should be about once in six hours, unless there is great cerebral excitement or the pulse is bad. The ice-cap to the head and the spinal ice-bag are necessary. If the temperature is subnormal or the surface of the body is cold, dry hot applications are of advantage. The general care of the patient should be the same as in typhoid. Osborne is convinced that ice, ergot and morphin will save many patients from death from this disease. Alcohol, strychnin and quinin are contraindications, although the first two are permissible in an emergency.

18. Ossiculectomy Under Local Anesthesia.—Ballin believes that ossiculectomy may be performed in some chronic catarrhal conditions of the middle ear, especially when the hearing is greatly reduced, when the subjective noises are extremely annoying to the patient, and when all other means have failed. The operation is free from pain and is not accompanied by hemorrhage. The anesthetic used is a 1 per cent. solution of cocaine to which is added an equal part of a 1 to 1,000 adrenalin solution. Twenty to thirty minims are sufficient to bring about the desired anesthesia. The instruments used and the method of operating are described in detail.

St. Louis Medical Review.

February 10.

- 22 Operative Treatment of Chronic Nephritis. (To be continued.) R. Guiteras, New York.
- 23 Estimate of Current Medical Literature. L. F. Bishop, New York.

Lancet-Clinic, Cincinnati, Ohio.

February 17.

- 24 "Oration in Medicine, Ohio Valley Medical Association. J. B. Marvin, Louisville, Ky.
- 25 One Year's Experience with the Local Application of Adrenalin in Diseases of the Skin. A. Ravogli, Cincinnati.
- 26 "Cancer of the Rectum. E. B. Smith, Detroit, Mich.
- 27 Bright's Disease, Diabetes Mellitus and Pulmonary Tuberculosis. B. F. Felch, Chicago.
- 28 Bronchitis and Bronchopneumonia in Children. W. A. Wood, Gaitlin, Mo.

24. Oration in Medicine.—Marvin states that in his opinion the supreme test of the medical man is his possession of the ability to recognize disease in the individual and to treat it properly. Test-tube experiments, he says, should never outweigh bedside testimony. He states that Koch's discovery of the etiology of tuberculosis was epoch making, and that when he announced the discovery of tuberculin the medical world was on the tiptoe of expectancy. Behring's diphtheria antitoxin was discovered shortly afterward and since then many

serums have been presented to the profession, and many theories concerning the solution of the problem of infectious diseases have led astray even the elect. Many of these claims, Marvin says, are an abomination to science and a menace to educational progress. More recently the study of chemical products has been assiduously pursued, though unfortunately there has appeared to be some antagonism between the biologist, chemist and the clinician. Much of our literature has been burdened with laboratory jargon meaning anything or nothing, according to the reader's opinion. The manufacturing druggist and the dealer in proprietary drugs pander to our inordinate gullibility, and by the use of the name and garb of easily-coined pseudo-science lead many willing captives by the witchery of their eloquence and make some physicians facile fabricators of fiction and others quasi-indorsers of crass misrepresentations of chemistry and science. If we trust "the true-seeming lie," all that is necessary to compel Nature, however crippled, to resume labor and build up tissue, is to administer any one of a number of predigested, peptonized, malted or otherwise fake foods or pretentious tissue-builders, claiming to be competent therapeutic foods without the intervention of digestive effort; or some chemical compound so nearly protoplasmic as to build tissue itself without Nature's co-operation or consent. The trend of medical research, Marvin believes, is along the line of pathology, but the clinician should follow closely in its wake. Care and exactness in diagnosis are of prime and fundamental importance. A diagnosis may be etiologic, clinical or pathologic—in other words, an opinion based on the specific cause of disease in an individual case. Etiology and pathology have been unduly magnified and therapeutics is in danger of being forgotten. It has been claimed, but not corroborated, he says, that the various serums represent an era of specific therapeutics, but we must still use some of the empiric remedies. The claim is made that by the use of some favorite intestinal antiseptic—the golden calf of the manufacturing pharmacist—typhoid fever may be aborted or its course shortened. If physicians would carry their pathology with their therapeutics to the bedside, and realize that typhoid fever is more often a general bacteriemia than an intestinal disorder, and that in 80 per cent. of the cases the specific bacillus can be found in the blood, they would realize the absurdity of the claim that any of the so-called intestinal antiseptics can exert any appreciable influence over the twenty or more feet of intestine and the entire blood stream. Because glycerin is hygroscopic, it is but the counterfeit of science to claim that a paste of glycerin and fine clay applied hot to the chest will have any effect on a pneumonia, no matter how learnedly the manufacturing chemist may talk about osmosis. The injection of some fluid of unknown composition in tuberculosis smacks of quackery. A tyro in chemistry would laugh to scorn the claims about nascent chlorine and ozone. Water—the cheapest and commonest thing in Nature—is bottled, and the price of wine is paid for it, and we imagine it cures Bright's disease and diabetes. These are but examples of therapeutic optimism which needs to be shunned as much as therapeutic nihilism. In the treatment of disease the tendency is to over-treatment and meddlingness. In a disease that is self-limited and running generally a short course, the skill of the physician is taxed, and while prompt and energetic treatment may be necessary to save life, useless drugging and agencies applied internally, over-feeding and over-stimulation and over-handling or over-nursing are fraught with great danger. Fresh air, digestible food in small amounts, sleep—tired Nature's sweet restorer—and the treatment of symptoms as they arise are the beacon-lights in the management of this disease. The physician is the most misunderstood of men. Medicine is an art, a profession, and can not be judged by the standards of trade or business. If Nature be but evolution, mere cause and effect, she neither kills nor cures; she can be guided or misguided by the physician. In matters of life and health the physician utilizes or combats the forces of Nature. His best energies are always directed toward inhibiting the various conditions from which he gains his livelihood. He has no patents or trade secrets, no proprietorship in anything his colleague may not use for the benefit of humanity. He strives

to prevent disease, to perfect measures to alleviate suffering, and through his societies, the medical press and libraries open to the public, he teaches the layman how best to dispense with the services of the physician. The physician should be a public servant as well as the servant of the individual. He is the apostle of health and healthfulness. He is the conservator of peace and happiness of society, the trustee of the health of the community.

26.—See abstract in THE JOURNAL, Nov. 4, 1905, page 1434.

Annals of Surgery, Philadelphia.

January.

- 29 Preservation of the Nerve Supply to the Brow, in the Operative Approach to the Gasserian Ganglion. H. Cushing, Baltimore.
- 30 *Operative Treatment of Cleft Palate. C. H. Peck, New York.
- 31 Acute Edema of the Lungs Secondary to Ether Narcosis. V. C. Pedersen, New York.
- 32 Excision of Portions of the Chest Wall for Malignant Tumors. E. Hixford, San Francisco, Cal.
- 33 Non-parasitic Cysts of the Spleen. C. A. Powers, Denver.
- 34 Perforation of the Gall Bladder. A. MacLaren, St. Paul, Minn.
- 35 *Value and Place of Duodenoduodenostomy in Gallstone Surgery. J. C. Hancock, Dubuque, Iowa.
- 36 Constriction of the Duodenum Below the Entrance of the Common Duct and Its Relation to Disease. A. J. Ochsner, Chicago.
- 37 *Anomaly of the Duodenum Resulting in Death After Gastroenterostomy. J. G. Mumford, Boston.
- 38 Resection of Intestine, Followed by End-to-End Anastomosis. E. Elliot, Jr., New York.
- 39 *Transverse Incision for the Removal of the Appendix. G. G. Davis, Philadelphia.
- 40 Radical Cure of Direct Inguinal Hernia. Id.
- 41 *Radical Cure of Severe Femoral and Inguinal Hernia. J. H. Nicoll, Glasgow.
- 42 *Radical Operation for Inguinal Hernia. J. R. Eastman, Indianapolis, Ind.

30. Operative Treatment of Cleft Palate.—Peck calls attention to certain points in technic which aid in securing prompt surgical closure of the cleft with a minimum amount of damage to the muscles of the soft palate. He believes that children of 6 or 7 years of age are the most favorable subjects for operation from the purely surgical standpoint. The very serious disadvantage is that habits of speech are already formed and the defect in pronunciation is more difficult to overcome. Peck invariably uses the hanging head, Rose position, intermittent ether anesthesia with an open cone, and the Whitehead gag. He never resorts to preliminary tracheotomy and does not believe that it should ever be necessary. The special instruments used are the Whitehead mouth-gag, a very slender knife for transfixing the edge of the flap, paring and splitting the edge of the uvula; a long, slender pair of mouse-tooth forceps; a strong, straight scalpel for making the lateral incisions; a thin, blunt periosteal elevator, slightly curved on the flat; a sharply curved Deschamps' handle-needle for passing the heavier sutures, and his own special needle-holder and needles for the fine sutures. The edges are pared by transfixing the edge of the soft palate with a very fine, sharp knife and cutting first forward to the anterior angle of the cleft, then backward, bringing the knife out at the base of the uvula; the strip removed should be as narrow as possible to avoid waste of tissue, but the full thickness of the flap. The mucous membrane of the uvula is then split on its inner border, i. e., facing the cleft; it easily separates to give a sufficient raw surface and all of the tissue of the rudimentary half of the uvula is saved. The denudation is repeated on the opposite side of the cleft. The lateral incisions are now made, commencing opposite the last molar tooth close to the border of the gums and carried forward to a point opposite the anterior extremity of the cleft, but taking great care to leave a broad anterior pedicle to the flap for nutrition. This incision falls external to the posterior palatine foramen and the main trunk of the artery as it runs forward; the branches are first divided, the main trunk being usually torn by the periosteal elevator. In clefts running forward through the alveolar process Peck prefers to leave the extreme anterior end of the cleft for later closure rather than endanger the nutrition of the flaps by prolongation of the lateral incision and narrowing of the pedicle. The curved periosteal elevator is then inserted in the lateral incision, and hugging the bone, is forced carefully through into the cleft; by lateral sweeps

the entire flap is quickly separated, including the muco-periosteum at the anterior angle of incomplete clefts. Posteriorly the instrument is strongly carried outward and backward along the posterior margin of the hard palate, and to a great extent detaches the palatine aponeurosis and the mucous membrane on the nasal aspect of the velum from the bone. In the majority of cases hemorrhage soon ceases to be troublesome after this blunt separation; posterior branches of the descending palatine artery remain uninjured for nutrition of the posterior portion of the flap, even after very free separation with the raspatory. The inner edge of the flap is then seized with mouse-tooth forceps at the base of the soft palate, i. e., where the muscular pull concentrates, a thin, straight bistoury is inserted through the posterior part of the lateral incision, and cutting outward and backward as traction on the flap is made toward the median line, the detachment of nasal mucous membrane and palatine aponeurosis from the posterior border of the hard palate is completed, and by a careful sawing motion enough of the mucous membrane of the nasopharynx is divided to allow the edges of the flap to fall to the median line without tension. Few, if any, of the fibers of the bellies of the levator or tensor palati are cut. The palatine aponeurosis which receives the insertions of the tensor and levator is completely detached from the posterior border of the hard palate as far outward as the base of the hamular process, together with the mucous membrane on the nasal aspect of the soft palate, allowing the velum to drop downward. This aponeurosis with its muscular insertions remains in the flaps. In cases of wide cleft, tension on the flaps is still caused by the shortened salpingo-palatine fold of mucous membrane running upward and backward on the lateral wall of the pharynx along the belly of the levator palati. Peck says that free division of this fold by gently tearing with the finger or snipping with blunt curved scissors as traction is made on the flap downward and inward to make it prominent, is easily accomplished without damaging the muscles, and effectually relieves tension. All this can be done without unduly narrowing the bridge of tissue behind, or endangering the nutrition of the flap. By this time the hemorrhage has nearly ceased and the flaps are ready for suture. Beginning close to the base of the uvula, sutures of iron-dyed silk, No. 6, are passed on the Deschamps's handle needle through the entire thickness of both flaps at a sufficient distance from the edge to guard against cutting through; these are left untied until the last is passed, four or five being usually sufficient, placed from one-fourth to one-third of an inch apart. They are then tied in order, with a surgeon's knot, usually beginning with the posterior stitch, the ends being left long for the time. Intermediate stitches of iron-dyed silk, No. 3, are then placed between each of the heavier stitches, and two or three in the uvula itself, the last at its tip or even on the nasal aspect. They are passed on the very fine special needles with the eye in the point, carried on the special needle-holder; they include only part of the thickness of the flap, are closer to the edge, are tied immediately and insure accurate apposition of the edges, such as is aimed at in all fine plastic work. Five to seven of these are used, making in all ten or twelve sutures. The long ends of the heavier sutures are used for traction and steadying the flaps during the passage of the fine sutures, especially in bringing the uvula forward. Each, as it has served its purpose, is cut short. In the treatment of the lateral incisions Peck uses a device suggested by C. H. Mayo; a piece of white tape is passed around both flaps through the lateral incisions, drawn just tight enough to approximate the flaps slightly and guard against tension, and secured by a silk ligature. The ends are cut short and slip around to the nasal surface of the flaps. This is left in place seven days and serves for drainage as well as for the relief of tension.

35. Value of Duodenocholedochotomy.—Hancock states that in favor of duodenocholedochotomy for gallstones in the lower end of the common duct are: (a) the avoidance of drainage some cases in which one would not otherwise wish to sew up the wound in the duct and close the abdomen; (b) the greater ease in sewing the duodenal than the duct incision by virtue of size and proximity of the former; (c) uniformly kindly

healing of intestinal wounds; (d) easy and natural access to common duct; (e) ease and benefit of dilatation of papillary orifice in insuring better drainage of bile and detritus;• (1) duct may be safely incised for half an inch in extracting stone or in enlarging the orifice for drainage. Against the procedure has been raised the common prejudice against opening the gut in general, the fear of fistula which occurred in but two out of 62 cases, and the dread of infection which, as indicated above, has been vastly overated in regard to the upper half of the intestines. In neoplasm of the papilla this route is clearly indicated for diagnosis and treatment when the growth is amenable to local treatment and the gall bladder can not be used for anastomosis or drainage. In total stenosis of the papillary orifice, whether from neoplasm or trauma of stones, a choledochoduodenostomy could be done with the incision employed in duodenocholedochotomy, where the anastomosis could be made low down in the common duct. In pancreatic stone a duodeno-pancreo-lithotomy is an established procedure and for good anatomic reason is the method of election.

37. Anomaly of Duodenum.—Mumford cites the case of a young man who had suffered severely with gastric symptoms for five years. It was obvious that he had a greatly dilated stomach. An immovable mass about the size of a pigeon's egg could be felt in what was thought to be the pyloric region. It was assumed that this mass was of inflammatory origin and a drainage operation was advised. On opening the abdomen Mumford found that a large part of the pyloric portion of the stomach was greatly thickened, and was held up to the liver by strong and dense adhesions. On turning up the omentum, colon and stomach and searching for the jejunum, Mumford found that that portion of the gut did not spring from the ligament of Treitz on the left crus of the diaphragm, but from the right crus. In other words, the fixed duodenum ended on the right of the spinal column. Little was thought of this anomaly at the time. A short-loop posterior gastroenterostomy was done, the opening in the stomach being made as near the pylorus as possible, and the opening in the jejunum about three inches from the ligament of Treitz. All went well until the fifth day after the operation, when the patient complained of some epigastric uneasiness. Later on the same day he underwent a sudden and violent paroxysm of severe abdominal pain, associated with profound and alarming collapse. Death ensued on the sixth day. The autopsy disclosed the abdominal cavity flooded with gastric contents. A large rent was found in the fundus of the stomach.

39. Transverse Incision in Appendectomy.—Davis employs two incisions, each being designed to avoid wounding arteries, and to make the appendix easily accessible. For easy cases the incision is made directly transverse, one and a half inches long. Its center is to be on the semilunar line on a level with the anterior superior spine. The aponeurosis of the external oblique is divided in the line of the skin incision, but obliquely to the direction of its fibers. The fibers of the internal oblique and transversalis muscles are parted—not cut—in the same line as the structures above. The peritoneum is then opened and the incision carried inward through first the anterior layer of sheath of the rectus. A blunt retractor three-quarters of an inch wide is then inserted and the muscle drawn toward the median line. This exposes the transversalis fascia and peritoneum posteriorly which are then also divided. This is obtained a triangular opening with its base of three-quarters of an inch and two sides of about an inch long, which is ample for simple cases. If the case is a difficult one, the outer end of the incision is prolonged to the anterior spine or even above and inwardly through the sheath of the rectus to within an inch of the median line. This will give an opening from four to five inches long, according to the size of the patient, sufficiently large to insert the hand if necessary, and through which the appendix can be extracted under almost all circumstances. In cases in which drainage is necessary, the drain is brought out at the angle of the wound and lies close to the bony anterior superior spine and passes through the thick muscular mass of the internal oblique and transversalis, all of which insures against the formation of a hernia at that point. The inner portion of the wound is protected absolutely

against hernia by the rectus muscle, and to its outside there are the thick internal oblique and transversalis muscles beneath, and above them the aponeurosis of the external oblique. Davis says that the division of the external oblique aponeurosis obliquely instead of parallel to the direction of its fibers may be urged as an objection, but this is more than compensated for by the better access which is afforded. No hernias have come under his observation even in suppurative cases.

41. **Radical Cur of Severe Femoral and Inguinal Hernia.**—The method of operating described by Nicoll is applicable to both femoral and inguinal hernia. Its main features are: (a) the employment of the sac to form an intra-abdominal buttress over the internal aspect of the hernial opening or ring; (b) the use of the pubic ramus as a *point d'appui* in the process of closure of the hernial canal, and (c) the additional security of closure obtained by the superposition on the bone sutures of a plane of fascial sutures. The technic of the operation is as follows: Obliteration of the sac, also of the peritoneal depression over the abdominal aspect of the ring, and the substitution of a buttress over the internal aspect of the ring. The sac is exposed and cleared from surrounding tissues (the skin incision may be vertical or transverse). It is then opened longitudinally in its middle line, cleared of its contents, and separated from parts surrounding its neck, including the transversalis and the iliac fascia, for one inch round the abdominal aspect of the ring. Next, the sac is bisected longitudinally from fundus to neck, and an aperture is made in one half near the neck, and the halves are interlocked by putting the other through the aperture. In certain cases it lies better if previously twisted one-half turn on its longitudinal axis. Next, the whole sac is reduced through the femoral ring into the extraperitoneal space previously cleared for it by detaching its neck from the abdominal aspect of the ring. The sac thus lies bunched up within the abdomen, between the peritoneum and the transversalis and iliac fascia over the internal aperture of the femoral canal. When the sac is unnecessarily large part of it may be cut away before reducing it through the canal. An incision is carried (bone deep) from the femoral vein along the pubic ramus to the region of the pubic spine. This divides the pubic portion of the fascia lata, the origin of the pectineus, and the periosteum. Its length depends on the extent to which the femoral vein has been displaced outward by the presence of the hernia. The periosteum is then detached to a limited extent and retracted. The bone is drilled near its upper edge in two places, from one-half inch to one inch apart (one drillhole may be made to suffice). Through one of the apertures a loop of stout catgut or other absorbable ligature is passed, either by threading it in the eye of a curved surgical needle, or by pushing it through, simply doubled on itself. It is, however, more easily passed by threading it in the eye of the bone drill or in the eye of an ordinary surgical probe. For the purpose Nicoll employs a special probe in which the eye is small and placed very near the extremity of the handle. The loop of ligature is divided and one end is threaded in a large curved surgical needle and passed as a mattress suture through Poupart's ligament. Unthread it from the needle, repeat this with the second end, carrying it through Poupart's ligament at a higher level, avoiding the deep epigastric artery to the outer side, and, in male patients, the spermatic cord above. By means of the probe (into the eye of which the ends are threaded), both ligatures are withdrawn through the second drillhole in the bone. The ends of each loop are tied separately over the front of the bone, thus bringing Poupart's ligament down to the postero-superior surface of the bone and fixing it firmly in contact with that surface, constituting what is in effect an extension outward of Gimbernat's ligament, and absolutely closing the femoral ring to whatever extent may be desired, due regard being paid to the amenity of the femoral vein. The degree of occlusion is regulated by the position of the sutures in Poupart's ligament, but not by the tension with which they are tied. This latter does not vary, the knots being tied in all cases firmly to bring the ligament into contact with the bone. To make the closure doubly secure the operation is completed by uniting, by interrupted catgut sutures, the detached margin of the pectineal origin and the

pubic portion of the fascia lata to the "anchored" Poupart's ligament.

42. **Radical Operation for Inguinal Hernia.**—Eastman has devised a method for introducing a single tier of non-absorbable sutures which coapt all the layers either according to Ferguson's or Bassini's methods. These sutures may be removed easily after firm union has taken place. In 11 cases Eastman has used heavy Pagenstecher celloidin linen. The manner of introduction of the sutures is simple. After incision down to the aponeurosis of the external oblique, exposing both rings, the overlying superficial tissues should be wiped with gauze from the aponeurotic layer to such an extent that Poupart's ligament may be freely exposed. After reduction of its contents the sac should be twisted on itself, as practiced by C. H. Mayo, so that all the slack of the peritoneum about the neck of the sac may be taken up before the transfixing suture is introduced. The Pagenstecher linen suture, bearing a needle on each end, is first passed through Poupart's ligament from without inward one inch from its free margin. It is then passed through the outer border of the internal oblique and transversalis muscles and brought back through Poupart's ligament about one-third of an inch nearer the margin of this ligament than its first point of passage. The needle, now external to and above Poupart's ligament, is made to overlap the free margins of Poupart's ligament and the aponeurosis of the external oblique by carrying the linen through in the form of a simple running mattress suture. The needle is next passed through the superficial fascia, panniculus adiposus and skin, emerging about one-eighth of an inch from the skin-wound margin on the side opposite Poupart's ligament. The needle on the tail end of the suture is brought up through the subcutaneous fat and skin on the side of Poupart's ligament. When traction is made on the two ends of the suture no kinks or curls remain, and the suture is tied up as a simple loop and, being clipped, may be drawn out with the slightest traction.

St. Paul Medical Journal.

February.

- 43. Music as a Therapeutic Agent. J. Knott, Dublin, Ireland.
- 44. Endocarditis in Children. T. Lowe, Pipestone, Minn.
- 45. *Fracture of the Clavicle. E. King, Felda, Minn.
- 46. Surgical Technic. C. P. Thomas, Spokane, Wash.

45. **Fracture of the Clavicle.**—King has employed a number of dressings for fractured clavicle and finding none of them quite satisfactory, he now applies the following in most of his cases: Having removed the clothing from the chest, he applies a zinc oxid strip, of length and width suitable to the patient's size, placing the initial end at the inferior angle of the scapula, running it upward and outward over the top of the shoulder on the affected side, down under the axilla and then transversely across the back around the body to the midsternal line. The object of this strip is to fix the scapula, which King regards as the most important point in any method of dressing. Then he puts on a second strip, beginning at the free border of the ribs anteriorly, running it up over the tilted end of the inner fragment and down the back to several inches below the scapula. This assists in overcoming the pull of the sternomastoid. In suitable cases, when the patient is lean in flesh, small, tightly wadded rolls of cotton may be placed in the supraclavicular and infraclavicular fossae before this second strip is applied; they will act as splints to the clavicle. Pads in the axilla, large and hard enough to overcome the inward pull of the pectorales and scapular muscles, can seldom be borne on account of pain and pressure symptoms; however, a small pad of gauze and cotton is useful in absorbing sweat and odor. A snugly fitting undergarment may now be put on. The dressing is completed by placing the hand and arm in proper position and applying a snugly fitting Velpeau bandage.

Interstate Medical Journal, St. Louis, Mo.

January.

- 47. *Annual Medical Progress Number.

47. **Annual Progress Number.**—For several years it has been the custom of this journal to review the progress made in medicine during the preceding year. The present issue con-

sists of 216 pages. The department of internal medicine, conducted by Dr. J. S. Myer, is devoted entirely to a consideration of some of the recent literature on diseases of the stomach. Dr. W. Bartlett, in charge of the department of surgery, devotes considerable space to physiologic surgery. Dr. A. E. Taussig discusses the contributions to laboratory diagnosis, particularly the methods dealing with the diagnosis of gastrointestinal affections. Dr. W. Baumgarten, in charge of the department of therapeutics, reviews the advances made in serum therapy and roentgenotherapy, and also mentions the agitation against the evil of nostrum vending. The departments of pediatrics, pathology and bacteriology and obstetrics and gynecology, orthopedics, neurology and psychiatry, genitourinary surgery, laryngology and otology, dermatology and syphilis, and ophthalmology are also well taken care of by those in charge, making this issue a most valuable one for those who wish to know of the progress made in all departments of medicine.

Journal of Experimental Medicine, New York.

January.

- 48 Effect of Eosin on Tetanus Toxin and on Tetanus in Rats and Guinea-Pigs. S. Flexner and H. Noguchi, New York.
- 49 Physiology of Heart-block in Mammals, with Especial Reference to the Causation of Stokes-Adams Disease. J. Erlanger.
- 50 Effect of Changes in Temperature on the Viscosity of the Living Blood. R. Burton-Opitz, New York.
- 51 Experimental Cirrhosis of the Liver. R. M. Pearce, Albany, N. Y.
- 52 Experimental Arteriosclerosis. R. M. Pearce and E. MacD. Stanton, Albany, N. Y.
- 53 Certain Thermostable Venom Activators. H. Noguchi, New York.
- 54 Multiple Non-Inflammatory Necrosis of the Liver with Jaundice (Hepar Necroticum Cum Ictero), and to the Knowledge of Cell Degeneration and Cytolysis in General. H. Certei, New York.
- 55 Neutoma Embryonale of the Choroid Plexus of the Cat. H. S. Steensland, New York.
- 56 Studies on the Toxicity of the Bile. S. J. Maltzer and W. Salant, New York.
- 57 Constituent of the Bile Causing Pancreatitis and the Effect of Colloids on Its Action. S. Flexner, New York.
- 58 Carbohydrate Group in the Nucleoprotein of the Spleen. P. A. Levene and J. A. Mandel, New York.
- 59 A Crystalline Body Obtained on the Prolonged Digestion of Gelatin. P. A. Levene, New York.
- 60 Gastric Ulcers in Rabbits Following Resection of the Pneumogastric Nerves Below the Diaphragm. W. Ophüls, San Francisco, Cal.

50. Effect of Temperature on Viscosity of Living Blood.—To solve the question of whether or not it is possible to alter the viscosity of the circulating blood by changing the temperature of the surrounding medium, Burton-Opitz performed a series of experiments on dogs in accordance with the method described by Huertl. Six experiments in all were made, three with warm (44 C.) and three with cold water (23 C.). The experiments proved conclusively that the viscosity of the blood reacts very sharply to changes in the temperature of the surrounding medium. The viscosity is decreased by warm and increased by cold water baths. Warm water baths also produced a decrease and cold water baths an increase in the specific gravity of the blood. On the other hand, it was found that hot air baths render the blood more viscous and that they also increase the specific gravity of the blood, just the opposite of the result obtained with warm or cold water.

51. Experimental Cirrhosis of the Liver.—The experiments performed by Pearce demonstrated that the reparative process which follows the widespread necrosis of the dog's liver caused by the injection of hemagglutinating serum constitutes a chronic interstitial hepatitis of definite and constant character. This is not only a new type of experimental hepatic lesion, but is more definitely a cirrhosis than is any other experimental lesion hitherto described. It is of importance in explaining the histogenesis of cirrhosis, and incidentally various repair processes in the liver, but it does not aid in the elucidation of the etiology of cirrhosis in man, nor does it explain the peculiar arrangement of the new connective tissue in any form of human cirrhosis, except, possibly, that associated with chronic passive congestion. It definitely demonstrates, however, that cirrhosis may follow extensive primary destructive lesions, a view not yet fully accepted, and supports the contention of Kretz that cirrhosis is essentially a reparative process.

Colorado Medical Journal, Denver.

January.

- 61 Tuberculosis in the State Institutions of Tennessee. W. J. McMurray, Nashville.
- 62 Rational Way to Treat, or the Use of Common Sense in the Treatment, Management and Prevention of Tuberculous Diseases. J. C. Lefflardy, Savannah, Ga.
- 63 Methods of Treatment of Tuberculosis. A. C. Foster, Morgantown, Ky.

Fort Wayne Medical Journal-Magazine.

January.

- 64 Status of Venereal Diseases. G. Van Sweringen, Ft. Wayne.
- 65 Foreign Bodies in the Eye; Complications Produced; Treatment. A. E. Bulson, Jr., Ft. Wayne.

Illinois Medical Journal, Springfield.

January.

- 66 Charitable and Penal Institutions of Illinois. C. S. Deneen, Springfield.
- 67 Economic Aspect of the Modern Treatment of Tuberculosis. J. W. Pettit, Ottawa.
- 68 Sanatorium Treatment of Tuberculosis in Colorado. G. W. Holden, Denver.
- 69 Ignorance as a Cause of Disease and Disaster. D. Lewis, Chicago.
- 70 Alcohol and the Mind. C. L. Hamilton, Dwight.
- 71 Some Special Phases of Ear Cases. J. B. Taylor, Bloomington.
- 72 Ulcer of the Stomach. W. E. Guthrie, Bloomington.

Medical Sentinel, Portland, Ore.

January.

- 73 Practical Side of Infant Feeding. R. J. Marsh, Portland.
- 74 The Medical Profession. B. A. Cathey, Corvallis, Oregon.
- 75 Placenta Praevia. T. O. Boyd, Twin Falls, Idaho.
- 76 Oregon Practically an Unorganized State. J. N. McCormack, Bowling Green, Ky.

California State Journal of Medicine, San Francisco.

January.

- 77 Relation of the Nitrogenous and the Carbonous Metabolism in Disease. A. B. Taylor, San Francisco.
- 78 Spirochaeta Pallida. S. Blum, San Francisco.
- 79 Relation of Bacteria to the Development of Gallstones. A. J. Lartigue, San Francisco.
- 80 Radical Cure of Umbilical Hernia. A. W. Morton, San Francisco.
- 81 Further Data on the Chest Shape in Tuberculosis. W. Hutchinson, Redlands.

Louisville Monthly Journal of Medicine and Surgery.

January.

- 82 Thoracic Resection for Tumor Growing from the Bony Wall of the Chest. W. O. Roberts, Louisville.
- 83 Erysipelas. D. O. Hancock, Henderson, Ky.
- 84 Osler's Nonscissure. D. L. Field, Jeffersonville, Ind.
- 85 Modification of Earl's Pile Clamp. O. E. Bloch, Louisville.
- 86 Solving Problems in Diseases of Children. W. Wormley, Philadelphia.

Journal of the Mississippi State Medical Association,

Vicksburg.

January.

- 87 Medical Evolution Since 1860. V. M. Neal, Hillsboro.
- 88 Removal of Ovarian Tumor Complicated with Carcinoma of Stomach—Cocain Anesthesia. W. W. Crawford, Hattiesburg.
- 89 President's Address Before Leflore County Medical Society, February 6, 1905. Greenwood. S. A. Eggleston, Shell Mound.
- 90 Pneumonia. L. B. Sparkman, Cleveland.
- 91 Empyema. D. W. Jones, Fernwood.

Chicago Medical Recorder.

January.

- 92 Differential Diagnosis Between Some of the Serious Sequelae of Purulent Otitis Media. F. Allport, Chicago.
- 93 Coxa Vara Adolescentium. W. Blanchard, Chicago.
- 94 Prognosis in Heart Disease. F. S. Johnson, Chicago.
- 95 Tuberculin and Antituberculosis Serum. R. C. Whitman, Chicago.

American Journal of Urology, New York.

January.

- 96 Hysterical Anuria. E. Garreau and J. W. Carney, Boston.
- 97 Tumors of the Bladder, with Particular Reference to Sarcoma. M. Loewenheim.
- 98 Nephropostosis from the Gastroenterologic View Point. R. C. Kemp, New York.

The Postgraduate, New York.

January.

- 99 Case Presenting the Clinical Features and Blood Findings of Pernicious Anemia: Recovery. A. F. Chase, New York.
- 100 When and How Shall Uterine Fibromyomata Be Operated On. J. N. West, New York.
- 101 Injuries of the Eye Following Paraffin Injection in the Nose. W. Hithoft, Breslau.
- 102 Final Report on the Russell Treatment of Pulmonary Tuberculosis. T. W. Bickerton and D. M. Barstow, New York.

Virginia Medical Semi-Monthly, Richmond.

January 12.

- 103 Volvulus Testis. R. C. Brock, Richmond.
- 104 Some of the Difficulties of Diagnosis and Operation in Diseases of the Biliary Tract. W. P. Carr, Washington, D. C.
- 105 Quinsy and Its Sequelae. J. Dunn, Richmond.

- 106 Principles of Surgery. S. McGuire, Richmond.
107 Quinsy; Its Diagnosis and Treatment. C. M. Miller, Richmond.
108 Goller. R. D. Garcin, Richmond.

New York State Journal of Medicine.

January.

- 119 What Organized Malpractice Defense Does for the Profession and the Public. J. T. Lewis, New York.
120 Macroscopic Diagnosis and General Indications for Treatment of Cancer of the Larynx. J. N. Mackenzie, Baltimore, Md.
121 Carcinoma of the Larynx. D. B. Delavan, New York.
122 Mediastinal Tumors. W. F. Campbell, Brooklyn, N. Y.
123 Protection of the New York Milk Supply. W. Benseil, New York.
124 Relations of Appendicitis to Diseases of the Uterine Adnexa and Vice Versa. H. P. Jack, Canisteo, N. Y.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

January 1.

- 115 Tuberculous Kidney Disease. M. C. Millet, Rochester, Minn.
116 Congenital Dislocation of the Hip. E. S. Geist, Minneapolis.
117 Syphilis of the Liver and Its Operative Treatment. A. MacLaren, St. Paul.
118 Bladder Extrophy. R. C. Dugan, Eyota, Minn.

January 15.

- 119 Present State of Our Knowledge Concerning the Therapeutic Value of the X-Ray. B. Foster, St. Paul.
120 Diagnosis of Gallstone Disease. G. G. Etzel, Minneapolis.
121 Renal Decapsulation in Chronic Bright's Disease. L. F. Schmauss, Mankato, Minn.
122 Interstitial Uterine Fibroma. J. W. Little, Minneapolis.

Southern California Practitioner, Los Angeles.

January.

- 123 Symptomatology of Nephritis. G. L. Cole, Los Angeles.
124 Trachoma—Its Causes and Diagnosis. H. B. Ellis, Los Angeles.
125 Displacement of the Uterus and Its Treatment. J. D. Shorb, Los Angeles.
126 The Worm-Doctor Fuke. A. Davidson, Los Angeles.
127 Splenectomy. H. B. B. Montgomery, Los Angeles.
128 The Pioneer Doctors of Los Angeles. H. D. Barrows, Los Angeles.

Virginia Medical Semi-Monthly, Richmond.

January 26.

- 129 Management of Normal Labor for the Prevention of Puerperal Infections. H. Old, Norfolk, Va.
130 Pathologic Aspect of Puerperal Infection. E. C. S. Tallaferro, Norfolk.
131 Surgical Aspects of Puerperal Infections. L. Gwathmey, Norfolk.
132 Some Uses of Pelvic Massage. J. T. Johnson, Washington, D. C.
133 Diagnosis of Nephrolithiasis. C. D. Kellam, Norfolk.
134 Pneumogastric Cough. C. P. Jones, Newport News, Va.

Pennsylvania Medical Journal, Athens, Pa.

January.

- 135 Address in Obstetrics. E. B. Everitt, Philadelphia.
136 *Adaptation of the General Public to the Principles and Practice of the Prevention of Tuberculosis. H. S. Anders, Philadelphia.
137 *Diagnosis of Incipient Pulmonary Tuberculosis. G. W. Norris, Philadelphia.
138 *Sanatorium Treatment of Tuberculosis. G. B. Kaib, Erie.
139 *Outdoor Life Versus Confinement in the Treatment of Bone Tuberculosis. H. A. Wilson, Philadelphia.
140 Sanatorium Treatment for the Indigent Tuberculous. B. H. Detweiler, Williamsport.
141 Results of Timely Employment of Diphtheria Antitoxin. I. N. Snively, Philadelphia.

136-139.—See abstract in THE JOURNAL, Oct. 21, 1905, page 1271.

Medical Fortnightly, St. Louis.

January 10.

- 142 Treatment of Neurasthenia. C. K. Mills, Philadelphia.
143 Gonorrhea and Some of Its Results. E. G. Ballenger, Atlanta, Ga.
144 Parturient Sepsis. C. E. Ruth, Kokook, Iowa.
145 Nerves of the Genital Tract. B. Robinson, Chicago.
146 Mucocollitis. W. T. Knox, Manchester, Ill.

Kansas City Medical Index-Lancet.

January.

- 147 *Psychopathic Manifestations of the Non-Insane Psychoneurosis. J. Puntun, Kansas City.
148 Appendicitis; with Death from Complications. H. C. Crowell, Kansas City.
149 Surgery of Typhoid Fever. St. E. Sanders, Kansas City.
150 Inactivation or Prolapse of the Distal End of the Ureter in the Bladder. R. Robinson, Chicago.

147.—This article appeared in THE JOURNAL, Dec. 2, 1905.

Journal of Mental Pathology, New York.

- 151 Reflex and Automatic Excitability. S. Sergi, Rome, Italy.
152 Neurasthenia and Neuro-Hyperesthesia of Grocco. P. Timpano, Roma, Reggio Calabria.
153 Electric Sleep: An Experimental Study with an Electric Current of Low Tension. L. G. Rohlovitch, New York.

Journal of the South Carolina Medical Association, Charleston.

January.

- 155 Pathogenic Protozoa. G. McF. Mood, Charleston.
156 Diagnosis of Disease Resultant on Lesions in the Vascular System. W. P. Cornell, Charleston.
157 Appendicitis. A. B. Baker, Charleston.

Journal of Medical Research, Boston, Mass.

January.

- 158 Critical Review of the Literature on Experimental Variola and Vaccinia in the Monkey. W. R. Brinkerhoff and E. E. Tyzzer.
159 Histology of the Skin Lesions in Variella. E. E. Tyzzer.
160 Case of Pott's Disease in the Monkey. E. E. Southard, Boston.
161 Experimental Work in Relation to Micrococcus Rheumaticus and Streptococcus Pyogenes. J. M. Beattie.
162 New Colony Counter and Dissecting Microscope. A. H. Stewart, Philadelphia.
163 Cystic Aplasia of the Cerebral Hemispheres in an Idiot Child. W. N. Bullard and E. E. Southard, Boston.
164 Experimental Myiasis in Goats, with a Study of the Life Cycle of the Fly Used in the Experiment. F. C. Wellman, Benguela, Angola, West Africa.
165 Methods for the Localization of Potassium and Phosphorus. M. Tracy, New York.

Texas Medical News, Austin.

January.

- 166 Pseudo-Bulbar Paralysis, Asthenic Type. J. S. Wooten, Austin.
167 When to Operate in Appendicitis. H. B. Hill, Austin.
168 Rheumatism as a Factor Entering into Eye and Throat Diseases. C. Joves, Ft. Worth, Texas.
169 The Country Doctor. W. S. Christian.

Women's Medical Journal, Toledo, Ohio.

January.

- 170 Non-operative Treatment of Prolapse of the Uterus. K. C. Mead, Middletown, Conn.

Buffalo Medical Journal.

January.

- 171 Non-tuberculous Joint Lesions. R. O. Meisenbach, Buffalo.
172 Tetanus. E. M. Coss, Buffalo, N. Y.
173 Pulmonary. M. C. Breuer, Buffalo.
174 Treatment of Coughs. N. G. Price, Newark, N. J.

Texas State Journal of Medicine, Fort Worth.

January.

- 175 Organization and Its Advantages to the Individual Doctor. J. N. McCormick, Bowling Green, Ky.
176 Tuberculosis in Texas Penitentiaries. E. E. Guinn, Jacksonville.
177 Influence of Heredity, Training and Environment on Mentality. W. F. West, Waxahachie, Texas.
178 Cause of Ununited Fractures. R. W. Knox, Houston.
179 Injuries at the Elbow Joint. O. L. Norsworthy, Houston.
180 Case of Abdominal Pregnancy. S. R. Burroughs, Buffalo.
181 Removal of Submerged Facial Tonsils. F. D. Boyd, Ft. Worth.
182 Plea for the Earlier Recognition and Removal of Uterine Cancer. J. H. Reuss, Dallas.
183 Complete Removal of the Tonsils. W. B. Howard, Dallas.
184 Tuberculosis Oculi Verrucosa. J. B. Shelmire, Dallas.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

February 3.

- 1 Acute Bone Disease in Children. E. Owen.
- 2 *At What Age Should a Cleft of the Palate Be Closed? R. W. Murray.
- 3 Closure of Gaps in the Skull. J. H. Tringle.
- 4 Aural Cases in General Practice. S. Paget.
- 5 *Indications for Operation in Chronic Suppurative Disease of the Middle Ear. W. S. Syme.
- 6 Some Varieties of Hernia in Children. E. S. Carmichael.
- 7 X-Ray Treatment of Ringworm. G. Siegel.
- 8 Does Diachylon Affect the Infant When It Fails to Produce Abortion? R. Heelis, F. H. Jacob and S. R. Trotman.
- 9 When to Operate for Cleft Palate.—Murray prefers, as a general rule, to postpone operating on the palate until the child is between 2 and 3 years of age, and then to close the cleft completely at one operation. At that age there is more tissue to work with and it is generally possible to fashion a good, soft palate and uvula by paring the edges of the cleft and uniting them in the middle line. Excess of cicatricial tissue is thus obviated, for union takes place by first intention. The powers of articulation also are improved.

3. Closure of Gaps in Skull.—Pringle favors filling gaps in the skull with celluloid plates after the method devised by Fraenkel. Of six patients so treated, three operations were successful and two failed, the plate requiring to be removed because of sepsis. The sixth patient had two plates inserted; one healed in well and the other had to be removed because of

sepsis extending from the nasal cavity. Of the three successful cases, one patient has worn the plate for eight years, and the remaining two patients have worn theirs for more than three and a half years.

5. **Indications for Operation in Suppurative Middle Ear Disease.**—The objective signs mentioned by Syme as indications for operation are: 1. Pain on pressure over the mastoid, or more particularly over the antrum. This may or may not be accompanied by postauricular swelling. 2. A sinus behind the ear leading to an erosion in the bone. 3. Caries of the petrous bone. 4. An extensive or recurring growth of granulation tissue, pointing to invasion of the bone. 5. Facial paralysis. 6. The presence of thick, cheesy masses in the tympanic cavity, the inference being that the same condition exists in the antrum. 7. Very foul smelling discharge. 8. Stenosis of the meatus, either membranous or bony, either or both of which may be due to the irritation caused by the purulent discharge. 9. Persistent discharge in spite of regular and thorough antiseptic treatment. The subjective phenomena to be considered with regard to the advisability of or the necessity for operation are pain, vertigo, change in the hearing, and all symptoms which point to the impending onset or to the actual consummation of an intracranial infection. Syme says that in the larger proportion of cases of chronic otorrhea the patients do not show, at the time they present themselves for treatment, any of these indications. In such cases the ordinary antiseptic treatment with, if necessary, the rectification of an intranasal or pharyngeal condition, or in certain cases ossiculotomy, should be given a trial. If these measures do not affect a cessation of the disease within a reasonable time, its continuance should then be taken as a strong indication for radical operation.

The Lancet, London.
February 3.

- 9 The Acute Abdomen. W. H. Battle.
- 10 "Placenta Prævia. R. Warren.
- 11 "Points in the Treatment of Heart Failure in Diphtheria. C. Bolton.
- 12 "Eucalyptus Oil as a Vermifuge in Ankylostomiasis. L. P. Phillips.
- 13 Aberrant Vaccinia. M. E. Paul.
- 14 Study of Mental Fatigue in School Children. J. Bellel.
- 15 A Case of Glanders. L. Woodcock.
- 16 Rupture of the Uterus, with Illustrative Cases. T. Wilson.
- 17 "Dermoid Tumor of the Mediastinum in a Child Aged Two Years. G. Carpenter.
- 18 Uniform Lineal Growth of the Human Fetus. R. C. Roberts.

10. **Placenta Prævia.**—Warren reports a series of 94 cases in which six mothers died, or 6.3 per cent., while of 93 infants 49 died, or 52 per cent. As regards parity, of the 76 cases in which it is mentioned 12 were primiparæ whilst 36 had had five labors or more previously. None of the primiparæ died, which is a matter of some interest, since King in his series found the mortality of primiparæ to be 30 per cent., the general mortality in his collection being 22 per cent. Twin labors occurred twice in the series, of which three infants and one mother died. Recurrence in one case is noted in the three preceding labors. Hydramnios was reported in 4 cases, 2 of these being of the 10 cases seen personally. Prolapse of the cord happened in 3 cases out of 54 in which the de Ribes bag was not used, and in 4 cases out of 40 in which it was used. Postpartum flooding was noted in 14 cases, in 4 of which the placenta was adherent; adherence of the placenta was found in 2 other cases without postpartum hemorrhage. There seems to be a peculiar tendency for a placenta with a low implantation to become adherent. In 2 cases of postpartum hemorrhage there was atony of the uterus; both died. One case of puerperal melancholia is recorded. In one group of 27 cases only such minor steps as rupturing the membranes or giving ergot were taken. There was no case of complete placenta prævia in the group. In 6 other cases bipolar version was the treatment adopted. Twenty-one patients were treated by internal version or manual delivery in the case of pelvic presentations. Of the 21 mothers 5 died, and of the 22 children 14 died. Forty patients were treated by the insertion of the de Ribes bag. None of the mothers died; 25 of the infants died.

11. **Treatment of Heart Failure in Diphtheria.**—Bolton speaks of the value of the early administration of antitoxin in sufficiently large doses as a preventive of heart failure.

12. **Eucalyptus Oil in Ankylostomiasis.**—Phillips' plan of treatment is as follows: About 6 p. m. the patient takes a saline purge and then fasts all night. On the next morning he takes half of the following mixture, taking the remaining half an hour later:

| | | |
|-------------------------|----------|----|
| R. Olei eucalypti | 3ss | 2 |
| Chloroformi | gtt. xlv | 3 |
| Olei ricini | 3x | 40 |

In young boys and in feeble anemic patients the dose is divided into thirds and given at twenty-minute intervals. The dose can be repeated every second day. In 44 cases of ankylostomiasis the treatment was wholly successful. In 21 cases a single dose was sufficient, and in 16 cases two administrations were necessary. Phillips is convinced that the treatment is satisfactory with reference to its vermifuge effects.

17. **Dermoid Tumor of Mediastinum.**—Carpenter reports a case of this nature which occurred in a female child 2 years old. About a year before he first saw her she became languid, contracted a cough and subsequently developed pneumonia. At this time the chest was noticed to be bulging. She could not lie down, her respirations were accelerated, and she complained of pain in her side. When admitted to the hospital she was cyanosed and there was sucking-in of the lower intercostal spaces, mostly on the left side. The right side of the chest, in front, was dull from apex to base. On the left side, in front, there were dullness and tubular breathing above and below the clavicle. On the right side, behind, the chest was absolutely dull. The liver was displaced downward and there was a distinct depression between the liver and the costal margin. The radiograph which was taken at that time showed that the whole of the right side was opaque to the rays. The child died shortly afterward, and a postmortem examination was made. In front of the right lung was a mass the size of a fist. On incising this from six to eight ounces of clear fluid escaped. Inside the cyst was some cheesy material with a few hairs lying at the bottom. The rest of the tumor felt hard, although it consisted of a considerable number of cysts, most of which contained a gelatinous material of a light brownish color.

The Practitioner, London.
February.

- 19 Normal Daily Temperature, Variation and Its Modifications in Pulmonary Tuberculosis. J. J. Galbraith.
- 20 "Sterilization of the Hands. R. A. Stoney.
- 21 "Foreign Bodies in the Uterus. J. E. Iellier.
- 22 Food Factor in the Paroxysmal Neuroses. F. Hare.
- 23 Chorea Gravidarum. J. S. Shelli.
- 24 Some Aspects of Pelvic Appendicitis. G. G. Turner.
- 25 Tissue Metabolism of Phthisis Pulmonalis, Albumosuria, and the Thoracic Indices of Phthisis. A. S. Parkinson.
- 26 Recent Reports Concerning Endotheliomata and Peritheliomata. A. Carless.
- 27 "Fibroid Tumor of the Vagina. G. F. B. Stimpson.

20. **Sterilization of Hands.**—The results of experiments have convinced Stoney that it is possible to render the hands sterile or at least free from pathogenic bacteria by a simple and short method which does not require more than ten minutes. Therefore, the wearing of gloves during the performance of an aseptic operation is not necessary, though Stoney thinks it is advisable in the case of those operators whose skin is either unusually difficult to sterilize or easily injured by the constant use of antiseptics. The method employed by Stoney is as follows: 1, Scrubbing with a sterilized nail brush in hot water (as hot as can be borne) with carbolio soap for five minutes, several changes of water being used; 2, rubbing thoroughly with sterile gauze wet with methylated spirit; 3, immersion for one minute in a watery solution of biniodid of mercury (1 to 1,500). In every case the hands, instruments, silk, etc., were rinsed in sterile water in order to remove any excess of antiseptic which might interfere with the growth of organisms in the culture tubes. In all cases the hands were tested while wet and sufficient force was used both with the silk ligatures and scraper to remove a visible amount of epithelial debris.

21. **Foreign Bodies in Uterus.**—The foreign body in the uterus in the case reported by Iellier was an ordinary hairpin which the patient had introduced into the uterus. One point of the pin projected from the middle of the posterior lip of the uterus just above the surface of the mucous membrane, and

the other point could be felt under the mucous membrane at the junction of the cervix to the posterior vaginal wall. Removal was accomplished by drawing down the uterus, exposing the posterior prong with a snip of the scissors, then drawing down both prongs as far as they would come, and straightening out the pin, after which it was easily withdrawn.

27. Fibroid Tumor of Vagina.—The tumor in the case reported by Simpson measured $5\frac{1}{4}$ inches round the circumference. 2 inches longitudinally, $1\frac{3}{4}$ inches transversely, was tense in consistence, and not tender on pressure. The mass was covered by mucous membrane, which had become eroded at one point, leaving a round grayish area the size of a sixpence, and coated with a greenish-yellow secretion. The tumor was attached by a broad base, and springing from the left wall of the vagina just within the ostium vaginae, and growing distinctly outward. The left tumor was free from all sides of the vagina except the left, and the examining finger could be passed into the vagina beyond it more easily above and to the right of the swelling. The mucous membrane covering the tumor was incised vertically and dissected off backward, until access was obtained to the attachment of the tumor, which was discovered to be occupying the left lateral aspect of the vagina. On microscopic examination the main mass of the tumor was found to consist of fibrous tissue, more or less intermixed with plain muscle fibers. In some places the fibrous tissue predominated, in others the muscle cells were more numerous. On the whole, the two elements, fibrous and muscular, were fairly equally mixed, with perhaps a slight predominance of fibrous tissue.

Annales de l'Institut Pasteur, Paris.

Last indexed page 309.

- 28 (XIX, No. 12.) Sensibilisation spécifique dysentérique dans le sérum des animaux vaccinés et des malades. C. Dopter.
- 29 Sérums Hémostatiques. L. Rémy.
- 30 Sur l'origine intestinale de l'anthraxose pulmonaire. P. Vansteenkiste and G. Geyse.
- 31 Essais de culture du bacille lépreux. P. Emile-Well.
- 32 Différenciation du "Bacillus putrificus" (Bleustock) et des bacilles anaérobies tryptobutyriques (Achalme). A. Rodella.
- 33 Sur une éruption choroïdienne localisée, d'origine manifestement hydrique. Brau (Salgon).
- 34 Action des microbes vivants sur la solution de bleu azur dans l'alcool méthylique. F. Marino.

Presse Médicale, Paris.

- 35 (XIII, No. 103.) Day Nurseries in Factories.—Les crèches industrielles. Bue.
- 36 *Nasopharynx et tuberculose pulmonaire. H. Bourgeois and Ducos.
- 37 Bromatologie clinique des légumineuses. A. Martinet.
- 38 (No. 104.) *Syphilis et Myopie. F. De Lapersonne.
- 39 Transportation of the Wounded on the Field.—Transport des blessés en campagne. Bonnet.
- 40 Les léchithines et le lait (and milk). A. Fournier.
- 41 (No. 105.) Recherche des oeufs de parasites de l'intestin dans les matières fécales. M. Leculle.
- 42 La transplantation des veines et ses applications chirurgicales. Etude expérimentale. Alexis Carrel (Chicago).
- 43 (XIV, No. 1.) Satire de Paracelse contre les médecins. Laiguel-Lavastre.
- 44 La storaine. P. Reclus.
- 45 La scoliose infantile. P. Desfosse.
- 46 Les hydrates de carbone chez les diabétiques. A. Martinet.
- 47 (No. 2.) *Sur quelques albuminuries de la grossesse (pregnancy). V. Wallich.
- 48 Day Nurseries in Hospitals for Children.—Les crèches de nourrissons dans les hôpitaux d'enfants. Leçon d'hygiène infantile. H. Méry.
- 49 Immunisation active des jeunes bovidés contre la tuberculose (of calves). Guérin (Lille).
- 50 (No. 3.) Grains pullulans simulant des oeufs de parasites dans les matières fécales. A. Chauffard.
- 51 Présence du *Spirochaeta pallida* dans le sang des syphilitiques. L. Nattan-LARRIER and A. Bergeron.
- 52 (No. 4.) Lésions nerveuses et tuberculose cavitaire chez le nourrisson (in infants). L. Lortat-Jacob and G. Vitry.
- 53 Les modifications anatomiques après la réduction non-sans-plant de la luxation congénitale de la hanche (of hip joint). J. Gourdon.
- 54 *Insuffisance spermatique et insuffisance diastématique. P. Ancel and P. Boulon (Nancy).

36. Nasopharynx in Tuberculosis.—Bourgeois and Ducos discuss what they call "pseudo-atrophic coryza" in the tuberculous. It was found constantly in the advanced and very frequently in the incipient cases. Ducos is inclined to regard it as part of the general predisposition to tuberculosis, and urges the necessity for treating and curing it, especially in the incipient stages of tuberculosis.

38. Syphilis and Myopia. De Lapersonne thinks that myopia, whatever its degree and whatever the age of the patient,

should always suggest the necessity for a general examination. It is not enough to prescribe the proper glasses. The general condition should be examined and also the past record of infections, especially syphilis, inherited or acquired. If a myopic adult contracts syphilis, the usual precautions should be doubled. Not only should mercurial treatment be energetic and systematic, but the greatest attention should be paid to the myopia, with instructions to rest the eyes frequently. He has witnessed cases of detachment of the retina in myopic syphilis. In one instance a lad belonging to a myopic family contracted syphilis at 17, and a year later had complete detachment of the retina in the left eye. He attributed this to a traumatism, but two or three years afterward there was partial detachment of the retina in the other eye. Considerable improvement occurred under intravenous injections of mercury cyanid, but the field of vision is still much restricted. In another case a myopic young physician, member of a myopic family, noticed impairment of vision seven years after contracting syphilis. The disturbances all vanished under energetic mercurial treatment, but three years later a large central scotoma developed in the left eye, due to hemorrhage into the macula. Atrophying choroiditis and circum-papillary chorioretinitis are affections common in acquired syphilis, like interstitial keratitis and progressive myopia in the inherited form. The progressive myopia noted in some cases of inherited syphilis is refractory to correction by glasses, even although the disturbances in vision do not indicate a high amount of myopia, not more than 10 or 14 D. In central choroiditis there may be a more or less extensive relative scotoma. This may aid in differentiating and in the prognosis. This pathologic myopia was found more frequent among the illiterate in Tscherning's investigations, showing that school work can not be incriminated in these cases.

47. Albuminuria of Pregnancy.—Besides the albuminuria of a pregnant woman affected with Bright's disease and the albuminuria due to compression of the kidney by the pregnant uterus, there is another variety which Wallich calls "albuminuria from supuration." The symptoms are polyuria with or without disturbances in micturition, and turbid or purulent urine, but very little general disturbance, no edema nor eye symptoms nor pain in the epigastrium. In the space of two months, recently, he noted this form of albuminuria in 6 out of 15 pregnant women showing albuminuria. He put these patients on a milk diet and administered methylene blue or other disinfectant for the urinary passages. The albuminuria may vanish, while the polyuria and turbid urine may persist, although without fever or other complications at any time during pregnancy and the puerperium. The main point is to decide whether the urinary apparatus is permanently affected; as a rule it is not.

54. Spermatic Insufficiency and Diastematic Insufficiency.—Ancel and Bonin explain that insufficiency of the testicles does not mean inadequate production of the seminal secretion alone. There is a seminal gland in the testicle and an interstitial gland. The seminal gland comprises the seminiferous tubules, while the intertubular connective tissue is what the authors call the interstitial gland or diastema. The latter is probably the seat of the production of the internal secretion of the testicles. Experiments on animals have shown that each gland is practically independent of the other and may fail in its task without compromising the functional activity of the other. There is, therefore, a "spermatatic insufficiency" and a "diastematic insufficiency." The former is shown solely by the absence of spermatozoa and is physiologic in the aged. The diastematic insufficiency is manifested in other and numerous ways. If the gland fails to work at all, the age of puberty does not bring virility and the individual grows into a natural eunuch. If the gland does not fail until after puberty, the manifestations are less marked, but the beard and hair are liable to drop out, the voice to become hoarse, the mammae may develop and the outlines become more rounded generally. The individual may remain infantile or develop into a giant or present the characteristics of the female. These various types and transitions have been noted among pigs, and when slaughtered the testicles were found abnormal, as anticipated. Experiments on rabbits proved that it is possible to retard the

development of puberty for six months by ligating the vas deferens. Diastemate insufficiency in boys as puberty approaches is evidenced by a rapid and exaggerated growth of the limbs, tardy appearance of the hairy system and of the development of the external genitals, marked muscular weakness, nervous exhaustion, asthenopia, etc. The noticeable action of the interstitial gland in the testicle on the development of the skeleton is responsible for the stimulation of the growth of the epiphyseal cartilages as the first manifestation of diastemate insufficiency, transient or permanent, appearing during the period of puberty. They add that such lads seem to be peculiarly predisposed to tuberculosis, possibly owing to lack of the "invigoration" from the internal secretion of the interstitial gland in the testicle.

Archiv f. Gynäkologie, Berlin.

Last indexed, page 470.

- 55 (LXXVII, No. 1.) Uterine Lymphatics During Pregnancy.—Ueber die Lymphbahnen der Uterus-Schleimhaut während der Schwangerschaft. E. Schick.
- 56 *Inheritance of Tuberculosis.—Erblichkeit der Tub. L. M. Bossi (Genoa).
- 57 Zur Biologie des menschlichen Placenta. W. Llepmann.
- 58 Ueber Ovarien-Transplantationen. G. L. Rasso.
- 59 *Zur Pathogenese der Eklampsie (experimental). O. Semb.
- 60 Entstehung der Hematocele. P. Skutsch.
- 61 Ueber Adenoma malignum cervicis uteri. A. R. Linnell.
- 62 Zur Biologie der Genital-Organen im Fötal-Alter. J. Hofbauer.
- 62½ Nuchalriss Bossi und vaterlicher Kaiserschnitt (Caesarean section). A. Dührssen, Id. Leopold.
- 63 (No. 2.) Die Pollikel-Atresie während der Gravidität, insbesondere die Hypertrophie und Hyperplasie der Theca interna-Cellen (Theca-Lutein-Cellen) und ihre Beziehung zur Corpus luteum-Bildung. L. Seltz.
- 64 *Ueber Enteroptosis, nebst Bemerkungen über die Druckverhältnisse im Abdomen (pressure conditions in abdomen). P. Mathes.
56. Inheritance of Tuberculosis.—Bossi's article is a contribution from an obstetrician to our knowledge of tuberculosis. He examined large numbers of placenta and of fetuses from women with tuberculosis, supplementing his research by experimental work. He found that it was a very rare exception when the Koch bacillus was transmitted to the fetus from the parents during its intrauterine existence. The toxins of tuberculosis may be transmitted. They seem to accumulate in the placenta and to pass thence into the fetus. The toxins thus transmitted are responsible for the defective development and organic weakness noted in such children. They favor infection during early infancy.

59. Pathogenesis of Eclampsia.—Semb writes from Christiana to describe extensive experimental experience in regard to immunization of rabbits against eclampsia.

64. Enteroptosis.—Mathes remarks that the large number of women with enteroptosis observed at the gynecologic clinic at Graz, where he is assistant, early attracted his attention, and he has made a special study of this condition. His conclusions may be summarized in the statement that enteroptosis is a constitutional and hereditary anomaly of the entire organism, a lack of vital energy in all the body tissues, although it derives its name from the most striking manifestation, the sliding down of the bowels. The abdominal organs slide downward on account of the insufficiency of the frequently hypoplastic, sunken-in thorax and the relaxation of the abdominal walls. The organs in the lower abdomen thus become supported only by their ligaments and the abdominal walls. The condition is readily recognized from the general aspect of the body. The spine is bent over and the longitudinal axis of the thorax forms an obtuse angle with the similar axis of the abdomen. The expression of the face is juvenile. In short, the habitus enteroptoticus is identical with what we call the habitus phthisicus. The clinical importance of the anomaly depends on the degree in which the nervous system is involved. The greater the congenital anomaly, the earlier the results become manifest. This is especially the case in the infantile form characterized by hypoplasia of the thorax and the infantile general aspect. The chlorosis of such girls is a "crisis" of enteroptosis. The latent predisposition is fanned into an actual malady by some special stress, some genital or other affection, an exhausting disease, pregnancy, tight lacing, overstrain, lack of proper nourishment or similar drag on the vitality. The symptom-complex of retroflexion of the uterus is identical with that of wandering kidney and enteroptosis. The peritoneum of women with this displacement of the bowels is exceptionally sensitive, and this

sensitiveness is increased by any genital affection. The effect on the general nervous system has nothing to do with hysteria and neurasthenia. Enteroptosis is undoubtedly on the increase, but the paintings of the old masters show that it has always existed. Menling's "Eve," in the Vienna gallery, is a typical example, and also some of Botticelli's women, while the number of modern painters who admire the enteroptotic type, he states, is considerable, especially the pre-Raphaelites. Treatment must consist in general strengthening measures. In severe cases strict bed rest and Weir Mitchell forced feeding may be ordered. Gymnastic exercises to strengthen the muscles of the thorax and of the abdominal walls correspond to causal indications. A well-fitting abdominal bandage below the umbilicus, supported on the pelvic girdle, will put an end to a number of the disturbances. Weight from the shoulders should be avoided. In conclusion Mathes declares that the local treatment of gynecologic affections should be restricted to the minimum and to those cases alone in which it responds to the causal indications. Prophylaxis is important to recognize and to compensate the constitutional defect and to keep all exciting causes away from those predisposed to this condition. He denies the correctness of Hörmann's conclusions, mentioned in these columns on page 292 of the last volume, showing the fallacy of some of his premises.

Berliner klinische Wochenschrift.

- 65 (XLII, No. 50.) Ueber die Wiedergewinnung von Toxin aus seiner Antitoxin-Verbindung (toxin from its antitoxin combination). J. Morgenroth.
- 66 *Hörprüfung und anatomischer Befund bei progressiver Schwerhörigkeit (tests of hearing and anatomic findings in progressive deafness). G. Brühl.
- 67 *Armlosung und Wendung (freeing the arm and version). Apfelstedt.
- 68 *Congestive Hyperemia in Treatment of Acute Inflammation.—Zur Behandlung acuter Entzündungen mittels Stauungs-hyperämie. R. Stich.
- 69 Frequency of Primary Intestinal Tuberculosis at Berlin.—Ueber die Häufigkeit der primären Darmtuberkulose in Berlin. Edens. (Concluded.)
- 70 (No. 51.) *Detachment of Retina Cured for 23 Years.—Ueber eine durch Operation geheilte und 23 Jahre lang geheilt gebliebene Netzhautablösung. H. Cohn (Breslau).
- 71 *Zur Pathologie und Therapie des Kryptorchismus. M. Katzenstein.
- 72 Eine neue Centrifuge mit hoher Tourenzahl und zuverlässigen Tourenzählern. O. Thilenius (Soden).
- 73 Ueber Stricturen der männlichen Urethra. Neuhaus. (Concluded.)
66. Anatomic Findings in Progressive Deafness.—Brühl insists on the importance of functional tests of the hearing as a means of distinguishing between the various pathologic anatomic conditions underlying progressive deafness. It is possible to distinguish three groups by the functional tests, even when the membrane is intact and the symptoms are vague: the cases of progressive deafness in which the functional disturbances are due to an isolated affection of the middle ear, those in which it is due to affections of the internal ear and those in which both middle and internal ear are involved. He describes some of the functional tests and the mechanism of their action.

67. Modified Version.—Apfelstedt suggests that one of the arms should be drawn out whenever version by the foot is necessary. This imitates a natural process and prevents suffocation of the child in freeing the arms later. He advocates the measure for trial in the clinic, not for general adoption as yet.

68. Congestive Hyperemia for Acute Inflammations.—Stich reports 150 cases of acute inflammation at Garré's clinic treated by artificially induced hyperemia. The results have shown the harmlessness of the constriction used for the purpose, with proper technique, closely supervised, and they have shown again the constant relief from pain and the possibility of avoiding the necessity for mutilating operations. He relates the history of a case in which the constriction was applied without due medical supervision, with the consequence that the arm became permanently contracted, with chronic edema and inability to use the fingers, not from necrosis of the tendons, but solely from the excessive and overlong application of the constriction. In conclusion he emphasizes the fact that treatment with congestive hyperemia requires much closer medical supervision than any other method of treating acute inflammations. Physicians who have not the time, the patience or the opportunity for such close supervision should not attempt to treat a

patient by congestive hyperemia, as they are liable to do more harm than with the knife. If the physician has patience enough he should commence with mild cases and suspend the treatment if he does not succeed in banishing the pain, applying it again to the next appropriate case. By this tentative use of the new method he will soon gain confidence and enable his patients to profit by what Stich calls "this fruit of Bier's genius." The finest results are obtained with tendon sheath inflammations. The pain is relieved, the process aborted or shortened, and complete functional restitution is the rule. When the congestive hyperemia was induced with a suction cup fitting over the lesion into sound tissue around, as in case of furuncles or carbuncles, the pain subsided and the lesion healed after from two to ten applications, sooner than with other technics. In 50 cases the measure failed in only 3 instances. In the severer cases of osteomyelitis the results were less satisfactory. One of the 2 patients with acute arthritis was a physician suffering intensely from inflammation of the elbow and of the articulation between the atlas and the occipital bone, the result of gonorrheal infection five weeks previously. He was skeptical in regard to the congestive hyperemia, but the prompt relief of his pain soon converted him and his auto-observation proved instructive, as he reacted to the slightest blunder in technic. It was remarked in his case that the constriction of the arm and neck had to be a little tighter when he was reclining than when he was sitting up to obtain the same results. The articulations involved healed without the least impairment of function.

70. Detachment of Retina Cured for 23 Years.—Cohn describes the case of a patient with detachment of the retina who has been under observation for twenty-three years. The man was treated with sclerotomy twice repeated, the cure thus obtained persisting unchanged for seventeen years to date. He discusses the various methods of treating detachment of the retina, preaching always, "Everything out, never anything into the eye." Puncture of the sclerotic with the Graefe knife is the most promising measure, he says. He has performed sclerotomy 39 times, frequently with excellent results. In one case a girl was cured by darkness, revulsion and leeches without operative intervention, the cure persisting till her death, twenty-seven years later. In his experience with 100,000 cases of eye affections he has encountered only 559 of detachment of the retina. When there is still perception of light, he advises repeated sclerotomy, a pressure bandage, diaphoresis with jaborandi, and purgatives. These measures will sometimes cure the detachment permanently, as in the case specially reported. Uthoff has cured 28 out of 337 patients treated by sclerotomy, as he is going to relate in detail at the Lisbon congress. Deutschmann has also had 7 patients cured for over ten years by this means.

71. Treatment of Retention of Testicle.—Katzenstein reviews the anatomic conditions and affirms that operative treatment of the testicle retained in the inguinal canal should not be attempted before the eighth or tenth year, although when complicated with hernia it demands immediate treatment at any age. He operates by drawing the testicle down into place with a thread passed through the tunica albuginea and tunica vaginalis of the retained organ. After the thread is thus passed through the testicle, through an incision over the inguinal canal, it is seized from below with long forceps introduced through the scrotum. The testicle is thus drawn down into place and is held there by being fastened to a flap from the inside of the thigh, about the size of a quarter, with a broad pedicle. The under side of this flap is sutured to the testicle, four stitches embracing the tunica albuginea. This holds the testicle and stretches the spermatic cord. Every step taken exerts traction on the cord by means of the attached flap from the thigh. After a few weeks the cord becomes permanently stretched, and the base of the flap uniting it with the thigh can then be severed. He has performed this operation fifteen times on 10 individuals. In every case the testicle has remained in its normal place and has grown in size. The wounds were treated with bismuth or a paste, and protected with a light dressing. The patient was kept in bed for a week or so and the leg gradually used. Others have modified his original procedure by fastening a string to the testicle and passing the string around the foot, thus exerting traction on the spermatic cord

from the foot. Longard and Lanz fasten the testicle to the thigh with adhesive plaster, but this is not sufficient in case of a very elastic spermatic cord. Others still have implanted the testicle in the thigh, but general anesthesia is required for its final restoration to place. Katzenstein claims that his technic is sufficient and superior, as it is simple and gives ideal results.

Münchener med. Wochenschrift, Munich.

- 74 (LII, No. 49.) *Ueber Wundbehandlung und Wundverband. E. Graser.
- 75 *Ueber die Sonderrnannschen Saug-Apparate zur Diagnose und Therapie der Nasenkrankungen (aspiration treatment of nasal affections). A. Hönneke.
- 76 *Ueber Operationen im Hause des Patienten. H. Ladenburger.
- 77 *Forced Feeding in Enteroptosis.—Die Bedeutung der Zellenmast mit Riedels Kraft-Nahrung für Behandlung der schlaffen Eingeweideschwächen und ihrer Folge und Begleitzustände. W. N. Clemm.
- 78 Zur Technik der Klammernaht nach Michel (suturing with clips). J. Hertzka.
- 79 Ueber die Messung der Hauttemperatur (of skin). H. Senator.
- 80 The Left Hemisphere and Action.—Die linke Hemisphäre und das Handeln. H. Liepmann. (Concluded).

74. General Principles of Treatment of Wounds.—Graser dwells on the necessity for training young physicians in the importance of keeping their hands from contact with septic material. It is not necessary to take hold of soiled dressings nor feel of a pus focus. With practice one soon learns to change the dressings and apply ligatures without touching them with the fingers, except the ends of the suture threads. "Take away your fingers," is his constant, reiterated admonition to his assistants, so that "Finger weg" is said to be his motto. He has trained himself until he can now palpate and operate in well-fitting rubber gloves as well as without them. In the after-treatment of wounds he preaches that all wounds that can be completely sutured may be left exposed to the air. The crevices are plugged by the coagulating blood and the wound heals as under a natural scab. The surgeon has to overcome his prejudices before he is willing to leave a wound thus exposed, but the wider his experience the greater his confidence. Before the sutures are finally tied, the last drops of blood are squeezed out, and then a piece of thin gauze is laid over it, held at the edges with collodion, but leaving the wound untouched beneath it. This allows the entrance of air and favors the drying of the coagulated blood into protecting scabs. He thus treats all sutured wounds in the face, almost all laparotomies, appendicectomy incisions and herniotomies. The gauze is applied merely as a screen and can be advantageously omitted in many cases. He follows the same principles in amputations, as he describes in detail with illustrations. He writes from an experience of 500 abdominal operations, 130 amputations, 52 osteotomies and 70 resections of joints, the majority treated according to these principles.

76. Operations at the Patient's Home.—Ladenburger has performed 88 major operations at the patient's home, sometimes in a small garret chamber, and he shows how easily and satisfactorily an important operation can be prepared for in an ordinary house. He has the largest and lightest room that can be spared entirely emptied the day beforehand and wiped with wet cloths in the evening. If necessary, sheets are hung up around the walls. He believes that a private house is freer from bacilli than any hospital. Everything that comes in contact with the patient is sterilized by the operator himself, and he can thus rely on its being done to suit him. He has a nurse to take care of the patient at night, while the housekeeping is done by a woman sent by a local charitable association, the "Hauspflegerverein," which was organized to promote these operations at the house instead of breaking up the home by sending the patient, who is often the mother, to a hospital.

Therapie der Gegenwart, Berlin.

Last indrered, page 165.

- 81 (XIXI, No. 12.) Zur Diagnose und Therapie spastischer Pseudo-Paralysen. A. Goldscheider.
- 82 Zur Bewertung der Formaldehydtherapie bei der Gicht und harnsauren Diathese (gout and uric acid diathesis). T. Brusch.
- 83 Die jetzige Behandlung der Knochenbrüche (fractures). M. Martens.
- 84 *Eine Methode zur Behandlung von Erkrankungen des Kehlkopfes, der Nase und des Ohres (endomassage of throat, nose and ear). M. Herz.

- 85 *Intravenöse Jodkalium-Injektionen bei Syphilis (potassium iodid). W. Doeveuspeck.
- 86 *Starch in Diarrhea and Sore Throat.—Stärke bei Durchfall und Halsbeschwerden. G. Hauflfe.
- 87 Orthostatische Albuminurie. A. Loeb.

84. **Endomassage of Throat, Nose and Ears.**—The apparatus devised by Herz has been previously described in these columns. The patient blows into a tube, the air being conveyed by other tubes to the throat, ears or nose, with a click and ratchet, which automatically arrest the current of air intermittently. This produces a succession of puffs of air under pressure in the organs being treated and has a kind of massage effect.

85. **Potassium Iodid Intravenously.**—Doeveuspeck pleads the cause of intravenous injection of potassium iodid in fulminating cases of syphilis, or when circumstances forbid the use of mercury and rapid action is necessary. He describes 4 cases in which the rapid benefit was strikingly apparent, this prompt effect being the special advantage of the intravenous route. Very small doses prove effectual. He used .1 gm. potassium iodid, giving it in the form of 2 gm. of a 5 per cent. solution. The injection did not seem to affect the circulation, respiration or temperature, and caused merely slight pain at the point of injection, generally quite transient. In the severe cases of cerebral syphilis he repeated the injection every day for six days.

86. **Cooked Starch in Diarrhea and Sore Throat.**—For years Hauflfe has used cooked starch as a soothing gargle in sore throat, and also as a means to check diarrhea. In the latter case it is sipped from time to time by the teaspoonful. It was found especially useful in the diarrhea of consumptives, but was beneficial in all varieties.

Virchow's Archiv, Berlin.

Last indexed XLV, page 743.

- 88 (CLXXXI, No. 1.) Zur Kenntnis des weiblichen Scheinwitters (spurious hermaphroditism). J. Fibiger (Copenhagen). Three cases.
- 89 Ueber die Defekte im oberen Teile der Kammerscheidewand des Herzens mit Berücksichtigung der Perforation des häutigen Septums (interventricular septum). O. Hart.
- 90 Ein Teratoma der Thyreoidea. P. Jacob.
- 91 *Ability of Yeasts to Induce Neoplasms.—Ueber die fröglliche Fähigkeit gewisser Hefestämme Neubildungen im Tierkörper hervorzurufen. E. Henke and P. Miodowski.
- 92 *Experimentelle Beiträge zur Frage kongenitaler Tuberkelbazillen-Übertragung und kongenitaler Tuberkulose. F. F. Friedmann.
- 93 Ueber subkutane und periartikuläre Verkalkungen (calcification). P. Kewandowsky.
- 94 Die sogenannte Pylorus-Hypertrophie ein Entwicklungsstörung (embryonal anomaly). M. Pfänder.
- 95 (No. 2.) Zur Pathogenese des Icterus. S. Abramow.
- 96 *Beitrag zu den traumatischen Erkrankungen des Pankreas. R. Illgermann.
- 97 Ueber die Karzinome des Ductus thoracicus. T. Schwedenberg.
- 98 Beziehungen eines Uterus-Myoms zu gleichzeitig vorhandenen multiplen Tumoren beider Nieren (both kidneys). R. Eller.
- 99 Ueber Myxome des Herzens, insbes. der Herzklappen (especially of heart valves). A. Leonhardt.
- 100 *Ueber die durch Adrenalin-Injektionen zu erzeugende Aorten-Verkalkung der Kaninchen (calcification of aorta in rabbit). E. Scheidemann.
- 101 *Ueber Aorten-Ruptur und Arteriosklerose im Kindesalter (in children). R. Oppenheimer.
- 102 (No. 3.) Experimentelle Untersuchungen mit implantierten Hautfisteln (scraps of skin). J. Guszmann.
- 103 Ueber Degeneration und Regeneration peripherischer Nerven. H. Lapinsky.
- 104 Die chemischen Veränderungen bei der fettigen Degeneration in Beziehung zu den anatomischen (fatty degeneration). Di. Cristina.
- 105 Ein Endotoksin des Mesenteriums und Netzes. G. Roegner.
- 106 Zur Genese der mesenterialen Chylangione. P. Klemm.
- 107 Hypertrophie und Arteriosklerose in den Nieren-Arterien (of kidneys). L. Jores.

91. **Relations of Certain Yeast Fungi to Neoplasms.**—The extensive researches reported discourage further attempts to connect any of the yeast fungi with the development of neoplasms, malignant or otherwise.

92. **Congenital Tuberculosis.**—Friedmann relates the results of two years' experimental research with the aid of the Rose inoculum. It was noted that week-old embryos of rabbits almost invariably contained tubercle bacilli when such bacilli had been injected into the vas deferens of the parent rabbit a few weeks before coupling. If the coupling took place after an interval of more than four weeks, conception did not follow. When animals had been infected by way of the lungs, and the process had passed into a latent stage, no tubercle bacilli could be discovered in the embryos and they developed into healthy

animals. Infection by way of the peritoneum became generalized so quickly that conception seldom followed coupling. A few tubercle bacilli could always be found in week-old embryos when, immediately after coupling, tubercle bacilli had been injected into the mother rabbit's vagina. Intraperitoneal and intravenous infection always prevented conception later when the infectious process was in progress. Subcutaneous infection of the mother animal immediately preceding coupling generally resulted in the finding of isolated tubercle bacilli in the liver of the fetus. They had evidently passed through the placenta. They always proved to be avirulent, and the embryos developed into healthy animals. Examination of sections of six pairs of testicles from cadavers of consumptives failed to reveal tubercle bacilli in any quantity. Only two bacilli were found. Similar sections of testicles from lepers showed swarms of lepra bacilli in the sections of the testicles. Friedmann adds that in 983 tuberculous patients with a parental history the father had been tuberculous in 51.2 per cent., the mother in 32.8 per cent. and both parents in 15.9 per cent., showing the preponderance of paternal tuberculous records. In all his experiments the embryos, although harboring tubercle bacilli, yet developed normally and were not to be distinguished from normal animals.

96. **Trauma in Relation to Affections of the Pancreas.**—Hilgermann reports a case of carcinoma of the head of the pancreas developing in a healthy man of 50 at the point where he had been injured in an accident eight months before death. The case suggests the possibility that malignant disease may follow trauma of the apparently most inaccessible organs. The development of the symptoms suggested an intimate connection between the injury and the cancer.

100. **Calcification of Aorta in Rabbits After Injections of Adrenalin.**—Scheidemann's experiments have confirmed those of Josué and others, who found that long continued intravenous injections of adrenalin induced marked changes in the aorta. The changes were very pronounced in some of the rabbits, while in others they were insignificant. The changes resembled more the calcification of the media in the arteries of the extremities in man rather than arteriosclerosis. In order to approximate the conditions of the development of arteriosclerosis in man, the animals should be kept permanently under the influence of blood-pressure-raising substances, not the mere brief and intense experimental work yet done in this line. (See editorial on page 588.)

101. **Arteriosclerosis in Children.**—Oppenheimer reports 2 cases of arteriosclerosis in boys of 9 and 10. In the first the child succumbed to a spontaneous rupture of the aorta. High blood pressure and a possible congenital weakness of the wall of the artery were the cause of the affection in the first boy, but in the second it was undoubtedly of toxic origin. The pathologic anatomic findings in each case were those of typical arteriosclerosis.

Zeitschrift für Geb. und Gynäkologie, Stuttgart.

Last indexed page 474.

- 108 (LVI, No. 3.) *Ueber Prophylaxe der Streptokokken-Infektion bei Geburt und Operation durch aktive Immunisierung. O. Polano (Wülzburg).
- 109 *To Obtain a Perfect Clearely After Laparotomy.—Welchen Prinzipien müssen wir zwecks Erzielung einer exakten Laparotomie-Narbe folgen? W. Janes (Küstner's clinic).
- 110 *Zur Ovariectomie in der Gravidität. M. Graef.
- 111 *Influence of Gynecologic Affections on Composition of Blood.—Einfluss der Erkrankungen des weiblichen Genitals auf die Blutsbeschaffenheit. T. Leisewitz.
- 112 Beitrag zur Frage der Ovarial-Veränderungen bei Blasen-Mole und malignem Chorionepitheliom (changes in ovaries). A. Vallart.
- 113 *Relations Between Uterine Myomata and Heart.—Beziehungen zwischen Uterusmyomen und Herz. L. v. Lingen (St. Petersburg).

108. **Prophylaxis of Streptococcus Infection Before Child-birth and Operations.**—Polano argues that the female genital apparatus is constantly exposed to physiologic wounds by the conditions of menstruation and childbirth, and that the natural resisting powers of the individual might be enhanced by artificially rendering her immune to pyogenic infection. He has succeeded in accomplishing this in laboratory animals. He induced active immunization against the streptococcus and found that the animals became far more resistant to pyogenic infection afterward than the controls. The independent re-

searches of Landmann with living streptococci, of Bumm with attenuated and of Polano with killed streptococci all corroborate each other and confirm the possibility of influencing the organism in such a way as to reduce its susceptibility to pyogenic germs later. Polano's work with rabbits has absolutely established the harmlessness of the method and its efficacy and reliability. He tested the technic on himself before applying it in the clinic, and then tried it on 60 patients who had to undergo some gynecologic operation during or immediately after childbirth. There was no suppuration in any instance, but as this so seldom occurs at the Würzburg clinic, the material is too limited for definite conclusions. Polano, therefore, appeals to others to try this method of prophylaxis on a larger scale. He uses fresh human pathogenic streptococci without passage through animals. A little human ascitic fluid is added to the bouillon to "humanize" the culture medium. Streptococci from erysipelas, puerperal and scarlet fever, anginas and phlegmons were mixed for the tests, and the bodies of the bacteria were alone used. By this means 1 c.c. of injection material corresponded to 100 c.c. of the ascites bouillon or agar cultures. The bacteria are killed, centrifugated, a little phenol added and a suspension is made at the time with physiologic salt solution. He makes the injections in the pectoral muscles as causing less annoyance in lying or sitting than if made in the buttocks. There is a very slight general reaction, the temperature rose a trifle and the pulse rate was increased a little in the experiments on himself with twice the amount he used on others. He calls this technic "a means of inducing natural antiseptis in the individual." The organism is affected by it in such a way that it is able to offer a successful resistance to the streptococci and annihilate them at their first invasion.

109. Perfect Laparotomy Cicatrix.—Exact apposition of the layers of the abdominal wall is indispensable for a perfect suture and cicatrix. A special mode of suturing after incision of the linea alba was introduced into Klistner's clinic some years ago, and 157 patients thus treated have been re-examined lately. The results have been so satisfactory that Harnes describes his technic for the benefit of others. The peritoneum is sutured separately with catgut and tied. The single thread for the fascia and epidermis is passed through the fascia and then the ends are crossed and passed through the epidermis from below. The suture thus forms a figure 8, the upper half larger than the lower. Aluminum bronze wire is used for the figure 8 suture. From seven to nine of these sutures, not too close together, are required for a laparotomy. The wire is removed about the fourteenth day. The results are as fine with this simple technic as have been hitherto attained only by more complicated methods of incision and suturing.

110. Ovariectomy During Pregnancy.—Graefe reviews the cases reported since Heil's statistics were published, and adds 4 others personally observed. The mortality of ovariectomy during pregnancy is actually less than at other times, but this is due merely to the fact that a malignant ovarian tumor prevents conception. The pregnancy proceeded uninterruptedly to term in all but 2 cases. This can be insured by postponing the ovariectomy in case of a living child nearly to term. Out of 23 cases on record in which both ovaries were removed before the end of the fourth month, abortion followed in 4 instances, the percentage being about the same as for unilateral ovariectomy. Graefe believes that an ovarian tumor in a pregnant woman should be removed as promptly as possible. He operated by the abdominal route in his cases.

111. Influence of Gynecologic Affections on the Blood.—Leisewitz has been investigating the blood in 150 gynecologic patients. The examinations were made in the morning, after a light breakfast, the day before the operation. The findings were so constant and so characteristic that he declares that examination of the blood should never be omitted before any important operation for a severe gynecologic affection. It supplements the indications for operative or nonoperative treatment, especially in case of myoma and of innocent and malignant cystoma. When the blood is examined before the operation and again afterward, it reveals the influence of the affection and the improvement of the general condition after operation. Myoma and carcinoma have a decidedly unfavorable influence on the blood, inducing high leucocytosis, with great reduction of the hemoglobin content, but these conditions soon

right themselves after removal of the growth. He classifies the findings in the various groups of gynecologic affections. In 3 cases of tubal abortion there was a hyperleucocytosis of 40,000 in one patient eight days after the rupture of the tube. There was no suppuration, but the findings suggested that there had been three separate hemorrhages during the interval before the operation. If the blood findings show a tendency to improvement in cases of myoma in which the indications for operation are dubious, non-interference for the time being may be justified if the blood is examined again every three or four months. In case the blood findings show a tendency to grow worse, operation should not be delayed. If the blood findings were very abnormal before an operation for myoma, the prognosis should be guarded. In case of low hemoglobin and small number of reds, the possibility of degeneration of the heart should be borne in mind.

113. Relations Between Uterine Fibroma and the Heart.—Out of 66 patients with uterine fibromas in von Lingen's experience, only 16 presented evidences of functional cardiac disturbance of the heart; 5 others had a murmur at the apex, probably due to anemia. The particulars of all his cases are tabulated, and the necessity for careful examination and watch over the heart in all cases of uterine myoma is emphasized. If slightly abnormal conditions are found in the heart, this is another indication for removal of the growth, as also for heart tonics. The prognosis is better than when the heart and vessels already present pronounced changes. In operating it must be borne in mind that a vaginal operation makes less demands on the heart than a laparotomy.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

DER ARZTLICHE RATGEBER IN BILD UND WORT. Atlas und Handbuch für Gesunde und Kranke. Unter Mitwirkung von Dr. O. Brühl, F. Cramer, etc., herausgegeben von Dr. med. fr. Siebert. Mit 245 farbigen Abbildungen auf 74 Tafeln und 481 schwarzen Abbildungen im Text. Cloth. Pp. 1924. Price, \$6.50 net. München: J. F. Lehmann Verlag. New York: Paul B. Hoeber.

MANUALE DELLE MALATTIE DELL' OCCHIO Ad Uso Degli Studenti E Dei Medici Pratici Traduzione Italiana Sulla Quarta Edizione Americana. Con note ed Aggiunte del Dr. Edmondo Trombetta and Dr. Carlo Enrico May. Con 360 illustrazioni originali e 21 Tavole con 70 figure colorate. Cloth. Pp. 555. Price, L. 8. Torino: Unione Tipografico-Editrice, 1906.

VERHANDLUNGEN DER BERLINER MEDICINISCHEN GESELLSCHAFT aus dem Gesellschaftsjahre, 1904-1905. (Separat-Abdruck aus der Berliner klinischen Wochenschrift.) Herausgegeben von dem Vorstände der Gesellschaft. Band 35 and 36. Paper. Pp. 468 and 594. Berlin: Druck von L. Schumacher, 1905-1906.

THE OPHTHALMOSCOPIC AND HOW TO USE IT. With Colored Illustrations, Descriptions and Treatment of the Principal Diseases of the Fundus. By J. Thurlington, A.M., M.D. 73 Illustrations and 12 Colored Plates. Cloth. Pp. 298. Price, \$2.50. Philadelphia: P. Blakiston's Son & Co., 1906.

A TEXT-BOOK OF HUMAN PHYSIOLOGY, Including a Section on Physiologic Apparatus. By A. P. Brubaker, A.M., M.D. Second Edition, Revised and Enlarged, with Colored Plates and 356 Illustrations. Cloth. Pp. 715. Price, \$4.00. Philadelphia: P. Blakiston's Son & Co., 1905.

PROCEEDINGS OF THE AMERICAN FOREST CONGRESS. Held at Washington, D. C., January 2-6, 1905, under the auspices of the American Forestry Association. Cloth. Pp. 474. Published for the Association by the H. M. Suter Publishing Co., Washington, D. C., 1905.

URIC ACID. The Chemistry, Physiology and Pathology of Uric Acid and the Physiologically Important Purin Bodies, with a discussion of the Metabolism in Gout. By F. H. McGrudden. Paper. Pp. 318. Price \$2.50 net. Cloth, \$3.00 net. New York: Paul B. Hoeber.

APPARATUS AND METHODS OF TESTING DISINFECTANTS. By A. J. Kendall, Ph.D., Acting Chief of Laboratory, Bulletin No. 1, Laboratory of the Board of Health Isthmian Canal Commission. Paper. Pp. 10. Panama: I. C. C. Press, 1906.

A SYSTEM OF SURGICAL NURSING. With an Appendix Containing Useful Formule, Emergency Drill, Etc., by A. N. McGregor, M.D., F.R.S.G. Cloth. Pp. 554. Price 9s. net. Glasgow: David Bryce & Son.

FIFTEENTH ANNUAL REPORT OF THE STATE BOARD OF MEDICAL EXAMINERS OF NEW JERSEY, 1905. Paper. Pp. 55. Trenton, N. J.: MacCrellish & Quigley, State Printers, 1906.

A HANDBOOK OF CLIMATIC TREATMENT, INCLUDING BALNEOLOGY. By F. R. Huzard, M.A., M.D., F.R.C.P. Cloth. Pp. 536. Price, \$4.00. New York: The Macmillan Company, 1905.

PUBLICATIONS FROM THE LABORATORIES OF THE JEFFERSON MEDICAL COLLEGE HOSPITAL. Vol. 11. Paper. Philadelphia, 1905.

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Original Articles

IMMEDIATE EXAMINATION OF UTERINE MUCOSA AND MYOMATOUS NODULES AFTER HYSTEROMYOMECTOMY TO EXCLUDE MALIGNANT DISEASE.*

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It has long been known that sarcomatous changes may occur in myomata. In 1860¹ Virchow gave a very clear account of the gross and histologic pictures in such cases. In 1872² Chrobak drew attention to this class of cases, and in 1887³ Ritter gave a full survey of the literature up to that date. The question was fully discussed by Williams,⁴ as well as by Schreher,⁵ in 1894; and in 1895 by L. Pick.⁶ The article of Gessner,⁷ published in 1899, is the most exhaustive that we possess, and will well reward a thorough study. Among the more recent and lucid articles is that of Wier,⁸ published in 1901, and that of Jacobi and Wollstein,⁹ which appeared in 1902.

But it was the excellent paper by Charles P. Noble, that first thoroughly aroused gynecologists to an appreciation of the possible danger of allowing myomata to remain year after year without operative interference. His paper was closely followed by those of Hunner and McDonald. In going over the large number of myoma cases that we have had at the Johns Hopkins Hospital I have been surprised at the number of instances in which myomata were associated with carcinoma either of the cervix or body, and at the relatively frequent pictures of sarcomata developing in myomatous tumors. All these cases will shortly be reported in detail by Dr. Kelly and myself.

These findings have a very practical bearing, and at the New Orleans session of the American Medical Association in May, 1903, I advised opening the uterus immediately on its removal as a routine procedure to see if by any chance carcinoma of the body existed.¹⁰ Since that

meeting I have seen several cases that indicate a still further precaution, namely, that we not only carefully explore the uterine cavity at once, but also examine the myomatous nodules. Had such a precaution been adopted in the present case there is a strong probability that the patient might have been saved. The uterus on removal showed nothing unusual. On opening the uterine cavity the mucosa was found everywhere intact and apparently normal. Further examination in the operating room was not undertaken and the specimen was sent to the laboratory. There a longitudinal section was made through the tumor and some degenerative changes were noted, but through an unfortunate circumstance no further examination was made. It was not until after the second operation, more than two years later, when we found a sarcoma springing from the cervical stump, that the original tumor was again examined. The most casual glance showed not only areas of hyaline degeneration in the myoma, but also round and irregular areas of typical sarcoma.

Supravaginal hysterectomy supposedly for simple interstitial and subperitoneal myomata. Two years later sudden collapse due to hemorrhage from a sarcoma developing from the cervical stump (Fig. 1). Re-examination of the original tumor showed typical sarcomatous transformation of the myoma (Fig. 2). Later intestinal obstruction; artificial anus with complete control. Death eight months after the second operation.

Patient.—Mrs. W., aged 42, was seen in consultation on Jan. 22, 1903. For several years the menstrual periods have been exceedingly free. From time to time she has been treated for dyspepsia and for some cardiac lesion, but not until recently has any abdominal enlargement been detected. She is well nourished, but is exceedingly pale. The mucous membranes are blanched and the hemoglobin is 30 per cent. On vaginal examination the cervix is found to be normal. Filling the vaginal vault and extending half way to the umbilicus is an irregular myomatous uterus. Above and to the right is a globular mass the size of a kidney. One of the most interesting phenomena is a bruit felt by the examining finger along the course of the left uterine vessels.

Operation.—The uterus was brought up without much difficulty and the large mass felt in the region of the liver proved to be a subperitoneal and pedunculated myoma. The uterus was removed from left to right. The left tube and ovary were not disturbed. The patient stood the operation well and lost very little blood. Phlebitis developed some days after operation, but did not retard her progress very much. Within a month her color had returned, and in less than three months she was in perfect health. I saw her on Jan. 1, 1905, and she was in excellent condition.

Second Operation.—Feb. 17, 1905. The patient felt perfectly well and went to market yesterday morning. About 1 p. m. she was taken with pain in the lower abdomen, and a little later on almost fainted while at stool. Dr. Gortler was called to see her and advised immediate removal to the hospital.

On examination, under anesthesia, we found the pelvis partly filled by a mass about the size of a small cocoonut. This apparently involved the left side more than the right. The left ovary having been saved at the previous operation, we thought

* Read before the Johns Hopkins Hospital Medical Society.

1. Virchow: Die Krankhaften Geschwülste, vol. III, p. 201.

2. Chrobak: Arch. f. Gynäk., vol. IV.

3. Ritter: Inaugural Dissertation, "Ueber d. Myosarkom." Berlin, 1887.

4. Contributions to the Histology and Histogenesis of Sarcoma of the Uterus. J. Whitridge Williams, American Jour. of Obstetrics, 1894, vol. xxix, No. 6.

5. Schreher: "Ueber d. Complication von Uterusmyom mit secundärer sarcomatöser Degeneration," Diss. Inaug., Jena, 1894.

6. Pick, L.: "Zur Histogenese und Classification der Gebärmutter-sarcome." Archiv. f. Gynäkologie, 1895, vol. xlviii, p. 24; and "Zur Lehre vom Myoma sarcomatosum und über die sogenannten Endothellome der Gebärmutter," Arch. f. Gynäkologie, 1895, vol. xlix, p. 1.

7. Gessner: Velt's Handbuch der Gynäkologie, 1899, vol. III, 2d half, p. 957.

8. Wier, Wm. H.: "Muscle-cell Sarcomata of the uterus," Amer. Jour. of Obstetrics, 1901, vol. xliii, p. 618.

9. Jacobi, Mary Putnam, and Wollstein, Martha: Amer. Jour. of Obstetrics, 1902, vol. xiv, p. 218.

10. Thomas S. Cullen: "Sarcomatous Transformation of Myomata," Journal A. M. A., Aug. 8, 1903.

that this tumor was certainly ovarian in origin. On opening the abdomen the left ovary was found to be perfectly normal, but projecting from the stump of the cervix and extending down between the cervix and rectum was a definite sarcomatous nodule fully 10 cm. across (Fig. 1). This was somewhat lobulated. It had been slightly lacerated and free bleeding had occurred. We removed at least a quart and a half of free blood and clots from the abdominal cavity. Her sudden discomfort was evidently due to partial tearing of the growth. We were able to peel the growth out to a great extent, but it was impossible to remove it in its entirety.

The left lobe of the liver was sharp, the right lobe very blunt and thickened. We thought that we were dealing with a hepatic metastasis, but on continuing the incision upward found there was merely thickening of the liver. The omentum was free. The appendix was removed.

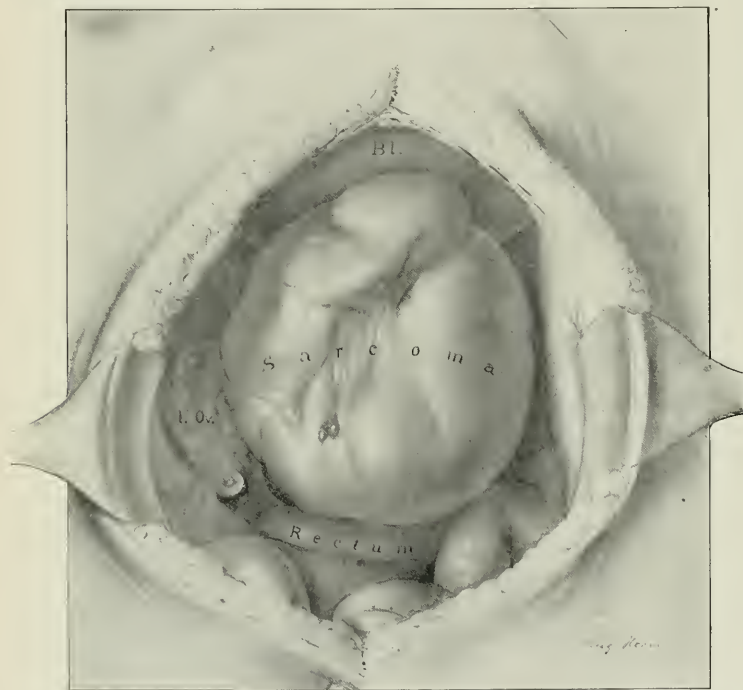


Fig. 1.—Sarcoma developing in the cervical stump. (Gyn.-Path. No. 8370.) The pelvis is viewed from above. Rising from the pelvis between the bladder and the rectum is a smooth lobulated growth presenting a somewhat scarred appearance. To the left is the intact and normal left ovary. The right appendages were removed at the first operation.

The condition is particularly interesting when we remember that the uterus had been removed fully two years before and that for two years the patient had remained perfectly well.

Postoperative History.—Patient was readmitted to the Church Home Aug. 21, 1905. For the preceding four or five weeks she had had great difficulty in securing an evacuation of the bowels. On examination we found that the pelvis was practically filled with a new growth and that it would be necessary to make an artificial anus. The bladder showed definite involvement by the growth and the urine contained large quantities of blood. I made an incision through the left rectus, brought out the sigmoid flexure, cut it in two, closed the lower end, brought the upper end out through the rectus, passed it outward beneath the sheath of the rectus for about an inch and a half, then made a longitudinal section through the sheath of the rectus and through the fascia to the skin,

attaching the bowel to the skin. The bowel, therefore, was brought upward, then outward and then upward again. The patient experienced a great deal of relief. Her bowels moved once or twice a day, but she had practically absolute control, as there was no escape of fecal matter except at stool. She improved considerably. Occasionally there was some discomfort from the rectal tenesmus due to the ever-increasing growth pressing on the remaining portion of the rectum; otherwise she was comfortable. She remained in the hospital until about the first of October. During the last two weeks of her life she became much weaker and died Oct. 30, 1905.

Description of the Sarcoma Developing from the Cervical Stump.—The specimen (Fig. 1) consists of a mass of tissue 10 by 8 by 5 cm. It is somewhat lobulated, is rather smooth and on its under surface has a basal attachment, extending over an area of about 5 by 5 cm. The tissue is of brain-like consistency, yellowish white in color. It tears with the utmost readiness. On section the mass is found to contain a large irregular area of hemorrhage. At one point is a cystic space 2 by 1.5 cm. This is divided by trabeculae into smaller spaces and is filled with blood clots. The general character of the growth is clearly evident without histologic examination.

Histologic Examination.—The tumor is found to be made up of a sea of cells. Most of these cells have oval, vesicular nuclei and bear a striking resemblance to those of muscle fibers. The cells themselves are spindle-shaped, with deeply staining nuclei two or three times the natural size. Others are irregular and also stain deeply. Again we have masses of protoplasm containing five or six deeply staining nuclei. At other points there are giant cells where the nuclei are not over one-third the usual size. In places are seen spindle cells undergoing division. There are large irregular plaques of protoplasm containing fragmented nuclei and cells showing typical nuclear figures. The nucleus itself is sometimes dividing into five or six young nuclei. The blood vessels are large and abundant. The majority of them appear to be veins. Some are filled with thrombi, and the tumor cells are gradually obliterating them. In fact, dividing tumor cells can be demonstrated lying free in such blood vessels. In some places the tissue is much rarified, and in such areas giant cells are particularly abundant. The growth is essentially a spindle-celled sarcoma which shows a marked tendency to giant cell formation.

Description of the Original Tumor.—The specimen (Fig. 2) consists of a globular uterus, approximately 18 cm. in diameter. It is smooth and glistening. On the surface one or two nodules can be detected. Attached to the right cornu is a kidney-shaped subperitoneal nodule 13 cm. in length and 8 cm. broad. It is attached by a pedicle, 2.5 by 1.5 cm., and is freely movable. The uterine cavity is 17 cm. in length and is markedly convex, owing to the fact that the growth projects inward from the posterior wall. The mucosa, on the whole, looks normal, but is atrophic. Near the fundus it has undergone in some places almost complete atrophy, the growth in the posterior wall shining through.

The greater enlargement of the uterus is due to a circular nodule, 13.5 cm. in diameter, occupying the posterior wall. This nodule is almost spherical. The central portion has, in part, undergone typical hyaline degeneration, as is evidenced by large and small spaces traversed by delicate trabeculae. On careful examination there are several areas presenting a homogeneous spongy appearance. These form a part of the myomatous tissue. They vary from 1 to 4 cm. or more in diameter, are irregular in their distribution, and have undoubtedly developed from the myomatous tissue. They give the characteristic appearance of sarcoma, and are distributed throughout the solid portion of the tumor, being also intermingled with areas

hyaline degeneration, we have a good many muscle fibers still preserved, and there are quantities of mast cells. The nuclei of the muscle fibers show considerable variation in size and in staining properties. One is instantly reminded of a sarcomatous transformation. In the more characteristic sarcomatous areas where the cells are still preserved we see the same histologic changes. The nuclei are four or five times the natural size, are irregular in outline and stain very deeply. In other places we have very large irregular cells with protoplasm which takes the eosin staining deeply, and irregular nuclei situated in the center or at the margin of the cells. Again, some cells contain six or seven nuclei. The picture instantly

suggests sarcoma, but it is impossible to tell with certainty whether the growth really started in the muscle fibers or whether it originated from the connective tissue. On the whole, we think that the evidences of muscle origin are the more reliable. In some of the hyaline areas the blood vessels still persist, but the endothelium is present and the cells of the vessel wall are stained deeply and are irregular, suggesting that the connective tissue of the vessel wall is also undergoing a malignant change. The deeply staining cells stand out in sharp contrast to the surrounding areas of hyaline degeneration. Both macroscopically and microscopically areas of calcification are evident. At no point do we find any evidence that the sarcoma extends below the confines of the myoma.

After thinking over this case the surgeon will naturally ask, "Why should we not do a complete hysterectomy in all cases?" The supravaginal operation is the easier one; it leaves a better support to the pelvic floor, there is less danger of tying the ureters, and, as the blood supply of the bladder is little interfered with there is less likelihood of a postoperative cystitis. The advantages of the supravaginal operation appear to more than outweigh the dangers from malignant changes occurring in or associated with myomata. This case, however, clearly indicates that we

should carefully examine not only the uterine mucosa for carcinoma, but also the myomata for sarcomatous changes before the cervical stump is closed.

3 West Preston Street.



Fig. 2. Sarcomatous transformation of a uterine myoma. Supravaginal amputation with return of the growth in the cervical stump. (Natural size.) (Gyn-Path. No. 6421.) The picture represents a longitudinal section through the entire uterus. *a*, Upper limit of the uterine cavity; *b*, lower or cervical portion. It is thus seen that the myoma occupying the posterior wall projected into the uterine cavity and put the mucosa on tension. The myomatous nodule is approximately circular and in many places yields the usual myomatous striation. At *c* is an area of typical hyaline degeneration recognized by its homogeneous appearance. At numerous points indicated by *d* we find sharply outlined granular or spongy areas which are at once recognized as sarcomatous. At *e* along the outer margin of the myoma are areas of sarcoma and the tissue between *f* and *f'* is partly myoma, partly sarcoma; *g* is an area of calcification.

of hyaline degeneration. Macroscopically one is able to diagnose with absolute certainty that we have a sarcoma developing in the myoma. The uterine wall posterior to the tumor varies from 1 to 1.5 cm. in thickness, and in some places there is a covering from 2 to 5 mm. of uterine muscle separating the growth from the mucosa.

Histologic Examination.—The areas indicating hyaline degeneration are entirely devoid of nuclei. Here the tissue has undergone the usual complete hyaline transformation. Many sections have been taken from the areas suggesting sarcoma. In the majority of these, most of the elements have undergone complete coagulation necrosis. Here and there, however, in the vicinity of the blood vessels, are a good many small round cells. In some of the sections, in which there is incomplete

Treatment.—As a result of German nihilism, many of the leading text-books of the practice of medicine to-day are but little more than text-books on pathology. In looking through one of the latest and most popular works I was not so much surprised to read pages on diagnosis, etiology, pathology, and then to find the treatment disposed of in a short sentence.—Clark, in *Chicago Medical Recorder*.

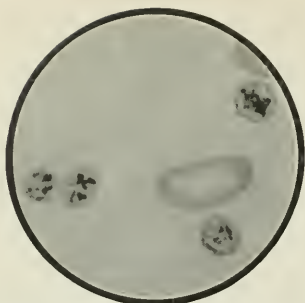


Fig. 1.—Four platelets and one red cell in the blood of a case of secondary anemia. Magnified 2,000 diameters.

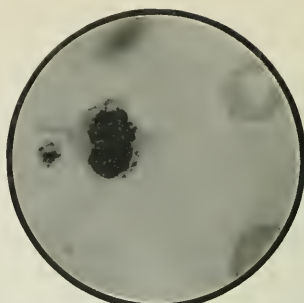


Fig. 5.—Platelet containing 2 distinct masses of chromatin on different levels (case of secondary anemia). Magnification 2,000 (or 2,500 ?).

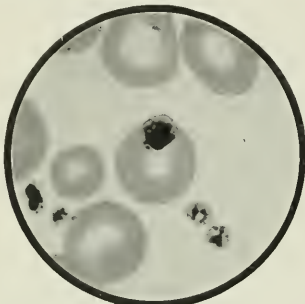


Fig. 2.—Platelets in pernicious anemia. Considerable variation in size. One overlaps a corpuscle. ($\times 2,000$.)

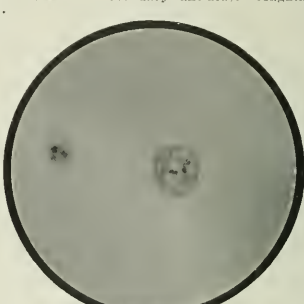


Fig. 6.—Platelet (secondary anemia) containing a "ring body."

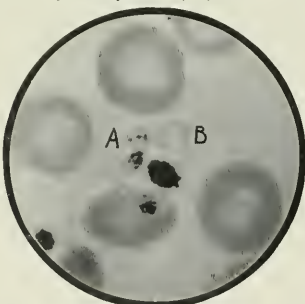


Fig. 3.—Platelets in pernicious anemia. One (A) has a projection suggesting a pseudopod. Another has an intensely stained central portion (nucleus?). A third is superimposed on a red cell. B represents a red cell, microcyte. ($\times 2,000$.)

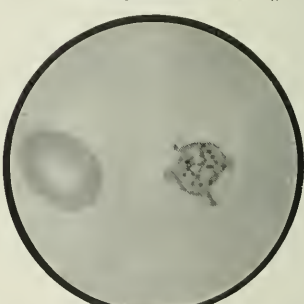


Fig. 7.—Platelet showing "buds" and chromatin granules arranged in rings (case of secondary anemia). ($\times 2,000$.)

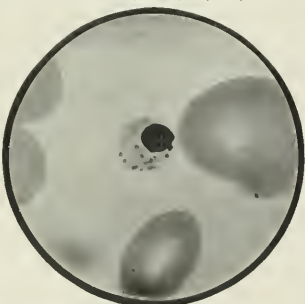


Fig. 4.—From a case of splenic anemia. A blood plate containing a deeply stained chromatin body of large size (nucleus?) and many smaller bodies similarly stained. Under the microscope a granular structure was apparent in the deeply stained (nuclear?) body.

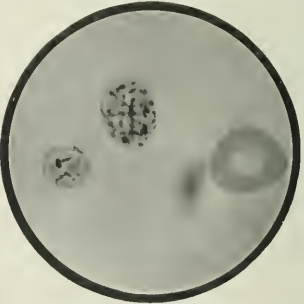


Fig. 8.—Two platelets, one nearly as large as a red cell and showing chromatin granules scattered over the whole surface. In the photograph this cell resembles a stippled erythrocyte, but in the original there is no such resemblance.

NOTE ON THE MORPHOLOGY OF BLOOD PLATES.

MARY W. ROWLEY, M.D.

BOSTON.

Blood plates are usually described as from one to three microns in diameter. The accompanying photographs* demonstrate that they are often much larger than this, with a good deal that suggests cell-structure.

The blood in which the platelets here reproduced were found was from three cases, one of pernicious anemia, one of splenic anemia and one of severe secondary anemia. Using a modification of Wright's method of staining I have obtained similar plates in cases of malaria, myelogenous leukemia and in normal blood. With this stain the definite, usually rounded outline of the periphery is distinctly shown. In most of the figures hitherto published the edges of the plates are jagged and irregular.

Why are these plates so much larger than those usually described and pictured? Their size is probably due in part to squashing, as there are more large ones near the thin edge of the blood-smear where the leucocytes are also larger. But I believe that another reason is that with ordinary technic only the central deep-stained portion (Fig. 1) is visible at all. The periphery remains unstained and so invisible except when the platelet lies on a red cell. Then the periphery (with ordinary "Romanowsky" stain) usually appears colorless against the pink or yellow of the red cell (Fig. 2 shows a plate lying partly on a red cell with this periphery stained). I believe that with a suitable staining method plates similar to those here figured can be found in all or nearly all blood, normal and pathologic. I am now trying to work out such a staining method.

All of these specimens have been studied by Dr. Richard C. Cabot, who authorizes me to say that he entertains no doubt that the figures here shown are genuine blood-plates.

I am very much indebted to Dr. Cabot for assistance and encouragement given me by him in studying the blood-plates above described.

THE EARLY DIAGNOSIS AND RADICAL CURE OF CARCINOMA OF THE PROSTATE.

A STUDY OF FIFTY CASES AND PRESENTATION OF A RADICAL OPERATION.**

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Associate Professor of Genito-Urinary Surgery of the Johns Hopkins University.

BALTIMORE.

In the October number of the *Johns Hopkins Hospital Bulletin* I described briefly an operation for the radical cure of carcinoma of the prostate based on a study of forty cases.¹ Since then I have had ten additional cases. In the paper referred to I discussed first six cases which were seen early in the disease, in which a diagnosis of benign hypertrophy was incorrectly made and a partial operation therefore performed. (Bottini operation, 4; suprapubic prostatectomy, 1; perineal prostatectomy, 1.) All these patients subsequently returned with unmistakable evidence of cancer, and only one is alive to-

day. A study of the pathology of these cases, along with the symptomatology and clinical findings, showed that all presented certain features which may now be taken as suggestive of cancer. A study of thirty cases without operation and eight autopsies showed that cancer of the prostate may begin as a small indurated nodule in one or both lobes of an otherwise benign hypertrophy, that it remains confined for a long time within the stout capsule of the prostate, that its line of invasion is upward along the course of the vasa deferentia and seminal vesicles, and not usually into the bladder around the prostatic orifice, and that the inferior surface of the trigone is usually the first portion of the bladder to become involved.

It thus became evident that if a radical cure was to be attempted the line of excision would have to include the entire prostate, with its capsule and urethra, the adjacent portion of the bladder, particularly of the trigone, the seminal vesicles and the ampullae of the vasa deferentia.

During the course of a year four cases apparently favorable for such a procedure presented themselves, and the operation above indicated was carried out with little difficulty, slight operative shock and a very satisfactory convalescence in three cases; the histories were reported in detail. During the last six months ten patients with carcinoma of the prostate presented themselves, all beyond operative relief but one, and he would not submit to it. In one case, which seemed fairly favorable, the patient was operated on, but died, and autopsy showed extensive involvement of the pelvic peritoneum. In all of these cases the patients had been treated for a long time by their family physicians, and in several instances by skillful surgeons, and the character of the disease was not recognized. Had it been possible to get these cases earlier I believe the radical operation which I have proposed as a routine procedure for all favorable cases of cancer of the prostate would have resulted in cure.

DIAGNOSIS.

The early diagnosis of cancer of the prostate is not easy. I am free to confess that I have failed in at least six cases, and until confronted by their subsequent development never suspected the malignant nature of the disease. A study of the fifty cases which I have now had has brought out the following facts:

Symptomatology.—Cancer of the prostate may occur at any age after fifty years, 57 per cent. of the patients being between sixty and seventy years of age, the youngest in my series being fifty-three. The first symptoms in most cases were similar to those of benign prostatic hypertrophy, viz., slight difficulty and frequency of urination, but in about 30 per cent. of the cases pain was present—an unusual symptom in cases of prostatic hypertrophy. Hematuria occurred only four times as an early symptom, and in only about 20 per cent. of the cases was it subsequently present, in only a few cases as a prominent symptom; and these cases showed cystoscopically considerable intravesical tumor outgrowth, generally of a villous type. In a few instances the prostatic trouble ran a long course, having been present twenty years in one instance, but in these cases the disease probably became malignant many years after its onset. As a rule there has been a more rapid increase in the severity of obstructive symptoms than in benign cases, leading to an early large residual urine. In some cases, however, there has been little residuum and the bladder has been contracted.

Pain has been a prominent symptom, often entirely

* Photographs by Louis S. Brown of the Massachusetts General Hospital.

** Read before the Southern Surgical and Gynecological Association, Louisville, Ky., Dec. 14, 1905.

1. To appear in full in the *Johns Hopkins Hospital Reports*, a volume entitled "Studies in Urinary Surgery."

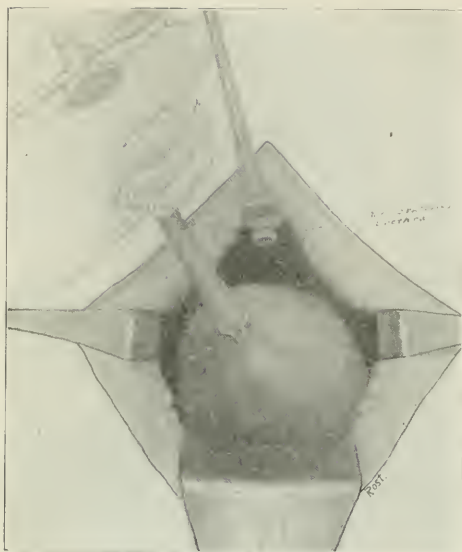


Fig. 1.—Membranous urethra and pubo-prostatic ligaments divided; prostate freed from surrounding adhesions.

out of proportion to the extent of the disease and the obstruction present. It generally appeared as a dull pain in the suprapubic region, which became worse as the bladder became full. During urination in about 25 per cent. of the cases there was pain in the urethra, often referred to the end of the penis, but sometimes limited to the deep urethra or perineum. Pain in the rectum has been present in only 10 per cent. of the cases, and seems to have no relationship to the extent of the involvement

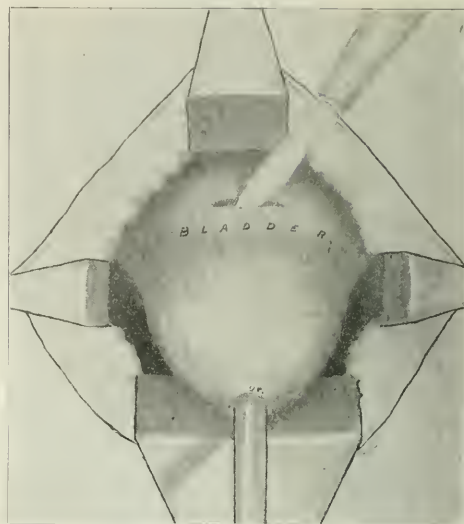


Fig. 3.—Prostate drawn downward exposing anterior surface of the bladder which is incised by scalpel.

in the pelvis, being noticeably absent in a number of cases of extensive prostatic carcinoma. The same may be said for pain in the lower extremities, hips, thighs, buttocks and along the sciatic nerves; it has been present in cases of slight degree and absent in others of considerable involvement. When present, however, pain in the rectum and lower extremities is a very suspicious symptom and should strongly suggest malignancy. Loss of weight has been a prominent symptom,

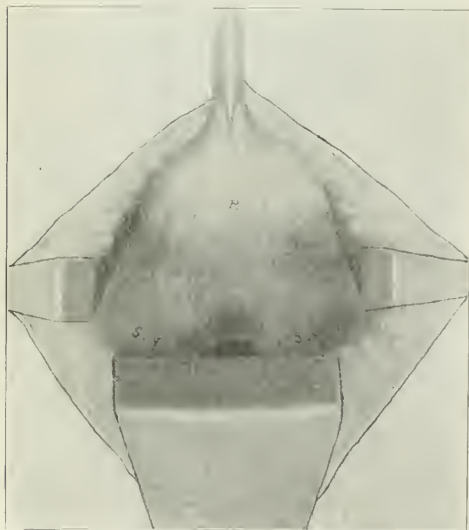


Fig. 2.—Freeing the posterior surface of seminal vesicles. Prostate drawn well out of wound.

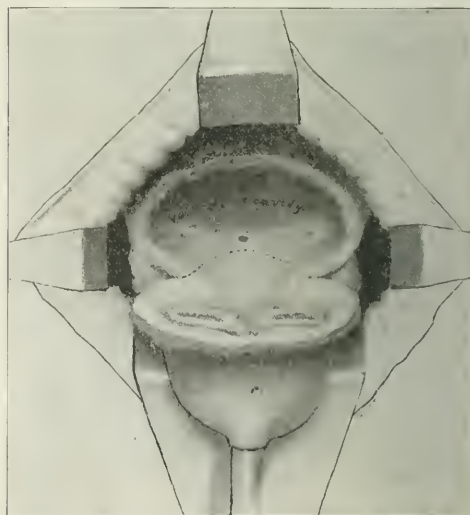


Fig. 4.—Excision of vesical cuff carried as far as trigone. Dotted line shows site of division through trigone.

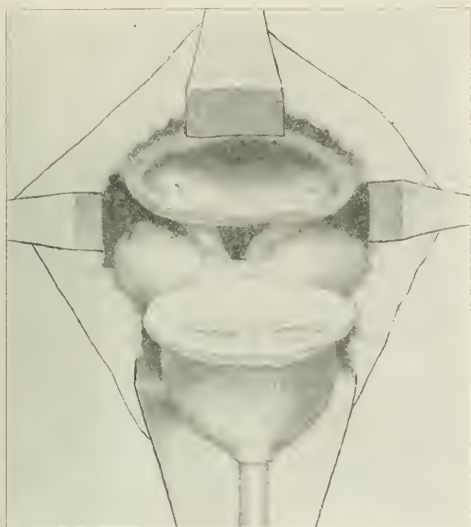


Fig. 5.—Trigone divided. Seminal vesicles and vasa deferentia exposed preparatory to division of vasa.

often occurring early in the disease and being much more pronounced than in cases of simple hypertrophy.

Clinical Findings.—The prostate was considerably enlarged in about 70 per cent. of the cases, but many of these patients were seen late. When the disease is still confined to the limits of the prostate proper this organ has generally been found only moderately enlarged. In such cases portions of the prostate in a few instances have been soft, but marked induration, generally involving almost all of the prostate, has been found in nearly all the cases. The surface of the prostate was smooth in most instances and only rarely rough or nodular until late in the disease.



Fig. 6.—Specimen removed; side view.

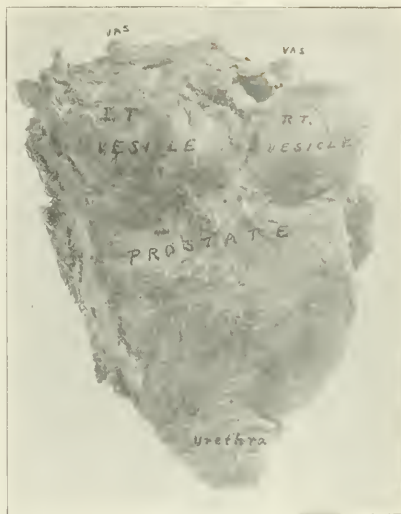


Fig. 7.—Posterior view of specimen in Figure 6.

In one early case there was a small prominent rounded induration at the apex of the prostate involving also the membranous urethra. In later cases the region of the seminal vesicles has shown induration, and often a characteristic hard plateau extending across the intervessel space from one vesicle to the other and presenting a concave sharply defined upper border to the finger has been present. Study of pathologic specimens has shown this is to be composed of a cancerous invasion of the vasa deferentia and the tissues between them and the trigone. An unusual thickness in the retromrethral portion of the

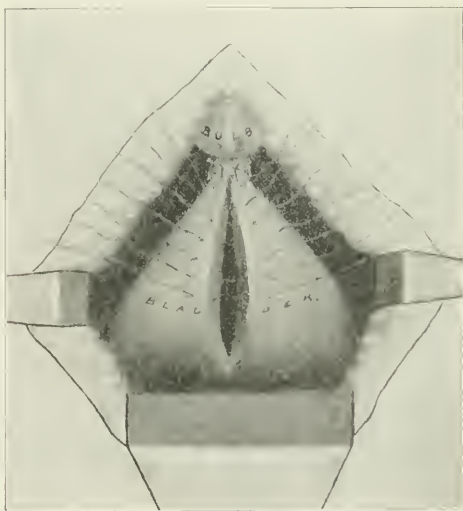


Fig. 8.—The anterior part of the vesical opening has been anastomosed to stump of membranous urethra, remainder being closed by interrupted sutures.

prostate (the posterior commissure), as shown by an instrument in the urethra and a finger in the rectum, was nearly always present. Enlarged pelvic lymphatic glands have been found in only a small number of even the more advanced cases, and as they are occasionally present with ordinary prostatitis their presence or absence is of little diagnostic or prognostic value, unless they are a prominent feature. A remarkable characteristic of cancer of the prostate is that metastases directly to the osseous system occur more often than to the glands.

The cystoscope has been of the greatest assistance in the diagnosis in early cases, as it has shown a distinct and radical difference in the intravesical picture from that seen in cases of benign hypertrophy. In the latter one usually sees two or three rounded intravesical lobes with deep sulci between and a pronounced *bas fond* behind them. In most early cases of carcinoma of the prostate practically no intravesical enlargement could be seen, and the entire absence of deep intervening clefts has been a constant finding in even the great majority of the advanced cases. Except in those rare cases in

its apex, and the absence of intravesical lobes as shown with the cystoscope. All these conditions are rarely present together, but generally enough are discernible to make the diagnosis clear. An induration of the prostate, coming on without recent prostatitis, without catheterism or an infected bladder, in a man past fifty, with symptoms of urinary obstruction, and particularly with pain, should make the physician suspect cancer at once, and a perineal operation should be undertaken to settle the diagnosis. If residual urine in considerable amount is present without the presence of intravesical lobes, as shown by the cystoscope, the suspicion may be considered strengthened. If one is unable, however, to be certain the prostate can be exposed, as for ordinary prostatectomy, and then by inspection and palpation the diagnosis can be made certain in most cases. In some instances I have been uncertain, and have then made bilateral capsular incisions and excised small portions of the lateral lobes for microscopic study. In two cases it was shown that the irregular induration was due to seed calculi of the prostate gland and in two other cases it was necessary to have frozen sections prepared before I could be certain of the nature of the disease. With a surgical pathologic laboratory adjacent it has been possible to get a nicely stained section for microscopic study in six minutes, and I have considered this worth waiting for in several instances. I have proposed, therefore, to follow the procedures above described in all suspicious cases, and repeat that those cases in which there are areas of stony induration, with pain as a prominent symptom, and little intravesical prostatic enlargement, may be considered very suspicious.

RADICAL OPERATIONS.

As above stated, operations and autopsies have demonstrated that the entire prostate with its capsule and urethra, the seminal vesicles, the ampullae of the vasa deferentia and the superjacent portion of the vesical trigone, must be excised in one piece if radical cures are to be expected.

A study of the literature of cancer of the prostate shows that this operation has not been done before for the disease. I have excluded the case of Kuster, who removed the entire bladder and transplanted the ureter into the rectum, and the case of Harris, who excised most of the bladder with the prostate (seminal vesicles not mentioned) and transplanted the ureters into the vertex of the bladder. Both of these were suprapubic operations and the patients lived five days and five months respectively. Two cases reported by Demarquay and that of Czerny, in which the anterior wall of the rectum was excised, have also been excluded.

The operation which I have carried out in six cases as a routine procedure for cancer of the prostate is described as follows in the history of one of the cases:

Operation.—An inverted V cutaneous incision was made in the perineum as in the operation employed by me for simple hypertrophy of the prostate, each branch of the incision being about two inches long. By blunt dissection the end of the bulb and central tendon were exposed, and the latter divided, exposing, in turn, the recto-urethralis muscle, the division of which gave free access to the membranous urethra behind the triangular ligament. Urethrotomy on a grooved staff was followed by introduction of the prostatic tractor, which was opened out after it reached the bladder. While traction was made on this instrument the rectum was carefully separated from the prostatic capsule by blunt dissection until the entire posterior surface of the prostate was brought into view. Up to this point the operator proceeded exactly as in the usual prostatectomy operation. The tissues around the prostate were more hemorrhagic and the wall of the rectum more

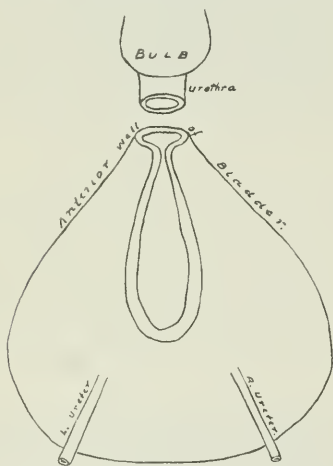


Fig. 9.—Diagram showing plan of vesico-urethral anastomosis.

which intravesical tumors were present, if any intravesical prostatic enlargement were visible it was generally only a slight enlargement of the median portion. A picture of diagnostic importance is an elevation and puckering of the mucous membrane of the anterior portion of the trigone—due, as I have found, to the intervascular mass of disease involving the trigone and leading to its contracture. Ulceration and intravesical tumor formation has been very rare in this region and then only very late in the disease.

Before withdrawing the cystoscope I have always inserted a finger into the rectum, and the finding in malignant cases has nearly always been entirely different from that in benign cases. There has always been a much greater thickness in the retrourethral portion of the prostate, the median portion being especially thick and the consistence very hard. In later cases, in which the disease has passed above the prostate into the retro-trigonal area, it has been impossible to feel the beak of the instrument in the bladder.

Early diagnosis then may be based on a suggestive history (rapidity of growth and pain), an indurated prostate, a strictured condition of the prostatic urethra near

closely adherent to the capsule of the prostate than usual. Examination of the prostate showed much greater induration than I have ever encountered in the benign prostate. The rectum and periprostatic tissues were free from invasion, and complete excision was, therefore, decided on and carried out as follows: The handle of the tractor was depressed, thus exposing the membranous urethra anterior to it at a point where it was easily divided transversely with a scalpel, leaving a small stump of the membranous urethra protruding from the surface of the triangular ligament. By further depressing the handle of the tractor the pubo-prostatic ligament was exposed and, being very tautly drawn, was easily divided by scissors, thus completely severing the prostate from all important attachments, except posteriorly (Fig. 1). The lateral attachments, which are slight, were easily separated by the finger. During these manipulations a moderate amount of hemorrhage was encountered (coming from the periprostatic veins, particularly those just behind the triangular ligament in front of the prostate), but it was easily controlled by clamping several bleeding points and applying pressure with gauze by means of an anterior deep retractor (Fig. 3).

The posterior surfaces of the seminal vesicles were then freed by blunt dissection, the now mobile prostate being well out of the wound, as shown in Fig. 2. In this exposure of the posterior surface of the vesicles I was careful not to break through the fascia of Denonvilliers which covers not only the posterior surface of the prostate, but also that of the seminal vesicles, and forms, I believe, an important barrier to the backward growth of the disease. The next step was to expose the anterior surface of the bladder, which was easily done by depressing the tractor and making strong traction. By this procedure the bladder was drawn down close to the skin wound that it was easily incised at a point in the middle line about 1 cm. behind the prostatovesical juncture (Fig. 3).

By means of scissors the division was continued on each side until the trigone was exposed (Fig. 4). After swabbing away the blood and urine, the ureters were easily found and the line of incision carried across the trigone with a scalpel so as to pass about 1 cm. in front of the ureteral orifices. While still making traction on the prostate, the base of the bladder was pushed upward with the handle of the scalpel, thus exposing the anterior surface of the seminal vesicles and the adjacent vasa deferentia (Fig. 5), all of which were carefully freed by blunt dissection with the finger as high up as possible, so as to remove with the vesicles much circumjacent fat and areolar tissues on account of the lymphatics which they contained. The vasa deferentia, after being drawn well down, were picked up on a small blunt hook and divided with scissors as high up as possible, care being taken to see that the ureters were not in danger. After division of the vasa, the seminal vesicles were found to come down more readily, the deep adhesions were finally divided, and the mass shown in Figs. 6 and 7 was removed. As seen here in the side view, a portion of the membranous urethra, the entire prostate with its capsule intact, the seminal vesicles, 4 cm. of the vasa deferentia, and a cuff of the bladder 1 cm. wide along the anterior and lateral surfaces and 2 cm. wide in the region of the trigone has been removed in one piece.

There now remained a large defect to repair. The vesical opening was about 8 cm. in diameter and had sunk far back in the depths. The stump of the membranous urethra had been obliterated by the compression of the anterior retractor so that it was necessary to insert a soft rubber catheter through the urethra from the meatus to discover it. The anterior wall of the vesical opening was then caught with forceps, and I was surprised to find how easily it could be drawn down to the membranous urethra, where an anastomosis was readily made, as shown in Figs. 8 and 9. The first suture was placed by inserting the needle into the triangular ligament above the urethra and bringing it out through the anterior wall of the membranous urethra, then through the anterior wall of the bladder in the median line from within out, care being taken to include only the submucosa and muscle. When this suture was tied, the median line of the anterior wall of the bladder was drawn to meet the median line of the roof of the remaining membranous urethra; the knot was outside, and the thread was left long.

Lateral sutures similarly placed (including the periurethral muscular structures below) and two posterior sutures completed the anastomosis of the membranous urethra with a small ring into which the anterior portion of the margin of the vesical wound had been fashioned by the tying of the sutures, as shown in Figs. 8 and 9. The remainder of the vesical wound now presented a longitudinal opening which was easily closed by sutures (Fig. 8), thus completely closing the defect and replacing the prostatic urethra with a funnel-shaped process made by the bladder wall. The sutures used were silk, one end of each being left long and brought out of the wound so that they could be extracted later (since then I have found alternate sutures of catgut and silkworm gut, also left long, the best). After light gauze packing had been placed in various portions of the wound, the levator ani muscles were drawn together with catgut (two sutures) in front of the rectum and the skin wound closed on each side with interrupted catgut sutures, leaving only a small portion open at the angle in front for exit of the gauze drainage. The rubber catheter (which was of considerable service in making the anastomosis of the urethra and bladder) was fastened in place by adhesive plaster around the penis, and the patient was returned to the ward. During the operation he received 1,000 c.c. salt solution infusion beneath the breast, and his condition throughout was good, the pulse varying from 62 to 92 and being 80 at the end of the operation, which required two hours.

Examination of Tumor.—A study of the specimen removed showed adenocarcinoma involving the entire prostate, the region between the seminal vesicles and the inferior surface of the excised trigone and the vasa deferentia. The capsule of the prostate and the bladder at the upper limit of the excision were free.

Convalescence.—The patient made a good recovery. The perineal wound healed tight; there was no difficulty in urination; he was able to hold urine for three or four hours at night; there was incontinence during the day.

REMARKS ON OPERATION.

As remarked above, this radical operation has been performed on six patients with one operative death. The autopsy in this case showed extensive intraperitoneal metastases and explained the cause of death. Two patients have died since the operation, one a year later from an operation for vesical calculi. Autopsy showed a small carcinomatous mass about the size of a pea adjacent to the left vas deferens. This was the only cancerous tissue found; no metastatic glands or osseous metastases were made out. The recurrence had been predicted in this case after a study of the operative specimen which showed carcinoma near the upper end of the left seminal vesicle.

The other patient died of nephritis two months after the operation. Autopsy showed that the cancer had been thoroughly extirpated, a careful search failing to reveal any malignant disease, regionary or metastatic. Numerous sections were made of the pelvic tissues. It therefore seemed evident that had the man lived he would have remained cured of the cancer.

Three patients are living and well—one ten months, one eight months and one one month after the operation. One patient has control over his urine and can hold it several hours; one has incontinence in the day, but perfect control at night; the third is still in the hospital. All have been completely relieved of the severe pain from which they suffered before operation. None of my cases were particularly early ones. With an early diagnosis and operation the operative mortality should be nil, as only the patient with extensive (unrecognized) peritoneal metastases showed any shock.

CONCLUSION.

Cancer of the prostate is quite a common disease, about one case in seven of prostatic enlargements in men

past fifty being cancerous. It is characterized by induration—often of stony hardness, and pain is frequently present. The early diagnosis may be made when there is marked induration, and the absence of the usual intravesically projecting lobes, as shown by the cystoscope; (the prostatic orifice often appears normal). The disease is often of slow growth and remains for a long time confined within the limits of the firm prostatic capsule. The operation carried out by me in six cases is necessary if a cure is to be expected; it is not difficult of performance, and furnishes remarkably satisfactory functional results. With early diagnosis the mortality should be nil and the percentage of cures large. The general practitioner should suspect every indurated enlarged prostate and the patient should be urged to submit to a perineal operation, when, if the disease is proved to be malignant, the radical operation can be done.

THE TREATMENT OF ANEURISM BY DIRECT, GRADUAL ARTERIAL CLOSURE.

REPORT ON THE APPLICATION OF THE METHOD TO A CASE OF ANEURISM OF THE ABDOMINAL AORTA.*

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RATIONALE OF TREATMENT.

The main basis for the suggestion of gradual arterial closure as a probable means of relief for certain cases of aneurism lies in three facts observed in human pathology and surgical experience:

1. Gradual closure of a large blood vessel as from the pressure of a growing tumor, so far as such pressure is concerned, is not associated with depression of vital functions nor with nutritional or other disturbances within the area of its distribution. The anastomotic current is so gradually and perfectly established that the entire absence of symptoms due to circulatory disturbances may fail even to suggest the occlusion of a large blood vessel.

2. In the larger proportion of those exceptional cases of aneurism in which a spontaneous cure occurs this results from the deposition of the laminated coagulum or so-called active clot, on the walls of the sac, and is caused by the slowing and not the complete stoppage of the blood current in the vessel (Ashurst). It may result from any accidental cause, such as the pressure of an enlarging tumor on the artery on the proximal side of the seat of disease.

3. Aside from the radical surgical procedures which undertake, where indicated, the complete exclusion of excision of the sac or its obliteration by arteriorrhaphy, the best results in the surgical treatment of this disease, have come from methods which aim at the slowing of the blood flow and the production of coagulation *en masse*. Methods which cause the formation of the passive clot at best are only followed because anatomic and other local conditions prevent the adoption of procedures designed to secure the deposition of the stratified coagulum.

These three basal propositions and the principles underlying them have long been recognized. While brilliant results in many cases of aneurism, especially those involving the arteries of the extremities, have followed

the radical procedures referred to and which are not based on these principles, yet unfortunately, the proportion of those not amenable to this form of surgical treatment is large. The usual age of patients afflicted with the disease, their depressed local and general vitality, associated organic disease, the anatomic site of the aneurism, are factors which all too frequently demand the adoption of some less radical, even if less hopeful, method.

It is not to be contended that the very gradual arterial closure induced by certain pathologic processes can be reproduced by surgical means, but it is evident that the more closely these can be approximated, within reasonable limits, by the surgeon, the better will be his results both in the avoidance of risks of sudden closure and the certainty of cure by the formation of an active coagulum.

In this connection it will be of interest to refer again to cases of spontaneous cure by accidental slowing of the blood stream. Recoveries from this cause may result in the entire obliteration of the sac, the circulation being carried on by means of collateral vessels, or

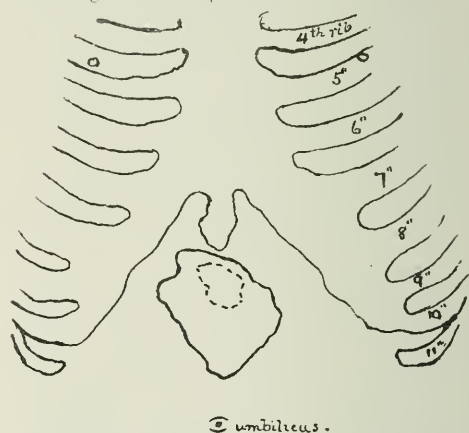


Fig. 1.—Reproduction from a tracing of outlines marked on the patient's thorax and abdomen. Dotted line indicates area of aneurismal pulsation detected by light palpation; solid line, limits of aneurismal pulsation outlined by moderately deep palpation.

a narrow channel may be left running through the tumor through which the circulation may be maintained. The recognition of the possibility of cure by the latter means is of great importance in relation to the successful treatment of aneurisms from the sac of which, or from their immediate neighborhood, arteries originate supplying vital organs and which have only very meager collateral circulatory channels. Thus, in an aneurism of the abdominal aorta from which arises the celiac axis, it is manifestly impossible to adopt any radical method of cure, and what degree of relief is ever obtained must be secured, it would seem, without the sacrifice of the lumen of this branch, for the reason that its subdivisions supply the stomach, spleen and liver and have only the slightest and most indirect collateral circulatory channels. It is thus evident that in such a case the method of cure must aim at the avoidance of the complete obliteration of the sac and the process of clot formation must be carried, if possible, only so far as to stop expansive pulsation, and to leave permanent channels through the sac, maintaining the patency of the larger arterial branches arising from the wall of the

* Read before the Alameda County (Cal.) Med. Assoc.

aneurism. In the nature of things, in these cases, the best that can be attempted is the obliteration of only such portions of the sacculatation as lie without the line of the main channel and of the blood currents to these branches; in some parts of the sac the process

active coagulium, however, will tend strongly, I believe, to remove this from the sphere of the imagination, and to show that in gradual and incomplete arterial closure lies the probable means of its attainment. To this, pathology and surgical experience lend strong reinforcement.

THE SLOWED BLOOD CURRENT.

Passing by the chemical and histologic truths concerned in the process of thrombosis as well as the several etiologic agencies not directly related to the production of the form of coagulium on which our present interest centers, I will consider chiefly the one factor most directly related to the formation of the stratified or mixed clot, viz., the slowed blood current. Although personal conjecture is associated with the statement of well-observed conditions, we shall later have an opportunity of seeing how far it is supported by recognized pathologic truths.

In the absence of other determining conditions, the formation of this coagulium begins first where the force of the blood stream is most reduced, at the margins of the eddies and pools in those portions of the sacculatation least directly in the line of the main blood current. Here the blood platelets, the leucocytes, the fibrin and perhaps, the aggregation of a few red corpuscles produce a white thrombus. For reasons which do not plainly appear, but most likely lie in various temporary conditions affecting the force and direction of the blood stream in the sac, this clot does not at once assume the form of a considerable mass, but is deposited layer on layer, more or less irregular in size and form and thickness. Blood oozing in between these layers stagnates locally and coagulates *en masse*, producing together with the layers of white thrombus the stratified, or mixed, clot.

The nature of this form of coagulium, as well as its method of production, is quite well understood, but the extent to which its formation may be carried and the conditions influencing its form and size are not so easily discovered. Obviously, however, it would seem that the extent to which this process goes on is governed by the degree to which the blood stream is slowed. Thus, if the current is gradually and continuously reduced, the clot formation will advance with the slowing stream, gradually extending from the periphery into the central portion of the sac until, if the current is all but stopped, the entire sac is filled in this stratified way. If, however, the force of the stream is not so much slowed, the clot formation will advance only so far into the more actively moving portions of the current as the force of the stream will permit the deposition of the histologic elements and the carrying on of the chemical processes incident to clot production. In other words, when the advancing clot meets a too forcible blood current the process is stayed. If the current be still further reduced, the process will advance.

If this correctly represents the relation of the extent and form of active clot formation to the main current through the aneurism, it would seem that it explains as well its relation to secondary currents to the larger arterial branches arising from the sac. The law of hydrostatics, that pressure on a confined fluid mass is equally distributed in all directions, would be an important factor in maintaining their patency, tending as it would to make the force of the flow equal toward the lesser and greater channels, and thereby exerting the same repressive influence on clot production threatening to encroach on them. The subsequent usual contraction of the clot would tend to maintain still further their



Fig. 2. — Constrictor, actual size. All parts are made of silver except the extremity placed in contact with the artery, which is made of hard rubber. Its free borders are rounded so as to reduce traumatism to a minimum. The transverse bars near this end are made as rollers to facilitate movements of the tape. The windlass permits the regulation of the degree of pressure on the artery and the barlock fixes the windlass at any desired point.

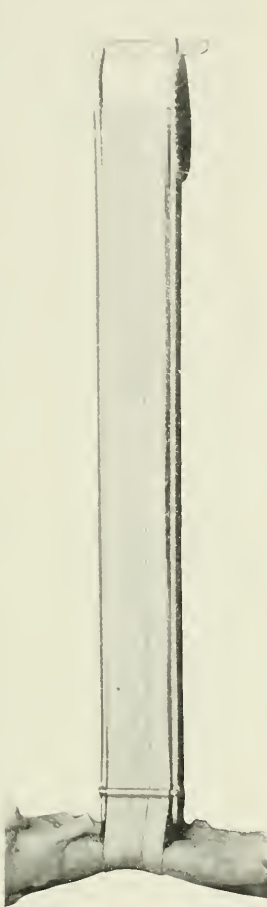


Fig. 3.—Constrictor with tape applied to section of human abdominal aorta, actual size. The lumen of the vessel is nearly closed. Note rolling out of margin of tape. The tape is removed by cutting one side as deeply as possible in the wound with angular scissors, then turning the wheel, at the same time fixing the instrument.

may only result in the strengthening of its walls. It may seem fanciful to think this a possibility or to ascribe to any artificial method such selective properties as the accomplishment of this demands. A short review of the process of the formation and deposition of the

lumen. Thus it would seem, *a priori*, that it is possible to carry on clot formation through control of the current to the extent of completely obliterating the sac or filling a large portion of it and leaving sufficient channels to maintain the circulation not only through the principal vessel, but through its larger branches as well.

Let us see if we can secure any support to this position from pathologic observation. The so-called antemortem heart clot resulting, when for any reason the heart's action is considerably retarded, does not ordinarily form in such parts of the organ as are most directly exposed to the main blood current—the center of the cavities or the valvular openings—but, if in the auricles, they form usually in the auricular appendices; if in the ventricles, in the intertrabecular spaces where the current is least forcible. If thrombosis occurs in a vein it usually begins first in the pockets of the valves where the current is slowest. So much for the general location for the beginning of clot formation.

Can the further study of this condition throw any light on the influences governing the extent to which it may be carried? The presence of the large so-called postmortem heart clot partly decolorized, partly red, occupying the heart cavities, perhaps extending through the auriculo-ventricular openings into the vessels, has been observed by each one of us. No one doubts that its presence in those localities, ordinarily the site of a fast-moving stream, is due to the very feebly flowing blood current incident to death or the complete stagnation immediately following. Why, then, in cases of pronounced antemortem white thrombus, formed while there is still considerable force to the blood stream, is it not found in those localities and why its periphery ordinarily limited to a point not far beyond the line of the most direct and forcible blood flow? Is it not due to the repressive influence of the more actively moving current beyond the limits of which it can not advance? Will not the same thing explain the fact that after ligation of an artery the coagulum extends to the first collateral branch, while in a vein with its lower blood pressure a clot once beginning to form may extend indefinitely, even to the heart?

Does not the occasional cure of an aneurism by accidental events wherein is found a channel, perhaps only a narrow one, running through the aneurismal mass and through which the circulation is continued, tend strongly to prove the same thing? To be sure, clot formation in the sac may partially break down after its complete filling, and tunneling may result with its permanent channel formation; but, on the other hand, it does not seem to be forcing matters to regard the channel as frequently the result of the continuance of a force to the blood stream of sufficient degree to prohibit the advance of the clot to the extent of entirely obliterating the cavity of the sac. Finally, my personal experience with the case of aneurism presently to be described, wherein the function of organs whose blood supply came through arterial branches having their origin in the sac was not apparently interfered with, although clot formation had advanced so far that appreciable expansile pulsation and thrill had ceased, tends strongly to confirm the position taken that the process of coagulation can be thus controlled.

THE TREATMENT DEMONSTRATED.

If the principles on which rest the suggestion of the cure in certain cases of this disease by gradual closure of the artery are sound, it only remains to demonstrate

a practical method. Two questions, especially, in this relation demand an answer:

1. Can such a procedure be followed and infection avoided?

2. Can the prolonged direct pressure necessary to induce gradual closure be made on the arterial wall without serious damage to its tunics or to adjacent structures?

In reply to the first question it may be stated that the open wound maintained patent for a number of days, perhaps involving the peritoneal cavity and requiring occasional exposure, is a matter to be seriously considered. Yet I believe that no one to-day will affirm that in a patient capable of co-operating with the surgeon, modern aseptic and antiseptic technic scrupulously followed, not only at the original operation, but throughout each subsequent treatment, is unable sufficiently to guarantee a reasonable degree of safety concerning the avoidance of infection.

As to the second question, the experience of Crile in temporary direct closure of the carotid arteries in operations on the head and neck, the experiments of Keen in temporary complete closure of the abdominal aorta in dogs, and my own series of experiments on dogs to ascertain the feasibility of gradual closure of the abdominal aorta and the effects of prolonged moderate pressure on it¹ go a long way toward proving that at least in healthy arteries, it is possible to maintain a reasonable degree of direct pressure for a considerable period of time without seriously endangering their integrity. As a further proof I desire to present the following case wherein direct pressure was applied continuously to the upper portion of the human abdominal aorta for fifty-one hours without apparent damage to the vessel. The case is unique in that it is probably the first instance wherein any such procedure has been attempted; and probably also in this case direct surgical attack was made on the abdominal aorta at a higher point in its course than has heretofore been made. That the artery was atheromatous is an additional point of interest, as my previous similar operations had been practiced on dogs with presumably healthy vessels.

I would much prefer to postpone this report until a more extensive personal experience had accrued, and my reason for not doing so at this time is that further opportunity for investigation along this particular line, as will be readily understood from the knowledge of the comparative infrequency of aneurismal disease in this locality, may be long deferred, and it seems to me that the results already attained and the lessons thus far taught are of sufficient importance to warrant their announcement.

My attention was first called to this question of gradual occlusion in 1898, in connection with the difficulties attending the necessity of formally resecting, in what seems to have been the first recorded instance, the superior longitudinal sinus. In a paper² containing a report of the above case I referred to the desirability, under certain conditions, of closing the sinus by a gradual method in order to insure the establishment of the collateral circulation, and suggested the use of specially constructed clamps. In a subsequent communication³ I stated that the "method of gradual occlusion of a sinus suggested in the original paper, with a modified technic,

1. "The Gradual Surgical Occlusion of Large Arteries: Its Relative Advantages, Together with an Experimental Inquiry as to Its Feasibility." *Annals of Surgery*, August, 1903.

2. "The Surgical Occlusion of the Cerebral Sinuses." *Annals of Surgery*, August, 1898.

3. *Id.* January, 1899.

has a probably wider range of application to the surgery of the blood vessels than was then intimated. * * *

"The importance of this in the surgical treatment of aneurisms of the large arteries, as well as in other conditions will be readily appreciated." In the fall of 1898 I had undertaken to test the practicability of gradual occlusion by the application of a clamp to the abdominal aorta of a dog, and in a paper¹ I described further experiments on dogs tending to strongly prove its feasibility.

That I am able at this time to present additional proof is due to the courtesy and professional enthusiasm of Dr. T. A. Williams, who requested me to see the patient in this case and to follow my own judgment as to operative procedure. To him also I am indebted for the privilege of making the clinical report.

History.—Male, aged 53, Greek, vegetable dealer. There is no history of syphilis nor of the excessive use of alcohol. He had scars resulting from glandular suppuration in both inguinal regions. Four years previously he had complained of distress in the epigastrium which developed gradually. In August, 1903, he underwent a laparotomy for abdominal aneurism at the French Hospital, San Francisco. What attempt at relief was made was not known to the patient. His greatest complaint later was of pain in the lower dorsal region and in the epigastrium. Four months before my visit he had become addicted to the use of opium, but subsequently was cured of this by Dr. Williams. The pain so increased, however, that the use of morphin was resumed and one grain a day had been administered hypodermically and gave considerable relief. His weight had decreased from 190 pounds, when his trouble began, to 147.

Physical Examination.—I first saw the patient in March, 1905. His general condition was fairly good. Physical examination showed unmistakable evidence of the existence of an aneurism of the abdominal aorta of large size. The peripheral arteries were not appreciably atheromatous. The usual signs of expansile pulsation and bruit were present, and even the epigastrium was seen to pulsate forcibly. A consideration of the chart (Fig. 1), reproduced from a tracing of outlines marked on the patient's thorax and abdomen, will reveal the position and relations of the aneurism and will explain some of the difficulties of the operation described. The dotted line shows the area of the epigastrium within which most superficial palpation detected the aneurismal pulsation, while the solid line represents the limits of aneurismal pulsation outlined by moderately deep palpation. It will thus be seen how close the aneurism approached to the ensiform cartilage. As nearly as could be estimated the distance was only 5 mm. The ensiform cartilage was 4 cm. wide at its base and 4.5 cm. long. The distance between the margins of the costal arch at the level of the tip of the ensiform cartilage was 10 cm.; between the tips of the eleventh ribs it was 22 cm. The size of the aneurism, as estimated by deep palpation, was 9 cm. in both vertical and transverse diameters. The lower border was 3 cm. above the umbilicus. "A cicatrix resulting from the former operation was noticeable, and its character indicated healing, accompanied by suppuration.

Operation.—Operation was performed April 5, 1905, with the assistance of Drs. T. A. Williams, A. S. Kelly and J. M. Shannon. A median abdominal incision was made extending from the base of the ensiform cartilage well down over the aneurism. It was soon evident that conditions resulting from the first operation would complicate matters and make operation much more difficult than otherwise. The parietal peritoneum, liver, stomach and omentum were everywhere adherent to each other where normally in contact. The liver, where visible in the wound, was scarcely recognizable, being of a peculiar yellowish-brown hue. It was separated from the abdominal wall, partly by tearing away its capsule and leaving it adherent to the peritoneum and partly by incising adhesions and peritoneum. The entire ensiform cartilage was removed to gain space for necessary manipulations above the aneurism. In doing so the xiphoid artery was incised and ligated. The lower border of the left lobe of the liver was incised longitudinally for about 3

cm. between catgut sutures to gain space for the hand and instruments. After separating the lesser curvature of the stomach from the liver, to which it was closely attached, the lesser omentum was perforated with the index finger and the aorta sought beneath the posterior parietal peritoneum above the aneurism. The latter was pulsating forcibly from beneath the stomach and pancreas against the hand, against which it was firmly pressed because of the limited space between the aneurism and the liver and diaphragm. This constant impact made detection of the aorta extremely difficult. Pulsation in what seemed to be the abdominal aorta from its location could not be positively determined. What seemed to be the right border of the vessel was most distinctly felt and the peritoneum over it was torn through. This was accomplished with a long-handled scarifier with which I had provided myself to be used in case the peritoneum resisted the finger nail. The index finger was then passed beneath the aorta. The peritoneum along the left margin of the vessel was torn through with the scarifier, and the finger was passed completely beneath the aorta, when it was positively recognized, not by forcible pulsation as I expected to find—in fact, the absence of this was especially noticeable, although its recognition was doubtless prevented by the constant rhythmic impact of the aneurismal sac against the examining finger—but by a peculiar whirling sensation or thrill imparted to the sense of touch by the blood current deflected from its direct course. The absence of pronounced expansile pulsation at the point of constriction is worthy of special notice as having a direct bearing on the question of the feasibility of prolonged instrumental pressure on the artery without damage to the arterial tunics, and no doubt accounts largely for the fact that appreciable injury was not wrought by this procedure. It may be accounted for by the firmness of the adventitia of the aorta.

Complete momentary stoppage of the flow of blood through the aorta caused entire cessation of pulsation in the aneurism. Considerable venous hemorrhage attended the separation of the adherent organs and the dissection of the aorta, and on this account and because of the depth of the vessel and the fact that the possibility of retraction of the superficial structures was very limited because of the rigidity resulting from the preceding inflammatory process, most of the steps of the procedure had to be carried on by the sense of touch alone. The part of the aorta reached by the finger, so far as could be determined, seemed pliable and healthy, although situated close to the aneurism. At this stage, 11:20 a. m., a cotton tape, 12 mm. wide, reinforced longitudinally along its central line by a tape 4 mm. wide and the whole impregnated with paraffin² and attached at one end to the arterial constrictor³ (Figs. 2 and 3) was passed from left to right beneath the aorta on the point of a hook-shaped instrument which was guided by the index finger beneath the vessel. This proved to be the most difficult part of the operation. The free end of the tape was then attached to the constrictor, which was tightened so as to make apparently a very slight impression on the aneurismal throbbing. More was not attempted for the reason that the general condition of the patient at this time was not encouraging, and it was thought best to avoid doing anything that might still further depress him. Gauze packing loosely applied was arranged spirally around the constrictor and extended from the aorta out through the skin opening to prevent contact of the metallic parts of the instrument with the viscera which would have caused local necrosis, to control venous hemorrhage and to cause adhesions to be formed around the constrictor thus to shut off the general peritoneal cavity from the site of operation in case, notwithstanding our efforts at its prevention, sepsis should occur. The constrictor thus ap-

4. This arrangement of the tape was made as tending to cause the borders of the wider tape to flare outward, thus reducing to a minimum the amount of traumatism due to the impact of the pulsating arterial wall against the tape margin. The instrument also was designed to effect the same end. Paraffin was used to prevent adherence of the tape to the vessel. The portion of the tape only which is to lie in contact with the artery—the whole being sterile and dry—should be merely dipped in boiling paraffin and the excess thoroughly removed from the tape.

5. For several valuable suggestions in regard to the constrictor I am indebted to Mr. Ole Olson, surgical instrument manufacturer, of Oakland, Cal.

plied rose and fell with each aortic pulsation. The abdominal incision was closed around the gauze and instrument. The latter was covered with loosely fluffed gauze and cotton and the dressings so arranged that no pressure would fall on the constrictor. The patient stood the operation comparatively well. He was soon conscious after its close. He vomited slightly at this time.

Postoperative History.—April 5, 4:20 p. m.: The patient was in good condition; pulse, 84. There was considerable seepage of blood, and the wound was redressed. The constrictor was tightened until a decided impression was made on the aneurismal pulsation and on the femoral pulse. After this the pulse was 80. The patient was not distressed by this procedure. At 10 p. m. he was in good condition; pulse was 84,

lately on account of the motion transmitted to the neighboring parts by the constrictor and the aortic pulsation. The patient said that he did not feel different than before this last increase in the degree of constriction. After this the pulse was 84 and the man rested quietly. At 5 p. m. he was in good condition. He vomited twice without much retching. The pulsation in the femoral artery was more pronounced, but still very feeble. Deep palpation over the aneurism revealed a feeble thrill. The tapes were tightened until the thrill disappeared; this very slightly reduced the force of the femoral pulse. The patient did not complain much of pain. There was some slight hic cough. After tightening the tape the pulse remained at 84. The extremities were warm; there was no paralysis of motion or of sensation in the lower limbs.

April 7, 8 a. m. The general condition was excellent; the patient passed a good night. The femoral pulse was larger, and pulsation over the site of the aneurism was noticeable, but a thrill was not discernible. Inasmuch as I was of the opinion that the constrictor was applied below the celiac axis, and being emboldened by Keen's report of a case wherein he applied a ligature to the abdominal aorta, "whether above or below the celiac axis was not quite certain, but it was surely applied above the renal and mesenteric arteries," without prolonged circulatory disturbance, the constrictor was further advanced and the femoral pulse abolished. Pulsation over the site of the aneurism was less pronounced, but still discernible. It was not expansile, however, nor was a thrill discoverable. After constriction was complete the patient became restless and complained of pain in his back and tingling in his lower extremities. The pulse before final constriction was 76; a few minutes later it was 78.

Unfortunately the patient's condition grew rapidly worse following this treatment, and I was summoned to the hospital at 2:15 p. m., when he was moribund. His pulse was rapid and feeble and just perceptible at the wrist; his countenance was pale and respirations shallow. The tape and constrictor were immediately removed, no hemorrhage resulting; the gauze pack was left *in situ*. This, together with active stimulation, failed to give relief, however, and the patient died at 3 p. m., less than an hour later.

Remarks.—Inquiry elicited the fact that, shortly after the closing of the constrictor, the patient became very restless and complained of pain in the lower limbs, and that after only ten minutes had elapsed there was present motor and sensory paralysis in the same

parts. The knees, legs and feet became cold, but the thighs retained considerable heat.

After the operation the patient passed urine four times: April 6, 1 a. m., 12 oz.; 2 p. m., 12 oz.; 5:50 p. m., 15 oz.; April 7, 8:50 a. m., 14 oz. A sample of urine, a mixture of the second and fourth urinations, gave the following result on examination: Sp. gr. 1020, strongly acid, no albumin or sugar, heavy sediment of urates, urea, 1.5. Microscopic examination showed urates, no pus, blood or casts. Pain and restlessness were controlled by hypodermics of morphin sulphate, gr. $\frac{1}{2}$, and atropin sulphate, gr. $\frac{1}{75}$, to which dose the man was accustomed. One of these hypodermics were given on April 5, three on the sixth and one on the seventh, besides another of $\frac{1}{4}$ gr. morphin sulphate on the seventh. This quantity of the

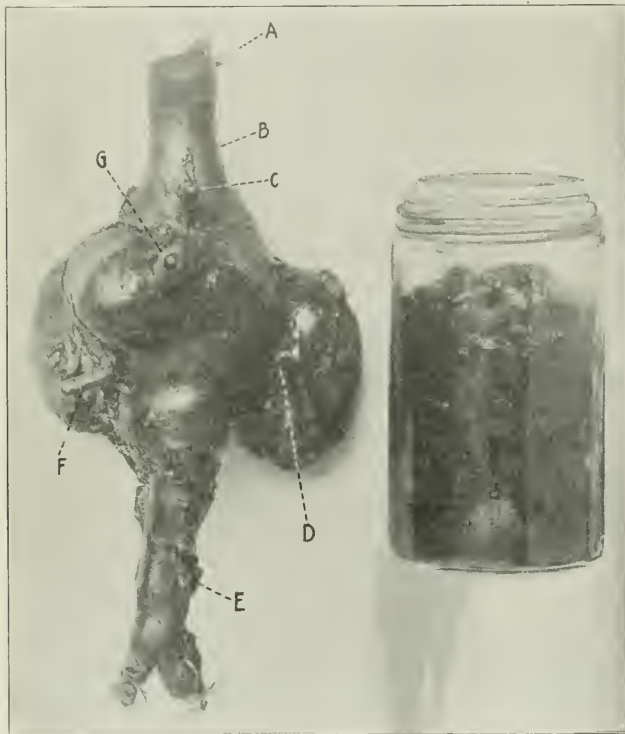


Fig. 4.—Aneurism and coagula removed from sac. One-fourth actual size. A. Phrenic artery. B. Site of application of constrictor. C. Celiac artery. D. Left renal artery. E. Inferior mesenteric artery. F. Right renal artery. G. Superior mesenteric artery.

full. Pulsation in the aneurism was about as forcible as before the afternoon treatment. The windlass was tightened until there was a decided lessening of force of the femoral pulse and pulsations in the aneurism were just appreciable. The constrictor had a strong tendency to bend downward and to twist from left to right.

April 6, 10 p. m.: The patient had a comfortable night, sleeping well. Temperature was normal; pulse, 84. He had no desire for food or drink. There was no paralysis; pulsation in the femoral artery was more pronounced than immediately following last constriction, but not so marked as after the previous treatment. The radial pulse was full. Constriction of the aorta was advanced so as to leave a just perceptible femoral pulse. This caused the aneurismal pulsation apparently to disappear; but it was difficult to determine this abso-

anodyne averaged, however, only about what he was receiving prior to the operation. The maximum temperature on April 5 was 99.3 F. (by mouth); on April 6, 100.4; on April 7, at 5:20 a. m., 98.9; at 11 a. m., 99.2; at 1 p. m., 102.2. This last temperature was evidently due to immediate autemortem influences.

Autopsy.—Examination of the abdomen only was permitted. The operative incision was found to be approximately 12 cm. This incision and the entire operative wound and parts adjacent thereto had apparently remained uninfected. There was no hemorrhage, nor was any necrosis of viscera discovered. The intestines and peritoneum were not injected. The kidneys were congested and had the gross appearance of incipient interstitial nephritis. The spleen was congested; the gross appearance of the liver was normal. The aneurism (Fig. 4) extended from just above the celiac axis to 6 cm. above the bifurcation of the abdominal aorta. Its total length was 12 cm.; its width, 12 cm.; (these measurements were taken after the sac was removed from the body and artificially distended.) It was divided into three compartments, one in the median line extending forward 8 cm. from the spine; one compartment on each side of the spine lay alongside of the vertebral bodies. The one on the left extended vertically 7 cm. and that on the right 8 cm., each being about 4 cm. wide. The bodies of the twelfth dorsal and first lumbar vertebrae were eroded, the latter being destroyed to a depth of about 2 cm. and the former somewhat less. The aneurismal sac was attached to the spinal column. The celiac axis, superior mesenteric and right and left renal arteries around these eroded areas arose from the sac. The entire abdominal aorta with aneurism was removed.

A close examination of both internal and external surfaces of the aorta failed to reveal the site of the application of the constrictor. In my dog experiments a zone of ecchymosis discovered externally in the adventitia and minor areas of erosion of the intima internally plainly marked the site of the tape and constrictor. No such evidence of violence existed in this case. Only after the specimen had been immersed some time in a weak formalin solution did a relatively pale transverse zone, discernible on the external surface only and approximately the width of the tape, mark the place where it had surrounded the artery. It was thus seen that the constrictor had been placed about 15 mm. above the upper margin of the aneurism and 25 mm. above the celiac axis. The only evidence of traumatism discernible in the neighborhood was such as was presumably due to the removal of the specimen postmortem.⁷ A number of small superficial atheromatous areas were discernible in this part of the aorta. Several very small ones were beneath the site of the constrictor.

The aneurismal sac was moderately well filled with large masses of laminated coagula aggregating 350 c.cm. in volume. They were all of recent origin and of different consistency, being most firm where lying in the more direct line of the blood current. Besides these masses there was a small amount of fluid blood and a trilling amount—not more than 1 c.c.—of passive clot.

Pathologic Report.—To Dr. Pauline S. Nusbanmer I am indebted for the following report on the pathologic specimens, which were submitted to her for critical examination:

"In the specimen of aneurism of the abdominal aorta I find no evidence of traumatism, neither macroscopically nor microscopically, at or immediately adjacent to the point of compression of the artery, other than that produced by manipulation during and subsequent to autopsy, and that consists of slight lacerations only. The sclerotic condition of the artery at the site of the application of the constrictor is readily detected by the naked eye, and on sectioning there is seen the thickened intima with the deeply-stained elongated cells of the atheromatous plates, but no round-cell infiltration as one would

expect to find in inflammation following injury, nor any necrotic areas such as would be produced by pressure. Eight sections of the aorta in all were made, as nearly as could be ascertained from different areas directly under the tape and constrictor, five from beneath the former and three from beneath the latter.

"The clot, of which two different areas were sectioned, is decidedly stratified and is not of the passive variety. It must be borne in mind that the time was short for many cellular changes to take place in either the vessel walls or the coagulum."

The cause of death, from a consideration of both the case history and autopsy findings, may be reasonably attributed to the inhibition of the functions of the abdominal viscera from the withdrawal of their blood supply.

Notwithstanding the fact that this patient died, the case as a whole warrants a degree of enthusiasm as to the outlook for the procedure. The relatively small amount of distress caused the patient by the presence of the constrictor and its subsequent manipulations; the apparent avoidance of infection; the safe removal of the instrument; the formation of a large mass of laminated coagulum; the apparent maintenance until entire closure of the vessel, of the lumen of the arterial branches arising within the sac distributed to vital organs and without a dependable collateral circulation; but above all the freedom of the aorta itself at the site of closure of perceptible evidence of traumatism, inflammation or necrosis due to prolonged pressure on the vessel—all these facts, I believe, form the basis of a strong hope that a larger percentage than heretofore of patients with aneurismal disease may be brought within the range of relief. If future experience shall fulfill that hope, the method will undoubtedly find its largest scope of usefulness in the treatment of aneurisms of the abdominal aorta wherein ligation is almost necessarily fatal, and other methods are either impracticable or have proved themselves inefficient or fraught with grave dangers.

Certain additional lessons are taught by this experience. The constrictor, under ordinary conditions and with a healthy or but slightly diseased aorta, can be left in place much longer than in this instance. I would not now under such circumstances hesitate to apply it for four days. This will permit the very gradual closure of the artery with the formation of a more firm coagulum. This is of special importance in relation to the treatment of aneurisms which arise high up in this vessel and from which arterial branches arise from the sac to be distributed to the abdominal viscera. It will more perfectly assure maintenance of their lumen. It will also safeguard against failure from the breaking down of the clot and against embolism when the full blood stream is again allowed to flow through the artery; the gradual relaxation of the constrictor after its work has been performed will be an additional preventive of this and will be permissible in view of the proven tolerance of the vessel to a more prolonged contact with the instrument. In the case of its application to the carotid artery, where such an accident would be disastrous, the procedure, in order to avoid this presumptive risk, may best be used as a prelude to ligation after expansive pulsation in the sac has ceased and the cerebral functions indicate the formation of a competent collateral circulation. When we consider that over twenty-five per cent. of cases wherein a single common carotid artery is ligated develop cerebral disturbance and that above one-half of those patients die (Eriksen), and that this result is probably due to failure of the prompt establishment of the anastomotic circulation, this risk does not seem so formidable. The evidence that this necropsy

7. If, by any possibility, a small transverse laceration internally, found to be located at or just below the site of the lower border of the tape, occurred other than during postmortem manipulation, it could only have been due to a defect in the instrument, which was easily corrected, and it need not, therefore, be taken seriously. A lack of sufficient space beneath the crossbars, in the presence of an excess of paraffin on the tape, caused a bludging of the latter beneath the bars and an unnecessary amount of pressure on the artery during the removal of the tape.

afforded that practically no clot formation followed complete closure of the artery emphasizes the advantages of gradual over-sudden occlusion.

SCOPE OF THE TREATMENT.

It is with much hesitation that I refer to a possible larger scope for this method in the treatment of aneurism of arteries other than the abdominal aorta, in view of a single operation in man wherein this procedure was put to actual test. Inasmuch, however, as this experience seems to warrant a hopeful attitude as to the usefulness of the method, I may be permitted to take this occasion to point out other possible fields for its successful employment.

Among cases of aneurism wherein surgical attack can be entertained, it seems chiefly applicable: (1) When for any reason, local or systemic, radical operation is inadmissible; (2) In cases wherein it is feared the collateral circulation will not be promptly established in case of complete, sudden closure of the artery. It is to be recalled in this connection that the proportion of patients afflicted with aneurismal disease is large wherein the heart is fatty or its force impaired from other causes, the blood vessels are atheromatous and wanting in the usual elasticity and for numerous reasons the general vitality is reduced. Experience abundantly proves that in just this class of patients the prompt opening of sufficient anastomotic channels to carry on the circulation after ordinary ligation most frequently fails to result, and gangrene, cerebral or other disturbance according to the artery operated on is to be apprehended. In this class, gradual closure, complete or partial, if any operation is permissible, would seem to offer advantages. (3) In those cases wherein heretofore ligation has offered the best prospects, but in which it is desired to avoid the risks of failure and special dangers to life associated with that method. In ligation on the cardiac side of the aneurism close to the sac, (the Anel ligation) we must face all the dangers incident to passive clot formation, e. g.: sloughing of the sac, infection and suppuration of the sac and contents, secondary hemorrhage, gangrene, subsequent softening and breaking down of the clot and consequent failure to cure. Ligation on the distal side (Brasdor operation) in addition to these has its own special danger of rupture of the sac due to the sudden local increased blood pressure. In ligation on the cardiac side at some distance from the sac (Hunterian ligation) secondary hemorrhage, gangrene and suppuration around the sac are to be feared or failure may result from a too free anastomotic circulation forming between branches of the artery arising above the point of ligation and those between the ligature and the sac.

Inasmuch as gradual arterial closure can be carried on with much less traumatism to the arterial tunics than ligation, it will be more generally admissible to apply the constrictor closer to the sac when the presence of atheroma is to be expected, than is the case with the ligature. If this is done, then gradual closure by its control of the blood current, can secure the advantage of the Anel ligation over the Hunterian of the avoidance of the formation of a too free anastomotic circulation around the ligature, at the same time avoiding the dangers resulting from passive coagulation incident to the former method. It will have the special advantage over the Hunterian ligation because of its laminated clot formation in the sac without its risk of failure of too free collateral circulation forming around the ligature. It will avoid the risk of rupture of the sac in the Brasdor

operation by doing away with the sudden strain on the walls.

It would seem that gradual closure, partial or complete as indicated, secures the desirable features of all these ligation methods, while obviating their special risks. Experience must determine whether there are associated with it disadvantages peculiar to itself which outweigh its apparent claims for consideration over the ligature methods. Equally with them it will share the disadvantages resulting from large arterial branches arising from the sac. In those cases wherein these supply vital organs the decided advantage lying with gradual occlusion has already been pointed out. The application of two constrictors in certain of these cases of aneurisms with aberrant branches—one above and one below the sac—is one of the possible future developments of the method.

911 Market Street.

CASES OF FECAL IMPACTION OF THE RECTUM.*

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My reason for presenting for your consideration a few cases of fecal impaction of the rectum is that they illustrate the present great advantage which we possess in the proctoscope as a means for the relief of this condition. Those more or less authoritative works on diseases of the rectum uniformly recommend that the subject of impaction of the rectum be subjected to general anesthesia and irrigation for the removal of the fecal mass. These means should be regarded as hazardous, barbarous and mussy.

The causes of fecal impaction of the rectum are several. Foreign bodies in the rectum, stricture or tumors, within or without the rectum, obstructing its lumen, immobilization of a portion of the rectal wall as a consequence of its adhesion to adjacent viscera, defective innervation, diminished intestinal secretion, the ingestion of improper foods and voluntary or involuntary neglect to make attempts at defecation.

The patient may present the history of gradually increasing difficulty of evacuation of the bowel, or he may report that for a period of a week, or two or three weeks, there may have been no dejecta. Or, on the other hand, he may report that for some time he has been the subject of diarrhea alternating with periods of constipation, the diarrhea being provoked by the presence of the fecal mass. The patient will have a furred tongue, rise of temperature, a quick and rapid pulse. I have seen patients, however, in which there was depression of both temperature and pulse. The intestine will be inflated by reason of the presence of gases, the patient will complain of cramps and a sense of heaviness and weight in the lower abdomen. Often there will be no sensation in or about the rectum excepting sacral backache, and this is usually accompanied by pain and tenderness along the course of the sciatic nerves. The diagnosis may be made by means of the proctoscope or by digital examination of the rectum.

The treatment consists of elevation of the patient's hips and the introduction of the anoscope or the proctoscope, and subsequently the withdrawal of the obturator and the illumination of the rectum by means of the best light available. I have found no more satisfactory

* Read before the American Proctologic Society, Pittsburg, May 12, 1905.

device than this candlestick (Fig. 1). The electric light here pictured might prove convenient (Fig. 2). Through the proctoscope (Fig. 3), by means of forceps and spoon, without anesthesia and without manual contact with the rectum's contents, the patient may be relieved.

CASE 1.—The first case which I report is that of a woman, 33 years of age, of Canton, Ohio, who had recurrent attacks of fecal impaction as often as once or twice a year. The only way in which the obstruction could be prevented was to secure daily a liquid stool. With much labor and by means of general anesthetics and irrigations her previous attacks had been relieved. Digital examination discovered an obstruction situated about $1\frac{1}{2}$ inches above the levator ani muscle of more or less diaphragmatic form and having a circular aperture. The patient was put into the knee-chest position, the proctoscope introduced, the obturator withdrawn, the field commanded illuminated by means of the candlelight and the obstruction observed. This was seen to be a congenitally malformed valve; it presented a drumhead appearance, and in its right half a circular aperture through which could

distress and the presence of a mass, led her physicians to suspect a rectal metastasis. Examination revealed fecal impaction. The mass seemed to occupy the whole pelvic cavity. Inquiry disclosed that the woman had been subsisting on a milk diet exclusively. The feces were of an implastie, putty-like consistency, and weighed about $2\frac{1}{4}$ pounds. This patient was relieved as were Cases 1 and 2.

CASE 4.—I was called by Dr. B. to see a woman, 32 years of age, who reported that since an operation for ventral fixation of the uterus his patient had shown need for laxative medicines. This patient's rectum was impacted and obturated by the presence of scybalous masses, which weighed $3\frac{1}{4}$ pounds. I believe that in this case the ventral fixation of the uterus anchored the anterior rectal wall immovably in such a degree of suspension that the woman could not effectively bear down. Without distressing her the rectum was readily emptied.

Recurrence is to be prevented largely by the removal of the mechanical cause: In Case 1 by division of the obstructing valve, Case 2 by hysterectomy; in Case 3 there was no organic or mechanical cause; and in Case 4, where the obstipation was the result of the ventral fixation of the uterus, it was inadvisable to resort to surgery. The physical obstruction having been removed, in this class of cases the patient's diet should be limited to meat, fruits and those vegetables which contain but little starch. Albolin should be given daily, the patient required to drink quantities of water and to employ the enema frequently. Proper bathing, massage and open-

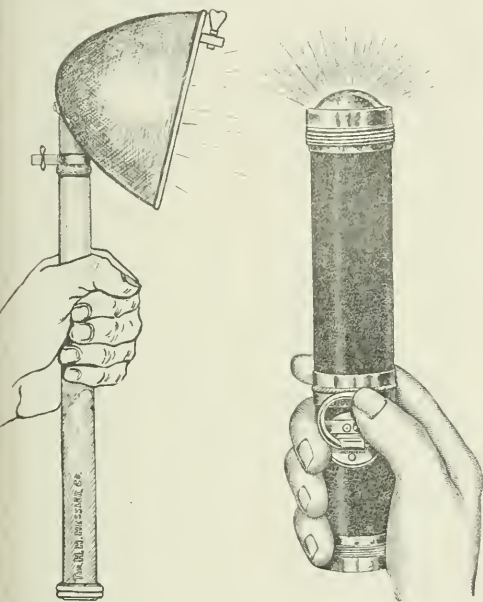


Fig. 1.—The candlestick for rectal illumination.

Fig. 2.—The common, portable, storage-battery, pocket electric lamp.



Fig. 3.—The light being directed into the rectum, feces may be removed in the same manner as a foreign body.

air exercises should be insisted on. Cathartics are to be condemned.

I believe the report of these cases calls attention to an obviously simple method for the relief of rectal impaction of feces, and I believe that the more general practice of proctoscopy will render obsolete the employment of irrigation and chloroform or ether in the treatment of this condition.

THE BROAD TAPEWORM IN MINNESOTA, WITH THE REPORT OF A CASE OF INFECTION ACQUIRED IN THE STATE.

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MINNEAPOLIS.

be observed the impacted feces. This malformed valve was now divided and the feces removed by means of the forceps and the lithotomy spoon.

CASE 2.—I was requested by Dr. B. to see a woman of 40 years of age, at her home, on the evening of Oct. 9, 1898. Digital examination discovered fecal impaction of the rectum, from which $2\frac{1}{2}$ pounds of scybalous feces were removed, as in Case 1, after breaking up the masses by means of long-handled scissors. The cause of the obstruction in this case was a fibroid uterus of such size as to extend from the perineal body to above the sacral promontory, thus effectually preventing the downward and backward excursion of the anterior rectal wall, which is an essential feature of voluntary attempts at defecation.

CASE 3.—In October, 1901, Dr. C. asked me to see his aunt, aged 62 years. I was told that some five or six weeks previously this patient had been operated on for the removal of sarcoma of the tongue. Her obstipation, pelvic and abdominal

In the last edition¹ of his text-book Osler says concerning the broad tapeworm of man (*Dibothriocephalus latus*). "So far as I know it has not been found in the United States except in a few imported cases." Max Braun,² in describing the distribution of this species

1. Sixth edition, p. 29.

2. "Die Thierische Parasiten des Menschen." 1903.

throughout the world, quotes one case as having been reported from North America (Philadelphia). Ward³ puts it also among the species "recorded from man in N. America, but probably acquired elsewhere." These citations give a fair epitome of the opinion of the best authorities in both medicine and helminthology on the occurrence of this species in America. I believe, however, that in this part of the country, which has a considerable Scandinavian, Finnish, Polish and German population, the worm is very much less rare than is indicated by the opinions quoted. Three cases in Minnesota have come to my knowledge in the past year, all occurring within one year in one town and in the practice of one physician. The worms were secured in all cases and sent to the University of Minnesota, where they are preserved, so that there remains no room for doubt in regard to the species involved.⁴

Dr. Owen W. Parker, Ely, Minn., has not only forwarded these specimens obtained by him to the university, but has very kindly furnished me with all the clinical facts obtainable concerning the cases and given me free permission to make use of such facts for publication. I wish here to make full recognition of my indebtedness to Dr. Parker's courtesy in this matter and to give him full credit for all the clinical facts recorded.

The patients in two of these cases were Finlanders, and the third case occurred in a child of Finnish parentage, who was born in Minnesota and had never been out of the state. This latter case is of exceeding interest, since there can be no question that the infection occurred in Minnesota, and it therefore demonstrates the fact that the broad tapeworm now has a foothold, at least locally, in this country. The facts of significance in the history of the case are as follows:

CASE 1.—*Family History*.—E. P., male, was born April 25, 1902, in Ely, Minn. His parents were born and reared in Finland. The father came to this country in 1891. Three years after coming from Finland he passed a tapeworm (*Dibothriocephalus*?) He had been ill for a year before, had lost in weight, became anemic and suffered from abdominal pains. After the expulsion of the worm he quickly recovered his health and has since been well and has shown no symptoms of infection.

History of Case.—The patient's health began to fail in February, 1904. He did not thrive or gain in weight, became anemic and gave frequent indications of abdominal pain. In August the mother noticed segments of tapeworm in the child's stools and called the physician who successfully treated him. The child has since been perfectly well.

The worm expelled Aug. 9, 1904, measured 7 feet in length and is a typical specimen of *Dibothriocephalus latus*. The scolex was secured and measures 1.75 by .9 mm. The parents say that the child had eaten many times of fish caught in the lakes about Ely and had also eaten salt fish, probably from Lake Superior, but deny his ever having eaten any imported fish.

Infection by the broad tapeworm occurs through the ingestion of the larvae (plerocercoid) embedded in the flesh of certain fresh-water fishes. No less than ten different species of European fishes are known to serve as intermediate hosts, and any of these may therefore transmit the infection. The remote possibility that the infection of the child might have come from eating some imported European fish seems to be ruled out by the statement of the parents that he had never eaten

any such fish. I am informed also by dealers that all of the fish which is imported and eaten by the Scandinavian peoples is salt-water fish. The infection could not have come through imported fish therefore, and there seems to be no possible escape from the conclusion that it was acquired from native fish, caught probably in one of the lakes near Ely or possibly in one of the Great Lakes.

It may be idle perhaps to speculate at this late date and in the absence of any detailed knowledge of the facts in regard to this patient's father. One or two suggested inferences may, however, be pointed out. As *Dibothriocephalus latus* is the most common tapeworm among the Finns it is probable that it was the species present in his case. As he had been in this country three years and had complained of being unwell only one year, and *Dibothriocephalus latus* is a very rapidly growing worm, the average rate of growth being as shown by various experimental infections of man not less than five to nine c.m. *per diem*, it would appear improbable that he could have become infected before leaving Finland and not have felt any symptoms within two years after arriving in this country. Without the case of the child's infection—which was surely acquired in Minnesota—this inference would have little significance, but in view of that case, this becomes somewhat more worthy of attention as indicating the probability that the infection of the father may have been acquired in Minnesota.

Concerning the two other Minnesota cases the following data may be given:

CASE 2.—*History*.—A. K., Finlander, male, aged 22, farmer in Finland and woodsman in Minnesota, was in the habit of eating much fish, often not thoroughly cooked. He had already begun to be unwell before leaving Finland, two years previously, and had gradually grown worse. His symptoms, when admitted to Shipman Hospital, Jan. 5, 1904, were headache, anemia, accelerated pulse, marked weakness so that he could not climb stairs, and palpitation. His appetite was good and he had no abdominal pains or other abdominal symptoms. He was muscular and well developed, not emaciated. The mucous membranes were pale, and the skin was of a peculiar lemon-yellow, very suggestive of pernicious anemia. There was hemic murmur and pulsation in jugulars. Blood count 1,000,000 erythrocytes, leucocytes not recorded; poikilocytosis. "In fact," writes Dr. Parker, "the blood specimen looked identical with one of pernicious anemia." After some observation and study of the case, the patient was put on anthelmintic treatment and the worm expelled. His recovery was rapid; in six weeks, when he left the hospital, he had regained his strength and color and his blood count was nearly normal, erythrocytes 4,500,000. No further record of patient has been obtainable since his discharge from the hospital. The worm (worms?) expelled Jan. 23, 1904, consisted of many (nearly 20) short pieces of a total length of 31 feet 7 inches. The scolex was not found.

This case is very interesting from the medical viewpoint, since it illustrates so well the pathologic effect resulting in some cases from *dibothriocephalus* infection and the necessity in all cases of apparent pernicious anemia of examining the feces for tapeworm eggs, since the segments of the worm are voided in rather long chains at infrequent intervals and may thus easily be overlooked.

CASE 3.—The remaining Ely case furnished a very incomplete history. Patient was a Finnish woman, aged 35, somewhat anemic and complained of colicky pains in abdomen at times and some hyperpyrexia. After expulsion of worm her health improved and abdominal pains ceased. The worm (worms?) expelled Oct. 25, 1904, was in pieces, having a total length of about 20 feet, but no scolex was obtained. In this case we have no data which in any way indicate whether the

3. "Precision in the Determination of Human Parasites." THE JOURNAL, A. M. A., 1903, p. 705, et seq.

4. Beside these specimens procured in Minnesota, there is in the Pathological Museum of the University of Minnesota a specimen of the broad tape-worm procured about three years ago from a Japanese patient in the Northern Pacific Hospital at Missoula, Mont.

infection occurred in this country or before her immigration from Finland.

A question which is at once suggested by these cases is whether the general freedom from the broad tapeworm enjoyed by native Americans is to be regarded as evidence of the absence of the species from our fauna or whether such freedom should be credited chiefly or solely to the American methods of preparing fish for food being such as to destroy any larvæ which they may harbor. For the production of infection it is necessary both that the fish eaten shall contain the larval worms and that it shall be eaten uncooked or only partially cooked. The American methods of preparing fish for food make it possible therefore to have infected fish and yet no resulting infection of man. In fact, larvæ of *Dibothriocephalus* do occur in American fishes. I have obtained them from fish caught in the Great Lakes, but without feeding experiments to rear the adult worm from the larvæ it is impossible to determine the species of *Dibothriocephalus* and the probability is in favor of such larvæ being of some species other than *latus*—the parasite of man.

It is, however, naturally impossible that there shall be larval worms in American fish without the presence also of the adult worm living in the vicinity in its definitive host. So far as we know the adult *Dibothriocephalus latus* is extremely rare in man in America generally, and there are no reports of its being found in American dogs, cats or foxes—the other animals which are known to serve as definitive hosts for the parasite. Unless the adult worm is much more common than we have reason to believe we can not expect the larvæ to occur at all abundantly or generally in American fish. The dearth of American reports regarding cases of parasitism both of man and animals leaves room for much uncertainty in regard to the accuracy of any such general conclusion as this, however, and we are by no means justified in denying the possibility that the species may be autochthonous in this country and as widely distributed as it is in Europe. On the whole, however, I regard it as much more probable that a merely local infection of the fishes has occurred resulting from the discharge into some of the lakes near Ely of feces from some imported case of *Dibothriocephalus latus* infection. That such infection should have occurred is not surprising in view of the large Finnish population of the region, the frequency of tapeworm infection among the Finns, the fact that the sewage from the town is discharged into a lake, and the large number of species of European fish which are subject to infection by the larval worms. It is unfortunate that the stringent regulations adopted by the government to prevent the introduction of objectionable species of animals and plants are by the nature of the case not capable of enforcement against intestinal parasites.

It is also to be regretted that cases of infection by intestinal parasites are not generally reported by the physicians under whose observation they come so that they become a matter of permanent record available for statistical purposes. Although the accurate determination of the species often requires an amount of technical zoological knowledge which the physician does not have at his command, this only makes it so much more important that the specimens should be preserved and sent to some center where positive determinations can be made and recorded.⁵ If medical practitioners generally could

be induced to do this it would be the means of accumulating much useful knowledge concerning animal parasitism in this country, a subject that has heretofore received far too little attention from physicians. We need to know more fully what human parasites occur in America, their frequency, their regional distribution, the sources of infection and the pathologic effects which they produce. Every case accurately determined and put on record is a contribution toward this end.

Now that it is shown that infection of American fish by the larvæ of *Dibothriocephalus* is possible and has occurred locally, it is important that all possible measures shall be taken to prevent the infection from becoming widespread. To this end the physician's influence should be exerted wherever necessary to prevent the eating of fish food not thoroughly cooked and to prevent the feeding of raw fish to domestic animals. Where a case of infection by the broad tapeworm is known to exist the thorough disinfection of all fecal discharges should be carried out to prevent the possibility of living eggs being carried into any stream or lake. In cases of *Dibothriocephalus* infection all possible data should be gotten which may tend to show where the infection was acquired.

INSANITY AS A RESULT OF HYSTEROTOMY AND OÖPHORECTOMY.*

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Gynecologists have generally accepted the hypothesis that the ovaries influence the development of the brain and that their removal is generally followed by consequences disastrous to that organ. Many things have contributed to this opinion. In a great many cases insanities do follow operations for the removal of the pelvic organs. Dudley¹ voiced the opinion of gynecologists when he said: "It would seem as if the ovaries, and probably the testicles, add something to the system which is necessary for the individual's complete development, and by removing the ovaries or testicles you deprive the system of something that causes a perversion of nutrition."

Again, it is the belief that the early removal of the ovaries and testicles causes changes in character in man and in the lower animals. This is true in so far as the sexual instinct is obliterated, and as the sexual instinct profoundly influences the course of life, such as, for instance, the maternal and paternal instincts, the desires for pleasing the opposite sex and the battling with the world with the object of gaining a home, wife and children, the individual is changed to that extent, but there is nothing to show that the early removal of the generative organs in either sex diminishes mental vigor, intellectuality, or is conducive to insanity or to mental degeneration. The doctrine that the ovaries secrete some substance necessary for the preservation of the integrity of the brain will not, of course, hold good for the uterus, and it is well known that the same psychoses which follow operations on one follow operations on the other. Disease of the ovaries, which gradually destroy their function, is rarely followed by insanity, but the operation for the removal of the diseased and destroyed ovaries is often followed by mental disease.

Against the theory that the ovaries are necessary for the preservation of the mental faculties is the fact that

* Read before the New York Psychiatric Society.

5. I will undertake willingly to receive specimens of human intestinal parasites from physicians in Minnesota and adjacent states for determination. All specimens should be carefully preserved, and as full data as possible should be sent with them.

1. A. Palmer Dudley: "The Trend of Gynecologic Work To-day," THE JOURNAL A. M. A., Dec. 12, 1903, vol. xli.

many operations of a major kind are not followed by insanity at all. The fact that many women go through the menopause without mental symptoms can not be urged as an argument either way, because, though the ovaries cease to ovulate after the menopause, they might still secrete some substance beneficial to the nervous system. Insanity may follow any operation.

Piquéé and Briaud² state that all the surgeons taking part in the discussion of the Société de Chirurgie in 1898 were unanimous in the conclusion that operations on the female genital organs did not predispose to psychoses any more than other operations did. Previous to this, in 1891, the surgeons who took part in the discussion of the Congrès de Chirurgie reached the same conclusion. In this Piquéé and Briaud agree. I am not prepared to accept this view of the subject. I believe that insanity does follow more frequently from operations on the pelvic organs than from any other operation. There are reasons for this to which I will refer later.

The forms of insanity which follow operations on the pelvic organs are, first, the toxic insanities. These psychoses have no place in this article because they are caused by toxemia and, therefore, have no direct relationship to the removal of the pelvic organs.

The organic insanities are paranoia, melancholia, premenstrual delusional insanity, periodic erotic mania and paresis. Paranoia, of course, is not caused by any operation. The individual is born a paranoiac, the operation simply hastening the development of a disease ready to exhibit itself under suitable conditions. Nor can paresis be regarded properly as a postoperative psychosis. The syphilitic basis must be present in this disease. The operation with its exhaustive consequences simply develops a disease already present.

The causes for insanity, following operations on the pelvic organs, are, first of all, heredity and congenitally defective brains. I do not believe it is possible for any psychosis to develop after any operation on the pelvic organs in a healthy brain.

The psychologic causes are not by any means unimportant—the fear of death from the operation, disappointment at not being able to bear children, and the consequent curbing of the maternal instinct, the fear of the loss of the husband's love, the fear of becoming cold and indifferent to the husband, and the fear of acquired masculinity—all exert a powerfully depressing effect on the mind, and contribute, in a brain predisposed to insanity, a great influence in developing psychoses.

Such physical causes as anemia, neurasthenia and the breaking down of the general health from long-continued disease, also influence a tendency to the development of a psychosis. In almost all cases the patient has suffered for months and even for years from an exhaustive disease before operative procedures are advised, and this exhaustion and malnutrition is certainly influential as a causative factor in insanity. Surgical shock is by no means an unimportant cause.

My position on this subject is that the ovaries and uterus have nothing to do with the preservation of the integrity of the brain, and that their removal alone never causes insanity; that the insanities which follow operations on these organs depend on a hereditary tendency to insanity, the psychologic causes and the physical causes, and the surgical shock already referred to, but that the principal cause of all is the congenitally defective brain.

THE NAUHEIM BATHS AND TREATMENT OF HEART DISEASES.

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Sanitätsrat.

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During my stay in the United States an article by Dr. J. M. Anders¹ of Philadelphia on the action of the Nauheim cure attracted my attention. I deem it my duty to say a few words in reply to his statements, both in the interest of Nauheim and of Americans suffering from heart diseases who are unable to visit Nauheim for relief.

Those not acquainted with Nauheim and the prevailing conditions who read these statements must be led to the conclusion that it is a generally accepted practice at the place to treat heart disease with gymnastic exercises. This is by no means the case. The fact is that out of fifty physicians practicing in Nauheim the Schott treatment is solely applied by Professor Schott. A number of the Nauheim colleagues still occasionally permit the patients to exercise with the Zanders apparatus, but not until the muscles of the heart have been sufficiently strengthened by the bath treatment, which means near the termination of the cure. Then they apply preferably apparatus which produce passive movements, and particularly movements which tend to induce deep breathing without the least active exertion on the part of the patient, thereby not causing overworking of the heart. The number of physicians who reject even these apparatus is considerable. They rely mainly on the baths; prescribe all the rest possible and try with the aid of additional means, such as massage diet, etc., to unburden the heart. During the last season over 26,000 people came to Nauheim to take the bath treatment. Of this number certainly by far the majority were not treated by the Schott method. In spite of the absence of this treatment, the results have been, to say the least, equally as good. Therefore, I am fully justified in the assertion that Dr. Anders has given the gymnastic treatment an importance to which it has absolutely no claim. To attribute recovery from diseases of the heart in Nauheim to the exercises is absurd; it is the Nauheim baths, plain and simple, which constitute the essential curative factor. Before entering more specifically on the bath treatment I wish to explain why I could not—without harm to the interest of patients not able to visit Nauheim—allow the misleading statements of Dr. Anders to remain unchanged.

Frequently during my stay in the United States I have had the opportunity to discuss with my American colleagues the treatment of heart diseases in general. Invariably I have been informed that heart patients were subjected to gymnastic exercises, and in many instances I was referred to articles on this subject published by Schott, Thorne and other authors, and more than once my attention was drawn to Dr. Anders' paper. I was repeatedly assured that following gymnastics the area of dullness was diminished and the pulse rate reduced. But does that actually prove anything for the efficiency of gymnastics? I hardly think it does. On the contrary, I consider gymnastic exercises in most cases of heart diseases, especially myocarditis, under all circumstances very dangerous. Gymnastics are not without danger in any case, because in all cases of heart diseases the myocarditis is more or less affected, too. It is the more dangerous where the neutralizing

2. Piquéé and Briaud: "Études de psychoses postopératoires," Arch. de Neurol., Second Series, No. 15, 1903.

agent of the Nauheim baths can not be given at the same time to counteract the damaging effect of the exercises. In other words, I consider the treatment of heart disease with exercises, especially in those cases where the Nauheim baths are not available, extremely dangerous. Where a diminution of the area of dullness has been found, following gymnastic exercises, there is by no means a certainty that the actual size of the heart has decreased. At best the percussion of the heart is of a conditional value. To be of value it is necessary that the consecutive examinations by percussion are to be made under exactly the same conditions. The position of the heart is changed with the variations of the amount of the stomach's contents, and in like manner an expanded lung replete with air changes the boundaries of the area of dullness. In support of the latter contention in particular I refer to the work of my Nauheim colleagues, Grote and Reissner.² Both colleagues have by an extensive series of very carefully conducted investigations determined that the bath produces an increased depth of the respiration, and the consequent expansion of the lungs causes the deceptive appearance of the reduction of the size of the heart. The same increased expansion of the lungs, which also follows the deep respiration which Schott advises during the exercises, must be held responsible for the reduced pulse rate—not the gymnastic exercises.

Schott contends that by gymnastic exercises, by vigorous stimulation of the heart's action, in one of his first publications on this subject—if I am not mistaken—he uses the term *Herz-Turnen*—the muscles of the heart are strengthened. He assumes in this connection that the same conditions prevail with the diseased muscles of the heart as with weak and poorly developed external muscles of the body under voluntary control. There can be no doubt that muscles, otherwise healthy, that are below the average in their development may through systematic exercises be brought up to the normal, and more emphatically I contend that this capacity can be increased above the standard. I need only refer to the excellent results of physical culture and scientific training under the direction of competent men practiced at your American colleges and universities. With patients visiting Nauheim we do not deal, except in the rarest instances, with healthy or merely poorly developed heart muscles, but with pathologic changes, and often with degenerative processes, sometimes of the gravest nature. Weak and diseased muscles of the heart can never be strengthened by increasing their burden, but by lightening it, which means rest. It has been my experience that absolute rest of the heart, through diet, massage, sun baths, etc., are followed by the more certain results. I trust the reliability of my observations will not be questioned, as the greater part of my patients are constantly under my supervision, i. e., those who stay at my sanatorium.

Now, in regard to the influence of the Nauheim baths, I can readily understand that anyone who lacks the opportunity of observing a greater number of heart cases in the place itself will consider the matter somewhat skeptically. It appears at first thought incredible that twenty or thirty baths, or even a few more, should bring about such potent influence on a diseased organ, and yet this is actually the case. The fact that the number of patients afflicted with heart troubles in the last decades has annually increased considerably in Nauheim tends to show that more and more physicians and patients

alike are becoming convinced of the efficiency of the Nauheim baths.

What produces the effect of the bath? In my opinion, we need not look for a difficult explanation. In all chronic diseases we find metabolic disturbances. We all know that the lymphatic circulation bears a very important relation to metabolism. Now, the plain water baths bring about a stimulating influence in moving the body fluids, and in a more marked degree this action is found where the baths contain an increased amount of salts. Add to this the proper conditions of temperature, the presence of carbonic acid gas, as in the Nauheim waters, and other agents of physico-chemical nature, which have not yet been definitely determined, and the action of baths is increased to a vigorous stimulation of the lymphatic circulation. In addition, Nauheim enjoys the exceptional advantage of a great variety of bathing forms, which enables us to grade the baths to suit the indications of the weakest as well as the more resistant patient. It naturally follows that a thorough treatment at Nauheim is to be preferred to one at home. But not all patients suffering from heart troubles can visit Nauheim, and for various reasons a great number must be content with home treatment. If at Nauheim it is proper to aid the baths by dietetic treatment and measures directed toward unburdening the heart—these include the Abéc heart-support—certainly all these must apply in a larger scale to a treatment at home where the artificial substitute must naturally fall behind the efficiency of the original Nauheim baths. At any rate, over-exertion of the diseased heart, gymnastic exercises in whatever form, can not be too strongly condemned.

THE MEDICAL PROFESSION AND THE MEDICAL JOURNALS IN RELATION TO NOSTRUMS.*

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Primarily, the medical profession is to blame for the present extensive use of proprietary medicines, of which the majority are nostrums.

The law of demand and supply applies here; if we did not prescribe them, they would not be manufactured.

"There's millions in it." The medical profession is blind; we do not see that we are the dupes of men as fertile as Colonel Sellers in schemes and far more practical than he, in that they put their plans through to a finish.

Commercial cupidity exists in all the walks of life. It is small cause for wonder that shrewd men should take advantage of an opportunity that is lucrative and at the same time so easily exploited.

As it seems to me, the chief causes are evident. A large number of the medical profession do not practice medicine rationally. They have no clear conception of disease processes. They do not study and examine their patients. No diagnosis is made at all, or only from subjective conditions. Symptoms are treated. Headache, backache, indigestion, albuminuria, cough, constipation, dysmenorrhea, insomnia, nausea, dyspnea, etc., call for drugs, with usually no attempt to get at the underlying cause. I regret to say it, but I believe that many, many

* Read at the meeting of the Suffolk County District Society of the Massachusetts Medical Society, Jan. 3, 1906. A report of this meeting, with the discussion, appeared in THE JOURNAL, Jan. 20, 1906, p. 220.

2. A report appearing in the *Münchener med. Wochsft.*, October, 1903.

physicians practice medicine on that basis. Think, for a moment, of the vast number of proprietary mixtures, usually nostrums, advertised and distributed in samples to physicians as symptomatic cures.

This sort of practice requires a vast number of these nostrums. He who treats symptoms must necessarily change the medicine from time to time to satisfy and to hold his patients. He relies on ready-made, symptom-indicated, dose-directed, usually palatable medicine. He believes what he reads in the "literature" of nostrums sent to him or as it appears in the advertisement found in his medical journal. He forgets that this testimony is inserted for pay. He sees testimonials from professors and practitioners praising the remedy and he believes.

But he is fickle and drops his last specific cure-all for a new one, which comes to him in sample, by mail, or is presented to him by the traveling agent in a confidential and instructive (?) way, and again he believes. He forgets that this agent is either a doctor, who has failed as a practitioner, or an ex-drug clerk whose full worth is commanded by ten or fifteen dollars a week. Usually the physician is told that the preparation is ethical, and that its formula is published (usually, however, without indicating the amount of the constituents of the mixture contained in a dose). The process of manufacture is dwelt on—"after painstaking research" the mixture is so put up that new and heretofore unheard-of potency is developed in it.

It is a common experience of druggists to have a rush of prescriptions for a nostrum which has just been sampled to the physicians in the neighborhood.

For ways that are dark the exploiters of copyright preparations are sufficient and proficient. The nomenclature of these compounds is a wonder. No especial system is followed. A catchy name appears to be the main thing. The name may consist of a euphonious combination of the alleged ingredients; of a morbid symptom or process combined with a drug; of a name indicating the alleged number of ingredients in the mixture, or of any coined word that is striking in print or sound. So we have Sanmetto, Ferroleum, Salochinin, Peptomangan, Uric-Antagon, Antiphlogistine, Zymoticine, Gonosan, Anasarcin and Antikamnia, Duotonol, Quartonol and Sextonol, and Utrolene, Chionia, Cystogen, etc., as examples. Apeitzo is a breakfast food, and the name makes one hungry. It is said to be an iron food. Apetol is a medicine, a strengthener which strengthens, composed of a dozen or more drugs. Rhenmagon suggests a possibility that the "rheum" had "gone," but it is said to contain sodium iodid and sodium phosphate, and to cure rheumatism and all conditions resulting from uric acid in excess and disturbed metabolism. This is not the only uric acid annihilator, for they are numberless. The average proprietor of a trademark preparation looks on uric acid as one, if not the worst, enemy of mankind. He offers us uric-acid solvents in the form of natural mineral waters (recently these are radioactive as well), artificial waters, salines, plain and effervescent—all things to "touch the liver," and so every one concerned is happy, except a majority of the patients.

Often a chemical or drug is used by different proprietary firms in a mixture of other and often indifferent substances and presented in powders, tablets, etc., under different copyright names. For instance, Hexymethylene-tetramine, which is recognized as an excellent antiseptic in diseases of the urinary apparatus, is ex-

ploited in mixture in a dozen or more trade names by as many firms. Cystogen, uriform and aminiform are examples. Acetanilid is exhibited in mixture as bromoseltzer, antikamnia, orangeine, phenalgin, ammonol, megrimmin, etc., by different proprietary houses. Some of these mixtures have even been presented as synthetic chemicals. Well-informed physicians believed this until the Council on Pharmacy and Chemistry of the American Medical Association made known the formulæ after analyses of the mixtures.

It may be well to say, in passing, that mixtures which contain poisons, like opium and its derivatives, chloral, cocain, strychnin, arsenic, acetanilid, should be properly labeled, with the amount of the drug contained in the mixture. It is a common occurrence in Chicago to find patients suffering from chronic acetanilid poisoning due to the continued use of the mixtures which contain acetanilid, but which do not indicate the presence of the drug in the preparation. They are advertised as cures for fevers, colds, cough; as tonics, as "bracers," etc.

I am very sorry that acetanilid was made official in the last Pharmacopeia as Pulvis Acetanilidi Compositus. I think it too dangerous a drug to be used as a medicine, and especially when there are so many harmless substitutes.

But to return to the nomenclature. It is contrary to all scientific standing and progress. It is meaningless. Without a scientific terminology, pharmaceutical preparations can not be studied or learned. The deception practiced by the nomenclature of the nostrums is detrimental to all scientific progress and to the morals of the profession and is harmful to humanity. But the nomenclature is linked with a most astounding statement of physiologic action and therapeutic indication in the "literature" of these preparations and in the advertisements in medical journals. Let me quote a few of these statements:

"Hexamine." "It is invaluable in cystitis of all kinds, albuminuria, gout, gravel, incontinence of urine, pyelitis, pyelonephritis, renal and vesical calculus, phosphaturia, rheumatism and irritable bladder from any cause. In typhoid fever it prevents the spread of the infection and destroys the colon bacillus."

Who could ask for anything more definite and universally applicable?

"Sanmetto is not an excitant or stimulant. Its purpose is soothing, healing, restoring. It soothes the irritation, heals the diseased mucous membrane and restores tone to the enfeebled parts. By its use the genitourinary organs are built up to a state normal with the age of the patient, and thus at the same time any pathological conditions that may be present as a result of their impairment are relieved or cured."

This negative and positive statement of a tonic which soothes and heals and does not excite or stimulate but cures is better than the fabled fountain of youth.

"Antiphlogistine." "It depletes the visceral blood vessels by flushing the superficial capillaries—bleeds but saves the blood."

I wonder if any sensible-thinking doctor believes this. If he does, I'd like to know why.

"Casea-Alettris." "A laxative utero-ovarian tonic, alterative and sedative." "It contains the purely active matter from alettris, cramp bark, wild yam, squaw vine, black haw, blue cohosh, golden seal and caseara sagrada, the inert and objectionable elements being eliminated. Free from alcohol and sugar. Very palatable. A decided advance in modern therapeutics."

Could you ask for any better example of a "shotgun" dose, and that, too, a laxative, a tonic, a sedative and alterative!

"Tongaline." "Antirheumatic, antineuralgic. Cures rheumatism, sciatica, lumbago, grippe, neuralgia, malaria, headache, gout, because Tongaline contains standard remedial agents of absolute purity, combined with salicylic acid made from the natural oil of wintergreen. Tongaline acts upon the poisonous products of retained excretion or perverted secretion and eliminates them promptly and thoroughly, thus insuring in every instance certain results from certain doses in certain time."

Verily, this is too much! At this rate there will be no reason to die. The practice of medicine with tongaline is too easy.

"Pil Orientalis (Thompson)." "The therapeutic value of ambrosia orientalis (imported solely for ourselves) as a powerful nerve and brain tonic and powerful stimulant of the reproductive organs in both sexes can not be overestimated. It is not an irritant to the organ of generation, but a recuperator and supporter."

This ought to answer, once for all time, the statement of certain quack advertisers of "Lost manhood, how restored?"

"Sulpho-Lythin." "Is a true hepatic stimulant, intestinal, antiseptic, antizymotic and toxine eliminator."

This is almost as good as the statement of the old woman of Irish extraction who praised the effect on the bowels of sulphur and molasses: "Sure, the molasses 'iles 'em and the sulphur moves 'em."

"Anasarcin." "Absolute cure of dropsy caused from heart, liver or kidney troubles."

These are strong words, but they are justifiable. From every quarter come enthusiastic reports of clinical results accomplished by prescribing anasarcin, not only in dropsies, but in exophthalmic goiter. All those natural speculations in the doctor's mind as to the usefulness of this remedy should be immediately dismissed."

The statement of an absolute cure for dropsy, of any cause, is enough to condemn a preparation.

"Glycezone is daily making converts among physicians for its wonderful work in inflammatory and contagious diseases of the alimentary canal. It is the rational treatment in gastric and intestinal disorders, such as dyspepsia, gastritis, gastric ulcer and all contagious and inflammatory diseases of the stomach and intestines."

Such converts as this stuff makes among physicians are not worth saving.

"Physicians everywhere prescribe Triacol (Alpers) with unequalled success and perfect satisfaction in bronchitis, coughs, pharyngitis, laryngitis, phthisis tuberculosis. They prescribe it because it cures."

It is prescribed because it cures tuberculosis, bronchitis, laryngitis, etc. The physician who would prescribe it on the basis of the statement made should have his license taken from him.

"Aletris Cordial Rio is indicated as a prophylactic remedy against postpartum hemorrhage, uterine weakness, great development of the fetus and of the adnexa, and in those cases where there is a disposition to hemorrhage."

A prophylactic against uterine weakness (what is it?), great development of the fetus! Good Lord! What next?

These are some of the statements made in the advertisements of a few of the many proprietary medicines. The majority of the quotations are from medical journals. One is not surprised to receive the scarlet literature of the nostrums through the mail. Nor is one especially shocked to find reports of impossible cures and astounding statements in the medical trade journals, for such journals are published wholly in the interest of proprietary houses; but one is disturbed to find that the regular and otherwise respectable medical journals pub-

lish such rubbish as I have quoted. Such advertisements will be found in the *Medical Record*, *New York Medical Journal*, *the Medical News*, *The Boston Medical and Surgical Journal*, *American Medicine*, *British Medical Journal* and *London Lancet*. Recently the pages of *THE JOURNAL* of the American Medical Association have been purged of some of the objectionable advertisements, but still advertise some medicines with very objectionable statements as to the therapeutic effect.

Now I, and I think most people, believe that the advertising pages of a medical journal are a legitimate part of the publication. Editorial responsibility should extend to every part of it. There can be no question of the harmful effects on the profession of the flood of nostrums. It is injurious, therefore, to promote in any way the use of them. The editor of a medical journal can not escape the responsibility of the character of the reading matter, and the influence it may have, which appears in his journal.

The term "ethical" appears in many of the statements of the proprietors of nostrums. The word covers a multitude of sins. The *Standard Dictionary* defines ethics as "the science of human duty; the science of right character and conduct." The alleged curative properties of preparations quoted above and of many others advertised in medical journals and in the other "literature" circulated in various ways do not conform in any way with the definition of the word.

Indeed, the method of advertising these "ethical" preparations in the medical press would, with very little alteration, fit any "patent" medicine advertised in the lay press.

To illustrate I quote from the lay press:

"What is Castoria? Castoria is a harmless substitute for castor oil, paregoric and soothing syrup. It is pleasant. It contains neither opium, morphin nor other narcotic substance. Its age is its guarantee. It destroys worms and allays feverishness. It cures diarrhea and wind colic. It relieves teething troubles, cures constipation and flatulency. It assimilates the food, regulates the stomach and bowels, gives healthy and natural sleep. The children's panacea—the mother's friend."

This is, like the "ethical" advertisement in positive-ness of statement, both affirmative and negative.

"Tonsiline is the greatest throat remedy on earth. Tonsiline cures sore throat of all kinds very quickly and is a positive, never failing and speedy cure for sore mouth, hoarseness and quinsy."

As this appears in a newspaper, the profession will say it is a quackish statement made to fool the laity. But as bad and worse statements concerning nostrums appear in medical journals.

"Ask your own doctor; if he tells you to take Ayer's Cherry Pectoral, for your severe cough or bronchial trouble, then take it. If he has anything better, then take that; only get well as soon as possible, that's the object. Doctors have prescribed this medicine for sixty years. We have no secrets. We publish the formulas of all of our medicines."

Now, can you see any great difference in the alleged curative powers and the therapeutic indications of the preparations quoted from the lay journals and the medical press? In fact, there is none. The language used in the advertisements placed in the medical journal is a little more technical and, for that reason, is often not so rational as the statements made in the lay press.

The medical press is an educator. Through it, more than by any other means, medical knowledge is widely disseminated. It is a power which, when properly directed, yields untold riches for the benefit of the medical profession. But it has an equal power for evil. If

it, as an educator, contains material which is false and misleading, even though this is confined to its advertising pages, it does an infinite harm to the profession and to mankind.

I have not met an editor who defends the practice of advertising nostrums. Confessedly it is done for money, not for the editor, but for the publisher. The excuse offered is that the editor is engaged to edit the medical articles; the publishers print the journal and supervise the advertising department; but this is not explained to the reader. To the average man all printed statement is fact. He believes the printed word when he would doubt the oral statement. This is the result of our methods of education of children. They are taught to believe all they read. Many persons never discover the fact that, as Burns says:

Some books are lies fra end to end,
And some great lies were never pen'd;
Ev'n ministers, they have been kenn'd,
In holy rapture,
A rousing whid, at times to vend,
And nail't wi' Scripture.

The proprietary medicine evil is due chiefly to the credulity of the medical profession. The cupidity of the proprietors and promoters is the second cause, and, unfortunately, the medical journal lends itself to the exploitation of the nostrum.

Few of us probably realize the extent to which the use of proprietary medicine has grown in a short period of time. To judge by the prescriptions filled in drug stores of large cities, at least 50 per cent. of the members of the profession use proprietary medicines.

The statement is made¹ that in New York City about 70 per cent. of the prescriptions filled in large drug stores call for proprietary preparations. This statement is a general one and probably not definite.

In Chicago I have secured data from two drug stores. In one large downtown drug store 42 per cent. of the prescriptions contained proprietary medicines. This pharmacy fills the prescriptions of physicians who in many instances occupy high places in the profession.

The second drug store is in a residence neighborhood where chiefly the prescriptions of the family physicians are filled. This showed about 50 per cent. of prescriptions calling for out-and-out proprietary mixtures or containing, in part, a proprietary chemical or drug. One prescription was for Castoria and California Fig Syrup, equal parts, with directions to take a teaspoonful every two hours.

In Boston there was secured the data from two of the best known druggists. In one, in which 14,895 prescriptions were filled in a year, 38 per cent. were proprietary; in the second, in which 12,000 prescriptions were filled in a year, 48 per cent. called for proprietary medicines.

Modern medicine has established the fact that specific medication for disease is very limited. The specific sera, used as antitoxins and bactericides, organotherapy in a very limited field, quinin in malaria, and mercury and iodids in syphilis, comprise the list. A rational use of drugs, preferably in simple form to stimulate or to maintain the physiologic function of organs embarrassed by unhygienic habits, by an acute infective process or partially crippled by a morbid anatomic process, is the chief reliance of the physician.

Palliation of suffering is an important therapeutic measure. The rational, careful and conscientious physi-

cian primarily attempts to make a definite diagnosis. The removal of the cause, when possible, is an important step with a rational management of the personal hygiene. The drug treatment may be a very important part of the management, and it requires a fine judgment to know when and what to give in disease, as well as when not to give anything.

The Pharmacopœia furnishes a list and description of chemicals and drugs, more than enough to meet the wants of the most ardent believer in drug therapy. A good pharmacist can furnish the official water, pill, powder, spirit, solution, elixir, tincture, fluid extract, syrup, etc., of the drugs prescribed. The Pharmacopœia gives the physician the complete and definite official mixtures. He will be able to furnish his patient with drugs at their true value. The pharmacist will not be obliged to pay a hundredfold price for the proprietary preparation, which, in the end, is assessed on the patient. Acetanilid may be bought for not more than from 25 to 30 cents a pound. If prescribed in the copy-right preparations it costs many times the trade price.

Scientific progress, professional integrity and character and economy demand the restriction of the proprietary medicine evil. To restrict it, the medical schools should teach the student, more fully and adequately, botany, pharmacology and therapeutics. The medical graduate must know how to observe and interpret the phenomena of disease, and he must know equally well the materials and how to use them with which he may combat disease. He should know pharmacology and prescription writing; he should know the therapeutic value and power of drugs and their limitations. With a proper fundamental knowledge of this kind, the daily experience will add valuable information in drug therapy which will not be disturbed by the alluring advertisement of the nostrum exploiter.

To overcome the present evil will require publicity. By this means we may be able to arouse the dormant good sense of our erring brother practitioner and induce him to use simple tried and official drugs. We must induce the physicians to attend medical meetings and to rub against their fellows. But at these meetings we must not permit the exhibition, under our auspices, of pyramids of proprietary medicines and stacks of more "literature" than is offered at the scientific sessions. We must discountenance the practice of the "faculty" and the practitioner in writing testimonials of the wonderful effects of these cure-alls.

We must induce our medical journals to stop advertising nostrums. The editors of the great journals of the country are to be numbered among the best members of the profession. If they choose to do so, they can permit the advertisement only of those proprietary medicines which furnish for publication, in the advertisement, an authentic, definite and complete formula. They should also edit the reading matter of allowable advertisements and prevent the abuse of overstatement and the publication of untruths. Secret mixtures and mixtures with incomplete formulas or with indefinite statements as to the constituents should be refused space in the reputable medical press. With the publication of accurate formulas the physician would be able to judge of the possible virtues of the mixtures. To most of us, mixtures with known formulas are objectionable. Disease is never quite the same in different individuals, and the morbid phenomena are not often expressed in the same form from hour to hour and day to day. The treatment must be modified to meet the varying prob-

1. James J. Walsh, M.D., THE JOURNAL A. M. A., vol. XIV. No. 23, p. 1702.

lem of the morbid process. This can be done much more helpfully with simple drugs than with intricate mixtures.

Secrecy is essential to the success of the nostrum evil. Publicity will kill it. Publicity will educate the physician and the public and teach them not to use secret mixtures which often contain poisonous chemicals or drugs which are kept secret for the purpose of assigning to them alleged virtues and that an extravagant price may be obtained.

Finally, I desire to express sorrow that the present status of the nostrum evil compels me to say a word of complaint of the medical profession. Many physicians to whom I have talked have expressed themselves as more or less guilty of prescribing proprietary preparations. All agree that it has been done thoughtlessly and that the practice has insidiously grown on them. Many have said that it is unnecessary, is detrimental to scientific medicine, and that the exposé of the Council on Pharmacy and Chemistry will have a most decided effect in educating the profession not to use nostrums.

100 State Street.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XI.

INTERNAL ANTISEPTICS.

The great strides made in the use of antiseptics, after Lister had employed them in surgery with such brilliant results, led to the hope that they might be made available for limiting the development of bacteria in various parts of the human body. From time to time clinicians have reported favorable results from the use of internal antiseptics in such diseases as typhoid fever, but at the present time it is generally acknowledged that complete disinfection of the intestinal tract is impossible and that the treatment of constitutional diseases by means of antiseptics is possible only in a few isolated cases; for example, in malarial fever by quinin, in articular rheumatism by salicylic acid and its compounds, and in syphilis by means of mercurials. Quinin has been shown to have a peculiarly selective and destructive action on the protozoön which causes malarial fever, and perhaps mercury and salicylic acid may possess similar selective action against the agents producing syphilis and certain forms of rheumatism. It is no longer considered probable that there will be found any agent or group of agents capable of rendering the blood and tissues sterile to all or to any considerable number of bacteria; but it is admitted that we may yet find many agents, each exerting an influence analogous to that of quinin in malarial fever; we may limit ourselves, therefore, to discussion of the probable action of antiseptics on the alimentary canal and of the three substances just enumerated.

It is impossible to form a correct idea of the probable effect of an internal antiseptic without having at least some idea of the organisms on which it must act. Nuttall and Thierfelder took guinea-pigs from their mother by Cesarean section under aseptic conditions, and fed one of them on sterilized food for thirteen days, during which it continued to thrive, but Schotelius found that chickens died of starvation when fed only on sterilized food. G. N. Stewart accepts Nuttall and Thierfelder's results as demonstrating that animals, including man, exist despite the bacteria which infect the alimentary canal from a few hours after birth until death.

Strassburger concludes, from a review of the extensive literature pertaining to intestinal bacteria, that Nuttall and Thierfelder have shown that no single process of alimentation is absolutely dependent on bacteria, but that the chief function of certain of them, notably the colon bacillus, which is always abundantly present, is actually to destroy other bacteria and

thus to protect the host against those disease germs which may gain entrance to the alimentary canal. The destruction of all the bacteria in the alimentary canal at any one time, therefore, might prove fatal, in that any disease germs which chanced to gain access to the intestine could so multiply as quickly to destroy the life of the host.

The proof that bacteria do play some part in the process of digestion is found in the fact that man can digest the cellulose of delicate vegetables to a limited extent, though he secretes no enzyme capable of splitting cellulose, which, therefore, must be split by bacteria present which have been shown to possess that power. Then, too, certain crystalline bodies other than leucin and tyrosin have recently been found among the ultimate products of digestion, and as none of the known digestive enzymes are capable of forming these bodies they likewise must result from bacterial action.

While we must admit that bacteria are concerned in digestion, we have no positive information at the present time as to how important a part they actually take. It has been shown that the colon bacillus, which is universally present in milk, inhibits, to a certain extent, the action of putrefactive bacteria, and it is well known that untreated milk of good quality is more digestible than is the same milk after sterilization.¹

We are thus forced, by this and other like evidence, to conclude that it is by no means desirable to render the intestines sterile and that, instead of attempting intestinal antiseptics in the broader sense, we should seek rather to modify the flora in that region than to destroy it.

Various methods have been proposed, from time to time, for determining the relative degree of putrefaction taking place in the intestines, but at the present time it is not positively known what constitutes the best method at our disposal for doing this. The procedure most frequently employed, one which is considered to afford a fair estimate, in a large proportion of cases, consists in estimating the ethereal sulphates in the urine. Strassburger claims that weighing the bacteria after separation from the feces and drying affords the surest means of estimating the number of bacteria present. Others count the number of colonies which can be cultivated from a milligram of feces, but this has been shown to be unreliable. In view of the fact that laboratory methods are far from satisfactory in determining the number of the several varieties of bacteria present in the feces, the general practitioner will probably be obliged, for some time to come, to depend largely, if not entirely, on the clinical data presented by each individual case.

Without knowing the precise rôle played by the multitudinous bacteria of many species, we do know in various ways when undue activity of the putrefactive bacteria occurs, and certain symptoms give notice that excessive fermentation is taking place in the small intestine. A moderate increase in the number of colon bacilli tends to lessen the development of the

1. Tests made on the several constituents of milk show that they have no power to inhibit putrefaction, though such a power is unquestionably possessed by fresh milk. That this is due, at least in part, to certain bacteria normally present in the milk is shown by the fact that sterilized milk putrefies much more rapidly than untreated milk on the addition of the bacillus of putrefaction (*B. putrificus*); but if with the *Bacillus putrificus* the colon bacillus be added to sterilized milk, the milk acts as does normal milk, thus proving that the colon bacillus is actually capable of inhibiting the development of certain bacteria. It is, of course, possible that fresh milk also possesses antibacterial properties which are destroyed by the sterilization. These conditions help to explain why sterilized milk is not so wholesome as new milk of good quality. It must be remembered, however, that milk is an excellent culture medium in which a great many bacteria are normally present, and that if it be allowed to stand in a warm place for hours the micro-organisms multiply to such an extent that the milk is wholly unfit for use, and we do not wish to be misunderstood as implying that the colon bacillus is an unalloyed blessing. While, during health, this micro-organism probably does not emigrate from the uninjured intestine it may do so in states of lowered general resistance, or in the presence of defects of the intestinal epithelium, and may give rise to blood infection, or more rarely to inflammations in various organs. The possibility that the bacillus of typhoid fever and kindred forms are only modified colon bacilli is of theoretical importance. Some authorities (Escherich and some others) deny that the colon bacillus is capable of rapidly becoming virulent. Different strains of the colon bacillus have different degrees of virulence, and it still remains possible that many cases of infantile colitis are caused by certain strains (e. g., the colicollitis of Escherich).

putrefactive germs; on the other hand, an intestinal catarrh, caused by excessive acidity resulting from the undue fermentation of carbohydrates by the colon bacillus, may be alleviated by lessening the carbohydrates of the food and consequently the medium on which the colon bacillus thrives.

Normal peristalsis, by hurrying the food through the small intestine, prevents undue development of bacteria, but diarrhea and irritant purgatives favor the development of bacteria by the increased amount of liquid which is present, because of the increased secretion or diminished absorption. Thus more bacteria have been found after administration of calomel than were present before the drug had been given, though calomel is generally considered to be an excellent antiseptic.

While normal peristalsis limits the development of bacteria, the latter, in turn, liberate acids in the decomposition of carbohydrates, which probably supply the stimulus which sets up peristalsis. The normal digestion and absorption of food also tend to lessen intestinal putrefaction by lessening the amount of material which can serve as a culture medium.

It is important that the intestinal wall should be kept intact. When the intestinal mucosa is injured it fails to absorb the food products and the bacteria multiply rapidly. It has been found that many antiseptics injure the intestinal wall more than they do the bacteria, and, despite the fact that the antiseptic may be found in quantity in the feces when the bulk is small, it has actually permitted an increased growth of micro-organisms in the small intestine when other conditions favored the bacteria and not the antiseptic action. Strassburger found just double the number of bacteria after the use of naphthalene, which has been considerably lauded as an intestinal antiseptic.

As suggested before, the simplest means of diminishing the number of putrefactive bacteria is by lessening the amount of the proteid of the food. Though it has been contradicted by the indirect evidence of urinary constituents, it has been shown that the bacteria of the intestines are very much reduced in number by the withdrawal of all food.

It was formerly supposed that the gastric juice of the stomach interposed a fairly effective barrier to the entrance of living disease germs into the intestine, but this juice has but little effect at the beginning of digestion, when the activity is slight, and toward the end, when the hydrochloric acid is nearly all combined with proteid. Some micro-organisms, e. g., the tubercle bacillus, pass uninjured through the stomach more readily than others, e. g., the vibrio of cholera.

The effect of bile on bacteria is not positively known, but it is generally supposed that it does not contain any germicidal power, as some bacteria can be cultivated on bile, though not after the precipitation and removal of the mucus. The intestinal secretion does not possess any germicidal power. All these factors are important, since all of them—bile, gastric juice and intestinal secretion—have at various times been supposed to possess antiseptic properties, and it is necessary to know what results are to be expected from increasing the quantity of any or all of them.

Strictly speaking, the antiseptics of the alimentary canal should begin with that of the mouth, but this is more conveniently considered under local antiseptics. In view of the fact that the gastric juice does not interpose an absolute barrier to the ingress of pathogenic bacteria to the intestine, the proper care of the mouth and the limitation of its flora assumes an added importance, and there is no question of the fact that proper attention to the cleanliness of the oral cavity will greatly lessen the danger from intestinal infection.

The general tone of these varied statements may appear pessimistic, so far as faith in the efficiency of intestinal antiseptics is concerned, but so far from that being the case they are intended to further demonstrate that our main reliance must, after all, be placed in guarding against the entry of disease-producing organisms into the alimentary canal and their destruction before they have passed beyond the reach of local treatment. After they have once gained admittance to the intestine the best means of limiting their development must be sought in regulating the diet and careful attention to the general condition.

If we are unable to destroy all or even any appreciable num-

ber of the bacteria of the intestine, it is consoling to know that some of them are our allies instead of our foes. It is admitted by nearly all authorities that it is impossible to influence the bacillus of typhoid fever by antiseptics. It has been shown that a milk diet hinders the development of putrefactive bacteria, and many consider that the main benefit derived from a milk diet in typhoid fever is due to its effect on bacterial development. Fortunately, the *Bacillus typhosus* does not form spores and the bacillus itself is easily killed outside of the body; heating in water even to 75 C. (167 F.) for ten minutes greatly lessens its vitality.

It is practically impossible in the space at our disposal even to summarize the results of the hundreds of investigations dealing with the question of intestinal antiseptics. Those experiments which appear more nearly free from error point to the fact that we can not secure direct antiseptic action by chemical antiseptics in the intestine without injuring the intestinal wall, or at least materially reducing those conditions which naturally limit bacterial development, more than we injure the bacteria. The net result, therefore, is usually an actual increase of some species and a diminution of others. Clinical experience seems to prove conclusively that the mild mercurous chlorid, or calomel, is beneficial in those cases of indigestion which are characterized by that train of symptoms which includes a feeling of dullness, lassitude, headache, nausea and anorexia, the condition being popularly termed "biliousness." It is possible that the antiseptic action of the calomel, by limiting the development of other species of bacteria, gives the colon bacillus a chance to multiply, the increased amount of fluid in the intestine having been found particularly to favor its development. These, in turn, may then modify digestion or serve to restrict the development of putrefactive bacteria, and, as we have seen, they favorably influence peristalsis, which in turn is one of the natural means of elimination of bacteria. The increased peristalsis caused by the calomel lessens the opportunity for absorption of the bacterial toxins which give rise to the train of symptoms mentioned; this lessened absorption may be due in part to the action of calomel on the wall of the intestine. This merely suggests the many-sidedness of an operation that appears at first glance to be a very simple one. The action of the solution of hydrogen dioxide in the mouth and throat has been discussed under local antiseptics. Owing to the rapidity with which it is decomposed by mucous membranes it can exert but little germicidal action in the stomach and absolutely none in the intestine or general circulation; indeed, it is so rapidly decomposed by the blood that it speedily causes death by embolism when introduced into the circulation. The same holds true of potassium permanganate, and it is probable that all antiseptics that depend for their action on the liberation of oxygen would be decomposed in the same way when brought in contact with the mucous membranes of the mouth and throat or the organic material necessarily present in the stomach.

ACIDUM HYDROCHLORICUM.—U. S.—Hydrochloric Acid, or muriatic acid, contains 31.9 per cent. of absolute hydrochloric acid. It is seldom used in medicine in this country, the preference being usually given to

ACIDUM HYDROCHLORICUM DILUTUM.—U. S.—Diluted Hydrochloric Acid, containing 10 per cent. of absolute hydrochloric acid. This acid undoubtedly exerts some germicidal action in the stomach when present in sufficient amount, and its action may indirectly influence the intestinal flora. It has been stated that the hydrochloric acid of the stomach becomes bound to albumin during digestion and then exerts no antiseptic influence, but we have also seen that normal digestion is one of the surest means of controlling the bacteria of the intestine, and how a deficiency of that aid may cause fermentative dyspepsia, with an enormous increase of bacteria, which may become virulent. It may be mentioned in this connection that, according to some recent experiments on man, the usual dose of hydrochloric acid, 1 c.c. (15 minims) is entirely too small to supply the deficiency existing in many cases, and as much as 200 c.c. (6 fluid ounces) of 0.4 per cent. acid, corresponding to 10 c.c. of the official dilute acid, has been given with decided benefit when the usual dose or less had given no appreciable result. It must always be given diluted with a

large amount of water. It should be remembered that mineral acids are to be taken through a tube to avoid injury to the teeth, and that the mouth should then be rinsed with water, or, better still, with a mild alkaline solution,² such as lime-water or a very dilute solution of sodium bicarbonate.

NAPHTHALIENUM.—U. S.—Naphthalene, naphthalin and **NAPHTHAPHTHOL.**—U. S.—Betanaphthol, or naphtol, have been highly recommended as intestinal antiseptics. As we have seen, they do not usually lessen the number of bacteria, though they may exert a favorable, modifying action. These substances have been used in the treatment of diarrhea with excessive putrefaction.

The average dose of naphthalene is given as 0.12 gm. (2 grains), and the average dose of betanaphthol as 0.25 gm. (4 grains). It has been suggested that naphthalene must be converted into betanaphthol before it can exert its antiseptic action, but even this point has not been satisfactorily determined.

There are a number of nostrums on the market consisting of betanaphthol combined with astringents, but in view of the complex nature of the problem with which we have here to deal it is preferable by far to employ the official substances, combining them as seems indicated in each case. To do this it is merely necessary to calculate the relative amount of each powder to be given at a dose and to dispense them either separately or in a single powder or a mixture.

Betanaphthol and bismuth subnitrate or subcarbonate may be combined somewhat as follows:

| | | |
|--------------------------|--------|---|
| R. Bismuthi subnitratiss | 3i | 4 |
| Betanaphthol | gr. xv | 1 |

M. Sig.—To be made into ten powders, one being given every two hours in diarrhea with foul-smelling feces.

| | | |
|--------------------------|-------|-----|
| R. Bismuthi subnitratiss | 3iiss | 10 |
| Betanaphthol | 3ss | 2 |
| Syrupi acacie | 3iss | 50 |
| Aque camphoræ to make | 3iij | 100 |

One teaspoonful to be given, after shaking, every two hours.

The number as well as the variety of substances that have been suggested from time to time as intestinal antiseptics may perhaps justify a more extended review; we can do little more, however, than simply enumerate some of the official substances that have been used and are even now being lauded as valuable and efficient remedies in the treatment of the several gastrointestinal disorders.

The use of antiseptics in the treatment of typhoid and typhus fevers was first suggested in Germany more than thirty years ago, and the arguments that were offered at that time appeared so plausible that internal antiseptics at once sprang into vogue. Among the more popular were the following:

IODUM.—U. S.—Iodin is very seldom used as such at the present time, although it is official.

Average dose: 0.005 gm. (5 mg., 1/10 grain).

LIQUR IODI COMPOSITUS.—U. S.—Compound solution of iodin, better known as Lugol's solution, contains about 5 per cent. of iodin and 10 per cent. of potassium iodid in distilled water. This was at one time a favorite method of administering iodin.

Average dose: 2 c.c. (3 minims).

TINCTURA IODI.—U. S.—Tincture of iodin is virtually a new preparation and combines the strength of the former official tincture with the water-soluble properties of the unofficial compound tinctures, or soluble iodin solutions. It contains 7 per cent. of iodin and 5 per cent. of potassium iodid in alcohol.

Average dose: 0.1 c.c. (1½ minims).

Iodin and the water-soluble preparations of iodin were formerly much lauded as intestinal antiseptics, and even at the present time, though, as was shown in the introductory portion of this article, the practice is now obsolete, they are frequently exploited by manufacturers of nostrums as being little short of the ideal. The form in which iodin was formerly largely used was in connection with carbolic acid or phenol, thus:

| | | |
|----------------|---------|----|
| R. Tinet. iodi | 3iiss | 10 |
| Phenol | m. lxxv | 5 |

Sig.—0.03 to 0.10 c.c. (1½ to 1½ minims) three times a day in water.

Phenol itself is now seldom employed, or even recommended, as an intestinal antiseptic, but the official pheno sulphonates, better known as sulphocarbols, still have a number of ardent advocates.

SODII PHENOLSULPHONAS.—U. S.—Sodium Phenolsulphonate, the sodium sulphocarbols of the previous Pharmacopeia. Average dose: 0.25 gm. (4 grains).

ZINCI PHENOLSULPHONAS.—U. S.—Zinc Phenolsulphonate, is rather more active than the former, combining the astringent properties of the zinc with the antiseptic properties of the phenolsulphonic acid.

Average dose: 0.12 gm. (2 grains).

Both the official salts are readily soluble in water and may be given in solution. Calcium phenolsulphonate is being lauded at the present time as an intestinal antiseptic, but there is no reason to believe that it offers any advantages over the sodium salt, and it is probably quite as harmless.

Of the other official derivatives or substances coming directly under the same classification as phenol we have:

THYMOL.—U. S.—

Average dose: 0.12 gm. (2 grains),

CRESOTUM.—U. S.—

Average dose: 0.2 c.c. (3 minims),

GUAIACOL.—U. S.—

Average dose: 0.5 c.c. (8 minims),

GUAIACOLIS CARBONAS.—U. S.—

Average dose: 1 gm. (15 grains),

ACIDUM SALICYLICUM.—U. S.—

Average dose: 0.50 gm. (7½ grains),

PHENYLIS SALICYLAS.—U. S.—Phenyl Salicylate, better known by its formerly official title, *salol*, is even now considered as being among the few really desirable or available internal antiseptics. It occurs as a white crystalline powder, having a faint but characteristic odor and a slight, rather peculiar taste; it is only slightly soluble in water and, therefore, does not become dissolved to any appreciable extent in the juices of the stomach. It is decomposed, however, by the alkaline liquids of the intestine into its constituents, phenol and salicylic acid, and thus becomes available as an antiseptic. It is said to be particularly useful in preventing the infection of the kidneys by the *Bacillus typhosus*.

Average dose: 0.50 gm. (7½ grains).

HEXAMETHYLENAMIN.—U. S.—Hexamethylen-tetramin has been discussed at greater length under diuretics (chapter v). This substance has also been recommended as an available intestinal antiseptic, but, as noted under diuretics, the ultimate products of its decomposition are largely, if not entirely, eliminated by the kidneys, and it no doubt finds its greatest field of usefulness in preventing possible infection of the urinary organs.

Average dose: 0.25 gm. (4 grains).

It is manifestly impossible to discuss or even to mention all the agents that have been, or are, employed as intestinal antiseptics. Many of the remedies that are recommended as intestinal antiseptics are also useful as anthelmintics. Notable among these is thymol, which has been referred to frequently of late as being a useful as well as an efficient anthelmintic and tenifuge.

Though many efforts have been made to treat tuberculosis by means of internal antiseptics, the favorable influence which has so far been observed is to be attributed to the beneficial effects produced on the tissues, and not to any direct bactericidal action produced by the antiseptics themselves. Of the remedies that have been suggested for this purpose, creasote and guaiacol continue to be used, probably with some benefit.

The whole problem, however, appears to concern curative effect and treatment rather than antiseptics.

Few articles in our materia medica possess any action so specific as that shown by cinchona or its chief alkaloid, quinin, in the treatment of certain forms of malarial fever. Cinchona bark itself owes its introduction into Europe to the fact that it was found to be efficient in the treatment of fevers

2. The following has been used to a considerable extent in the treatment of gastric fermentative dyspepsia, particularly when accompanied by nervous disturbances:

| | | |
|----------------------|--------|----|
| R. Sodii bromidi | gr. v | 3 |
| Resorciniolis | 2F. ii | 1 |
| Aque anisi q. s. ad. | 3iij | 10 |

This dose to be taken after meals in half a glass of water.

of a malarial type. For many years after its introduction into Spain the Jesuits had the bark sent to them by their brethren in Peru and carefully kept the source of its origin a secret, and the substance, therefore, became widely known as Jesuits' bark. Being virtually introduced as a nostrum, or secret remedy, it need not surprise us when we find that it has frequently taken a most important part as one of the component parts of a number of nostrums, even down to our own times.

Quinin, the most valuable of the alkaloids of cinchona, was discovered by Pelletier and Caventou in 1820, and is to-day one of the few substances in medicine that has met with a constantly increasing popularity. Quinin is official under no less than six different titles, in addition to the several scale salts and preparations that are not of direct interest in connection with its peculiar uses in malarial fever.

QUININA.—U. S.—Quinin.

QUININÆ BISULPHAS.—U. S.—Quinin bisulphate.

QUININÆ HYDROBROMIDUM.—U. S.—Quinin hydrobromid.

QUININÆ HYDROCHLORIDUM.—U. S.—Quinin hydrochlorid.

QUININÆ SALICYLAS.—U. S.—Quinin salicylate.

QUININÆ SULPHAS.—U. S.—Quinin sulphate.

Average dose of each of these preparations: 0.25 gm. (4 grains).

The physical properties of the several salts of quinin are so well known that they do not require a description at this time. The reasons for the popularity and use of some of these salts are not always apparent. In America the sulphate is used almost exclusively, while on the continent of Europe the hydrochlorid appears to be given the preference in all cases. That each of the several official preparations of quinin has some particular points of merit is suggested by the following table, showing the relative percentage of anhydrous alkaloid quinin in each and also the relative solubility in water and in alcohol:

| | Per cent. of anhydrous quinin. | Solubility in water. | Solubility in alcohol. |
|---------------------------|-----------------------------------|-------------------------|---------------------------|
| Quinin | 85.5 | 1750. | 0.6 |
| Quinin bisulphate | 59.5 | 8.5 | 18. |
| Quinin hydrobromid | 76.6 | 40. | 0.7 |
| Quinin hydrochlorid | 83.5 | 18. | 0.6 |
| Quinin salicylate | 69.9 | 77. | 11. |
| Quinin sulphate | 74.3 | 720. | 86. |

It will be noted that the very commonly used sulphate, next to the alkaloid itself, is the least soluble in the most common of all solvents, water; this, while a decided advantage so far as masking the taste of the salt is concerned, is a marked disadvantage in attempting to make a solution of the salt. Where quinin sulphate is to be given in solution it must be given in an acid mixture or in solutions that are so dilute that the quantity to be taken would be nauseating.³

The more satisfactory method of administering quinin in the comparatively large quantities that are usually given is in cachets, gelatin capsules or pills.

The use of quinin as a destroyer of the protozoön which causes malarial fever is among the best established facts of therapeutics. It is mentioned here largely to avoid the criticism of incompleteness rather than to offer any suggestions of novelty to the general practitioner.

If fairly large doses of quinin be given four hours before the time at which the chill of malarial fever is expected to occur, and the dose repeated in two hours, the maximum effect of the quinin on the organism is obtained and the chill is usually prevented. The quinin existing in the blood at the time that

sporulation occurs destroys the newly liberated organisms and the blood is rendered aseptic so far as that particular organism is concerned. This process has to be repeated at intervals, sometimes for three or four weeks.

The use of salicylates in articular rheumatism is almost as well established as is that of quinin in malarial fever. The precise mode of action is not known, but it is surmised that its action is somewhat analogous to that of quinin. We may be permitted to add a list of the official preparations that would properly come under this heading, just to show the extensiveness as well as the variety of the official preparations. Surely such a variety as we find here should enable us to choose the appropriate remedy of this type without the necessity of having recourse to any of the nostrums.

ACIDUM SALICYLICUM.—U. S.—

Average dose: 0.5 gm. (7½ grains).

SODII SALICYLAS.—U. S.—

Average dose: 1 gm. (15 grains).

AMMONII SALICYLAS.—U. S.—

Average dose: 0.25 gm. (4 grains).

LITHII SALICYLAS.—U. S.—

Average dose: 1 gm. (15 grains).

STRONTII SALICYLAS.—U. S.—

Average dose: 1 gm. (15 grains).

PIENYLLIS SALICYLAS.—U. S.—Salol (U. S. P., 1890).

Average dose: 0.5 gm. (7½ grains).

METHYLLIS SALICYLAS.—U. S.—

Average dose: 1 c.c. (15 minims).

OLEUM BETULÆ.—U. S.—

Average dose: 1 c.c. (15 minims).

OLEUM GAULTHERIÆ.—U. S.—

Average dose: 1 c.c. (15 minims).

SALICINUM.—U. S.—

Average dose: 1 gm. (15 grains).

The use of mercurials in syphilis requires a much more extensive treatment of the subject than we can accord it in this connection, and the preparations that are usually employed are too well known to require further mention at this time.

Clinical Notes

UNRECOGNIZED EPILEPSY.

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The frequency with which certain forms of epilepsy go unrecognized for years constitutes a disquieting element in the successful treatment of a disease difficult to cure under the earliest diagnosis.

1. A leading reason why certain types of minor epilepsy are not infrequently overlooked, or, being more or less casually observed, are ignored, is that we, too, often make the mistake of regarding epilepsy as "a disease characterized by tonic or clonic convulsions and followed by loss of consciousness." This faulty definition is rapidly becoming obsolete. I believe a better definition is this:

Epilepsy is a disease or disorder affecting the brain, characterized by recurrent paroxysms, which are abrupt in appearance, variable in duration, but generally short, and in which there is impairment or loss of consciousness, together with impairment or loss of motor co-ordination *with or without convulsions*.¹

The fact that this definition is comprehensive enough to include all varieties and subvarieties of epilepsy tends to rob it of scientific accuracy when applied to any particular form of the disease. But this is unavoidable, for it is more difficult to formulate a true definition of epilepsy than it is to define insanity.

1. Spratling: "Epilepsy and Its Treatment."

3. It is truly surprising that the sulphate of quinin continues to be used to the almost complete exclusion of the alkaloid and the other salts. When a tasteless mixture is desired the alkaloid is preferable because it is less soluble than any of the official salts: if it is necessary to administer the drug in solution, ten grains of the hydrochlorid may be given in a teaspoonful of a mixture containing 50 per cent. of alcohol, while three grains of the hydrochlorid, or seven of the bisulphate may be given in a teaspoonful of a watery mixture. The following is a type of the usual acid mixture:

R. Quinin sulphatisgrs. lxxv 5
Acid. hydrochloric dil.m. lxxx 5

Mix. aromat. q. s.3iv 100

When the salt, or better, the alkaloid, is to be given in a mixture, and the taste is to be masked, acids should never be added. Instead of the acid, a sweet substance, like glycyrrhizin, should be used to mask the bitter taste of the quinin. A satisfactory mixture is obtained as follows:

R. Quinina vel quinine sulphatisgrs. lxxv 5
Fld. ext. glycyrrhizæ3iv 15
Syrup of alk. aromat. 33 q. s.3iii 100

2. A second leading reason why epilepsy is not earlier recognized in many cases is because the gravity of its incipient manifestations is not appreciated and because "weaknesses," "faints," "worm fits," "teething fits," "stomach fits," "lapses" and the like are often erroneously held to be innocent in character when they should always be looked on in the most serious light. During the past ten years more than 200 cases of well-defined epilepsy have come under my observation in which the disease had its origin in the innocent convulsive manifestations of early life, these manifestations being taken at their apparent rather than at their real value, and there being at the same time a general failure to respect the convulsive tendency of the individual, genuine epilepsy was sooner or later the inevitable result.

The keynote to the whole situation is in mistaking apparently innocent phenomena for phenomena of the gravest import. Muscular contractions and distortions are nothing in the prognosis of epilepsy compared to the disastrous form of the disease that may be so silent in its appearance, course and termination as wholly to escape unskilled observation. We are just beginning to learn a great truth in the treatment of epilepsy similar to the one it took us hundreds of years to learn about tuberculosis; and that is that freedom from the disease is often but little more than a matter of right living.

If a child who has "weaknesses," "faints," "worm fits," "teething fits," "stomach fits" or other lesser convulsive manifestations (no matter by what name they may be called), even though they apparently disappear for good with the passing of infancy or of childhood, the convulsive tendency of that individual must be respected so long as the individual lives, and particularly must this tendency be respected at certain critical epochs, such as the first and second dentition periods, during attacks of the specific fevers and at puberty—the latter the most of all, for from the twelfth to the sixteenth year, inclusive, constitutes the greatest epileptic age.

I make a plea for the early recognition, proper and prolonged treatment of the convulsive manifestations of infancy and early life that so often later pass into genuine epilepsy.

A NEW ANASTOMOTIC CLAMP.

G. F. ROOSEVELT, M.D.
DENVER, COLO.

The instrument presented here is designed for use in suture anastomotic work. It was originally intended for use in the operation of gastroenterostomy, but it will probably prove equally as efficient, if not more so, in enteroenterostomy.

When two clamps are used the difficulty encountered by the assistant in maintaining the proper relative position of the two portions to be united, sometimes becomes a source of annoyance to the surgeon, occasionally even leading to actual damage to the tissues. In every case it requires the entire use of both hands of the assistant, preventing his being of service in other ways.

The clamp which I have designed is expected, in the majority of cases of this class, to replace the two clamps which have hitherto been required, and the slight loss of time, if there should be any, in adjusting the new instrument in position, will be more than regained later in the operation, because the assistant will be able to save time by doing his share of the work.

As shown in Figure 1, the clamp consists of three parts—a central blade which is reversible and two blades which are interchangeable in an instrument with straight jaws, but which become right and left in a curved-jaw clamp.

The lock is a double Collins, permitting of easy separation and removal of the blades.

In a case of posterior gastrojejunostomy, for example, the stomach is grasped as usual at the desired angle, between the blades "a" and "b," Figure 2, which are then locked at the desired tension, thus virtually forming a single blade carrying the fold of stomach.

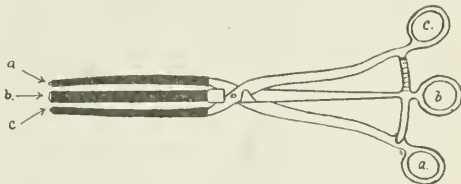


Figure 1.

The handle is now carried along to the new angle, parallel to the line "x-y" in Figure 2, or as near to it as the tissues will permit. The intestine is picked up by the fingers, or by an intestinal clamp applied in the desired line of incision, and raised up to its position against the blade "b." Blade "c" is placed into the lock which is uppermost and brought round until it clamps against "b" with the result shown in Figure 3.

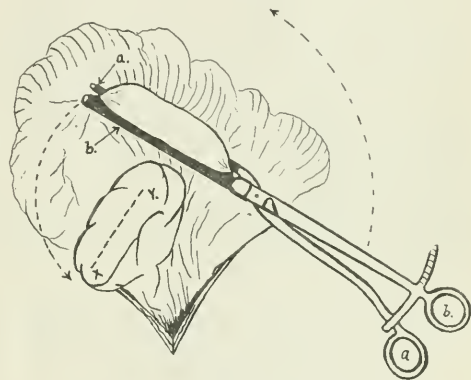


Figure 2.

A strip of gauze sponge is placed along the middle blade and the operation is completed as if two clamps had been used, but much more easily.

After the anastomosis has been made blades "c" and "a" may be removed, leaving "b" in place until the field has been examined for bleeding, etc., when it may be withdrawn.

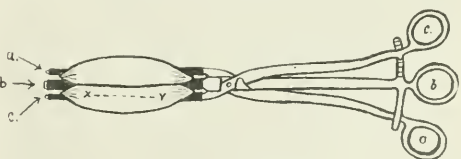


Figure 3.

In trying to hold two clamps in position there is a varying tension on the stomach which is productive of much annoyance to the anesthetist, but this style of clamp does not require that effort and supports itself on the edges of the incision with a constant tension on the stomach. It does not have to be touched from the time it is applied until the anastomosis is complete.

1423 Stout Street.

A PIECE OF STEEL RETAINED IN THE EYE FOR SEVEN YEARS.

LOUIS W. FLANDERS, M.D.

DOVER, N. H.

Patient.—Mr. J. G., aged 42, was sent to me Dec. 21, 1905, for treatment of his left eye. He gave the following history:

History.—Seven years ago, while striking with a stone chisel, a bit of steel flew from the tool and struck him with great force in the left eye. He went to an infirmary where "they found the hole, but could not find the bit of steel." After six weeks of inflammation the eye quieted down, and in six months after the injury the sight was reduced to perception of light only. From that time he had occasional attacks of irritation with blurring of the sound eye, but nothing to amount to anything until the night before he appeared for treatment. He spent that night, as he graphically expressed it, "on his hands and knees in bed, shrieking with pain."

Examination.—I found a marked irido-cyclitis and advised immediate enucleation. The patient demurred, and I gave him until the following morning to decide, and in the meantime the treatment consisted of instillations of atropin, an ice-bag to the eye, and morphin enough hypodermatically to make the pain bearable. He passed a restless night and consented to enucleation the next morning.

Examination of Enucleated Eye.—Section of the enucleated eyeball disclosed the following conditions: Scar of the cornea in the superior quadrant; a round hole in the iris just behind the scar; less cataractous, vitreous completely disorganized. In the inferior quadrant of the ciliary body there was a black object about 3 mm. long by 2 mm. wide. This turned out to be the bit of steel which had oxidized so that the outer shell came away like charcoal, leaving a solid nucleus about one-third of the original size.

Remarks.—It seems remarkable that a foreign body could have lain in the ciliary body, of all places, for seven years before giving rise to marked symptoms.

A CASE OF TETANUS TREATED BY INTRA- SPINAL AND INTRANEURAL INJECTIONS OF ANTITOXIN.

E. DUNSTER KREMERS, M.D.

HOLLAND, MICH.

The following case of tetanus, cured by the antitoxin treatment, is reported as an addition to the list of those already published as treated by this method:

Patient.—J. V. Z., aged 32, male, American, married.

History.—On Nov. 23, 1905, while working near the barn, the patient stepped on a rusty nail, which penetrated the left foot for a depth of about three-quarters of an inch. The wound bled freely. It was dressed with an external application of one of the common clay and glycerin poultices and healed without any trouble. On December 1 the man worked out in the field in cold weather and became thoroughly chilled. He soon began to complain of stiffness in the chest, which increased and spread to the back, legs and jaw. This was on the ninth and tenth days after the injury, and the stiffness was thought to be due to rheumatism. On December 3 and 4 he noticed that he had great difficulty in eating and that this trouble was growing worse. On December 5 he passed what he describes as a terrible night. He suffered repeated severe convulsions and was drawn back in opisthotonos.

Treatment.—When seen by Dr. E. De Spelder at 5 a. m. he was almost exhausted and was given morphin, gr. 1/4, hypodermically. He was seen again at 11 a. m. and his condition was about the same. At this time Dr. H. Kremers saw him

and gave morphin, gr. 1/2, hypodermically, and antitoxin, 2 dr., subcutaneously. The man's temperature was 100 and pulse 100. I saw him first at 5 p. m. on that day. He was sitting up in bed in general rigidity, jaw almost locked and temperature 101.5. Under chloroform anesthesia I introduced a needle into the spinal canal under the third lumbar vertebra and injected two drams of antitoxin. One dram was also injected into the thigh over the sciatic nerve. He was given by rectum chloral gr. xxxv, potassium bromid gr. xx. After this he slept for three or four hours and was kept quiet all night with morphin and large doses of chloral and bromid, which he swallowed through a soft rubber tube.

Course of Disease.—December 7 the jaw was a little stiffer. At 3:30 p. m., under chloroform anesthesia, I exposed the left sciatic nerve high up under the gluteal fold. The nerve was easily found and injected with 30 minims of antitoxin. A silk ligature was passed under the nerve to facilitate finding it and the wound partially closed. The wound in the foot, which had healed, was incised, disinfected with carbolic acid and iodine, equal parts, and packed with iodoform gauze. At 8 p. m., after moving the patient in bed, he went into a severe general convulsion with marked opisthotonos, cyanosis, cessation of respiration and fluttering heart. He was at once given chloroform and kept anesthetized until a hypodermic of morphin, gr. 1/2, had time to take effect, and then he was kept stupid the entire night.

On December 8 the patient had many small spasms, but no more severe ones. Placing a thermometer in the axilla or the drinking tube to his lips would bring on a spasm. During the day his temperature went up to 101.5 in the axilla, but he was kept quiet under drugging. At 5 p. m. the sciatic nerve was re-exposed and injected with 30 minims of antitoxin. A large amount was also injected into the foot. During the night the pulse became unsteady, running up to 135, and at the same time respirations went down to twelve to the minute.

On December 9 the patient was chloroformed once more and the nerve re-exposed. It was intended to inject the nerve, but when brought out of the wound it appeared very red and there was a piece of the sheath a half inch in diameter which had been torn away. On this account, fearing to injure the nerve, and since the patient was not growing worse, the antitoxin was injected into the tissues.

From this time on the condition steadily improved, although the spasms and trismus continued for several days, gradually growing less frequent and less severe. He was kept as still as possible in a darkened room and given morphin, chloral and bromids to keep him quiet. The jaw could be separated only a quarter of an inch, but the patient could be fed with a soft rubber tube. He drank large quantities of milk and water. The temperature slowly dropped with the trismus and rigidity, and on December 25 he was out of the house. The wound in the thigh healed rapidly and there was absolutely no disability in the leg except that the rigidity was slower to disappear from that side.

This case may be regarded as a rather subacute one, as the symptoms were slow in coming on and the jaw was not completely locked. It is hard to say, therefore, just how much influence the antitoxin had in the cure, but the condition was growing worse at the time the injections were first given and it is very probable would have gone on to death. The cases reported by Rogers' go far to show that antitoxin will cure tetanus if used in the manner he describes, even if used without any other treatment, and this case may be added to the list as recovering under the same treatment. As pointed out by Rogers, the chloroform is an important part of the treatment, as it reduces, for a time, the patient's excitability and relieves him of a great deal of his suffering. Chloral, also, in this case was found to be more effective in reducing the number of spasms than morphin. This case also shows that there is no great danger in the treatment itself, because, even though the nerve appeared deeply injected and wounded, there was neither pain, numbness nor paralysis in the affected leg. The treatment was all done in the patient's farmhouse, and this shows that it is an easy matter to carry out.

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SATURDAY, MARCH 10, 1906.

THE FREE DISPENSARY EVIL.

Some time since we mentioned the lack of control of free dispensaries in almost all the states. We referred to the fact that New York had made an attempt to regulate dispensaries, but that the law passed in that state had been aimed primarily at the abuse of free clinics by well-to-do patients and that it only incidentally affected the more important question of the character of medical care furnished in free clinics.

This law has now had six years' trial, and at a recent meeting of the New York County Medical Society, held in New York City, the working of the law was reviewed by physicians and by members of the State Board of Charities and of the City Charity Organization Society. The report of the conference is interesting and enlightening from several points of view. In the first place, it seems to be generally conceded that the law has not attained the object for which it was framed, namely, "to remove the dispensary evil, which was commonly held to be the unrestricted multiplication of dispensaries and the indiscriminate bestowal of medical charity alike on the well-to-do, the self-supporting and the indigent." That the law has failed to remedy this the lay speakers, officials of charitable societies and inspectors for the state board make clear, although there is an attempt on the part of some dispensary physicians to claim that the evil has been lessened. On the other hand, it appears to be undeniable that, to a very great extent, the secondary object of the law has been attained. The licensing, inspection and control of dispensaries by the state board, according to the testimony of laymen and physicians alike, seem to have resulted in great improvement in the conduct of these institutions. It may be well to review briefly the provisions of the law in these respects.

The New York law requires all dispensaries to be licensed by the State Board of Charities. No dispensary may be opened unless it can be shown that there is need for such an institution in that locality and that when it is established it will be properly maintained. Suitable buildings must be provided, drug stores or tenements may not be used, seats for all applicants must be provided, cleanliness must be maintained, and a matron or female nurse must be present at all gynecologic examinations or treatments. The apothecary must be a licensed pharmacist or a medical graduate. Regularity of service is insisted on and also strict rules regarding

the isolation of contagious diseases. The board is empowered to revoke the license for cause, and has done so when necessary.

These provisions are certainly not unreasonable and it should be possible to enforce them. That New York has succeeded in so doing is evident by the reports read at this meeting.

In 1899, previous to the passage of the bill, dispensaries were in operation in tenement houses, drug stores and dilapidated old buildings and shanties. One, which reported treating 48,000 patients annually, was conducted in a wooden structure 12x20 feet and 8 feet high. In another water for physicians and patients was brought in a bucket from the next building. The last report of the board showed that 109 out of 119 dispensaries inspected were found in location and equipment to meet the requirements of the law. There has been an actual diminution in the number of dispensaries in spite of the steady increase in New York's population. In 1899 there were 136 dispensaries, in 1904 only 119, although the population of New York City has increased 150,000 annually during that time. In the matter of the proper conduct of gynecologic clinics, the keeping of records, and the regularity of attending physicians, the board reports decided improvement.

Undoubtedly, then, the law has been of marked benefit in raising the character of medical care in free dispensaries, and from this point of view it may be held up as a model to other states. But why should it have failed in remedying the evil for which it was specially framed? The answer is interesting, for it seems that while the medical profession was responsible for the framing of the law and is, of course, the chief sufferer from the abuses which it sought to abolish, it is the medical profession which defeats and nullifies it. Practically no genuine effort is made to weed out from a dispensary clinic the patients who probably are able to pay a physician's fee. Physicians in charge of dispensary clinics take pride in having a large number of patients on their days. Moreover, the well-dressed, prosperous-looking patient may prove to be the most interesting case of all. Hospital superintendents are quoted as saying that if they should restrict the dispensary cases to those who are clearly too poor to pay a physician the clinics would be so reduced that it would be impossible to retain the best specialists on their staffs. Dispensary registrars report that any attempt to use strictness in the admission of applicants meets with disapproval from the physicians. There is another motive sometimes encountered in privately conducted dispensaries, namely, the pecuniary gain represented by even a very small fee. Dr. G. C. Sturges mentioned instances of dispensaries charging a ten-cent fee which made from \$1,200 to \$3,000 a year.

Undoubtedly the exclusion of unworthy applicants from free clinics is a difficult if not an impossible task. What is to be the standard of "worthiness?" Any at-

tempt to decide on a patient's standing by his clothing, general appearance, intelligence, etc., ignores the fact that the experienced beggar always knows how to dress and act for the part. Dr. E. Le Fevre reported investigating personally thirty-five intelligent, well-appearing applicants for free care who all proved worthy, being people who had already paid their physicians all they could afford and yet needed long courses of treatment. Many a general practitioner is obliged to send to a dispensary patients of his own who need treatment by specialists for which they could not pay.

Then there is the question of dispensaries maintained for teaching purposes in connection with medical schools. Those connected with such schools are seldom anxious to limit the number of patients attending. Moreover, it would seem as if patients visiting such dispensaries and allowing themselves to be used for purposes of demonstration should hardly be regarded as free cases, for in a sense they pay for their treatment.

When we protest against the "abuse of the free dispensary" it is well to remember that we are ourselves chiefly to blame for this abuse, and it would be foolish for us to seek for a remedy through legislation until we are prepared to obey the law after it is passed.

PASSIVE CONGESTION IN THE TREATMENT OF INFECTIONS.

It is probable that in the treatment of many diseases the physician will never be more than the assistant of Nature. A two-fold tendency is to be seen in the therapeutics of recent years, on the one hand an effort to replace some of the older substances by less toxic products of chemical synthesis, and on the other a decided effort to utilize physical therapeutics. Both tendencies are in principle good, but both may be abused. Physical methods especially tend to act by encouraging or hastening natural processes of cure.

Among the advocates of certain forms of physical therapeutics must be mentioned the German surgeon, Bier, who for years has been extolling the value of passive congestion in the treatment of chronic joint affections. A little over a year ago this observer published an article in which he recommended the use of passive congestion in acute infections also. Such conditions as panaritium, furuncles, suppurative tenosynovitis, and acute osteomyelitis were suggested as being amenable to this form of treatment. The methods to be employed were essentially those previously described in the treatment of chronic affections. When the infection was localized in an extremity an elastic bandage could be used, if very restricted treatment was desired; or if the disease was on the trunk or head, a suction apparatus of glass with a rubber bulb exhaust was employed. As in previous articles, Bier laid stress on the necessity of a red hyperemia in the treatment of these cases. A complete stoppage of the venous circulation, with the resulting blue hyperemia, is regarded by him as productive of more harm than good.

Numerous articles have appeared in the past year¹ which support Bier's contention that in passive hyperemia we have a valuable means of combating acute infections. Recently Colley, Herhold and Mindes² have published commendatory articles. The reports show that certain forms of acute infection are more amenable to this treatment than others. In panaritium the application of the rubber bandage seems to be followed in most instances by rapid disappearance of the pain, a smaller incision is necessary (passive hyperemia does not take the place of incision), and the time of healing is materially reduced. Furuncles also seem to be especially suited to this form of treatment; when incision is necessary it need be very small, and if this form of treatment be instituted early enough the process may often be cut short. In phlegmons, particularly those communicating with tendon sheaths, smaller incisions are needed, packing is dispensed with, and in most cases the resulting limitation of motion seems much less than under ordinary surgical methods. In cases of osteomyelitis recovery frequently occurs without operation, and those patients operated on have a shortened period of illness. According to Colley, the method of treatment has a great future in the treatment of certain chronic forms of skin disease, a fact which he seems to have discovered accidentally in treating an individual who suffered from an infection complicating a chronic eczema.

The method of action of this form of treatment is of interest. It certainly does more than merely dam back the venous blood. According to Bier, the lymph stream is also interfered with during the period when the hyperemia is maintained. When the constricting band is removed, however, there is a great increase in the circulation of both blood and lymph. According to Noetzel, the fluid which is present in an artificially produced edema, such as Bier's method induces, is very strongly bactericidal. It is probable, too, that the simple dilution of toxins by the edema fluid plays a part in the process, and that the presence of leucocytes in the fluid is also a factor. The method is then simply a way of assisting Nature; it causes an increase in the flow of lymph, a condition which, as Wright has elsewhere shown, is of great importance in infections, inasmuch as it allows bacterial toxins to get into the circulation and to stimulate the formation of antitoxins. The inflammatory edema which Nature produces doubtless has much the same effect as the artificial edema produced by Bier's method, but once it has taken place there is practically no circulation in the fluid such as is produced by the intermittent production of passive congestion. Hitherto this method of treatment has not been adopted to any extent by American physicians, though the published accounts of its value are certainly encouraging.

1. See abstracts in THE JOURNAL A. M. A., April 1, 1905, p. 1075, and also pages 471, 473, 550, 621, 625 and 691 of the current volume.

2. Münch. med. Wochsft., 1906, vol. III, p. 257.

ANEMIA IN PORTO RICO.

The peculiar and pitiful anemia in Porto Rico is caused by hook worms or uncinaria. "Porto Rican anemia" is simply another term for uncinariasis or ankylostomiasis. Physicians in northern parts see so little of this disease in their practice that it is at first a little difficult for them to grasp the extent, the significance, and the misery of this disease in Porto Rico and other tropical countries.

In March, 1904, a commission was appointed for the study and treatment of anemia in Porto Rico, and reference has been made in these columns to the results of its work, which was deemed of such importance that the Legislative Assembly in 1905 appropriated \$15,000 to continue the commission (Igaravidez, King, Bashford). The preliminary report of this commission, covering the period from June 1 to November 30, 1905, is at hand. A brief glance at some of the phases of its work will show the benefit practical methods based on scientific knowledge may bring to human sufferers in countries like Porto Rico.

The commission organized a central station and several substations for the microscopic diagnosis and the treatment of patients with uncinariasis and for the instruction of the people as to the nature of the disease and the means of its prevention. In all 18,865 patients were treated, 84+ per cent. were cured or practically cured (several hundred cases being still under treatment); only 33+ per cent. of the total number died.

Thymol seems to be the favorite drug and the commission expresses the belief that five consecutive doses of thymol or beta-naphthol are "sufficient, usually, to bring the patient, if not to a technical cure, at least to the assurance of a practical cure." The specific treatment of "Porto Rican anemia" is thus definitely established. "The long list of 'sure-cure' patent iron pills, powders, and blood and nerve restorers, so dearly paid for by the unfortunate and credulous 'jébaro,' paid for, it should be remembered, from the earnings of a class said to be starving in poverty, is a list too long and too disgusting to contemplate without anger and a sense of shame." The use of iron as a *sine qua non* in the treatment of postuncinarian anemia is being abandoned in Porto Rico, and the vendors of patent ferruginous tonics should cease baseless exploitation of their wares.

According to the observations of the commission, 99 per cent. of all who harbor uncinaria receive the infection through the skin, usually of the bare feet, from contact with soil or water loaded with larvae. "Ground itch" or "Mazamorria" is the first sign of infection and, if repeated or severe, uncinariasis may follow, and the patient in his turn becomes a menace to public health. The coffee plantations offer most favorable opportunities for infection of the soil by feces. Based on considerations, most briefly indicated, of this nature, the commission holds that success of the campaign against uncinariasis in Porto Rico involves the treatment of all infected persons

in order to "render innocuous the feces of thousands who will continue to inoculate the soil in spite of prayers, lectures, advice, coaxing and even the prohibition imposed by the law." The wearing of shoes and the provision of latrines or even pits, adequately supervised, for defecation are additional measures that must be pushed to the utmost. We see that uncinariases, now that we know the nature and the manner of spread of the disease, has become a preventable (one is tempted to say, easily preventable) disease. The magnificent work of the Porto Rico commission must be continued and extended.

BUSINESS METHODS AND PROFESSIONAL MORALS.

Recent investigations into business methods have unearthed a degree of corruption which is almost incredible to those unacquainted with the conditions and which have been destructive of confidence in the integrity of the modern commercial world. With no intention of self-righteous boasting and no desire of condoning unjustifiable practices, we are proud to believe that the medical profession is freer from graft than any other equal number of men in the ranks of a profession or business. And this is as it should be. The relation of a patient to his physician is a most intimate one, and one in which implicit confidence is the very foundation of the relationship. The patient puts his life and his health unhesitatingly in his physician's hands; he feels that even if his physician lacks skill or needs assistance in an emergency he at least is honest and will do what seems best for the patient's interests. But it would be remarkable, considering the almost universal prevalence of "graft," if some doctor did not abuse this relationship. This he does in the so-called division of fees, a species of graft that we are compelled to acknowledge does exist, although undoubtedly it is extremely rare. While there is a probability of any of this kind of business going on it demands that we give thought to the matter. It is something we can not afford to treat in an ostrich fashion.

In his retiring address as president of the Syracuse Academy of Medicine Dr. T. H. Halsted brought out in a most forceful way some important truths with regard to this evil. He pointed out the importance of the position of trust and confidence occupied by the members of our profession to the public, and referred in a forceful manner to the abuse that some had made of the privilege in the species of graft referred to above. He said that the dividing of fees, without the patient's knowledge, is a most dishonorable transaction. If the fee division be done with the patient's knowledge then there is no dishonesty in the transaction. The patient has relied on the advice of his physician in selecting the most competent consultant. He assumes that his physician knows the best man, and without question accepts his advice. Did he know that his physician was considering, in addition to the con-

sultant's medical qualification, the question as to how much of the fee he was to receive the patient would probably feel that his doctor's advice might not be wholly disinterested.

The family physician should stand between the surgeon and his patient, looking after the latter's interests and using his judgment as to the necessity for an operation. He can not permit his judgment to be influenced by financial consideration, and if he does he betrays the patient who has placed his confidence in him. A man who permits himself to accept from such a surgeon, consultant or specialist a division of the fee or a commission without his patient's knowledge inflicts an injury on his character which sooner or later will tell on his reputation, because these things which cause a moral deterioration have a way of showing themselves unconsciously. Now, what of the consultant who divides the fee or pays the commission? To begin with, he is taking an unfair advantage of his colleagues, competing with them, not on a basis of professional skill, character and attainments, but he is secretly actually paying money to physicians to have their cases referred to him and diverted from his more honorable colleagues who expect recognition on professional merits alone. This may be a shrewd method of getting lucrative practice, but it has its disadvantages. Such a man thinks too much of his fee, his judgment gets warped, and before he knows it he finds himself in the habit of wondering how much money can be gathered from the patient, rather than what is best to do for him. The physician who has called him in consultation must frequently be in doubt as to how much reliance can be placed—with safety to the patient—on his advice. Each—the payee and the payor of the commission—loses confidence in the other. The patient would undoubtedly question the advice did he know of the method pursued—and some patient will find out—some time.

He who adopts this "graft" makes of his profession a dishonorable business, with the inevitable result of developing his money-making instincts at the sacrifice of professional skill, acquisitions and judgment, and it can be but a matter of time until his reputation—one of the best assets—is gone, and he finds that while he has been getting a practice, his slower, more honest competitor has been building on a surer foundation and has been establishing a reputation. The one has been deteriorating in his moral fiber from the beginning, the other has been gaining strength. So that, in the long run, it will be found that in our profession, as everywhere else, the old aphorism that "honesty is the best policy" still holds true. All surgeons, or practitioners of specialties, are only too well aware of the truth of these statements.

No doubt this system of graft had its origin in the existence of an unfair discrepancy between the size of the consultant's fee and the fee of the faithful physician and general practitioner. With all due allowance for the value of superior ability and experience and the high cost of long years of special training, some consultants charge

fees which, compared with the fee of the general practitioner, must seem excessively large. But this has nothing whatever to do with the matter, or, if it does, **let the division be made, but with the patient's knowledge.** It is certain that many physicians are not receiving the income which they should considering the irregular hours and nerve wearing work in which they are engaged. Yet the best way to increase the income is not through practices of the kind mentioned, but by a united effort to raise prices so that a living income may be earned. The advantages of a united medical profession must be evident to all in this as in other connections and we hope that by such united effort a better financial condition may be brought about, and this without the sacrifice of honor in any respect.

CANCER RESEARCH.

Investigations into the origin of cancer and into other mysteries connected with this obscure disease are being earnestly prosecuted in all parts of the civilized globe. Edinburgh has contained for some time investigators eminent as would-be solvers of the cancer problem, among these may be mentioned Russell and Stiles.

The latest contributor to the subject is Dr. John Beard,¹ lecturer in comparative embryology in the University of Edinburgh. From his study of fish he concludes that aberrant germ cells exist in all parts of the body, each of which, under unknown conditions, may give rise to a cancer, which is thus essentially an asexual structure. Further, Dr. Beard asserts that even in the development of man himself there is a brief but not insignificant stage, during which an asexual structure is produced. In short, that "alternation of generations" (alternately sexual and asexual) which is so familiar in many of the lower animals and plants, has not been entirely suppressed. Dr. Beard is of the opinion that he will discover the cause leading to the arrest of development of the asexual structure. If, as he surmises, a malignant tumor be but another asexual structure, it might be controllable by whatever cause controls the normally produced asexual structure. Dr. Beard thinks that he has, to a certain extent, been able to do this. Rather more than a year ago he demonstrated that in the case of the fish the arrest of development of the asexual stage and the disappearance of the asexual structure coincide with the commencement of the activities of the pancreas. If the secretion of the pancreas be absent the asexual structures of the fish do not degenerate. The constituent in this secretion with which we are most familiar is trypsin. Dr. Beard believes that in mice with experimental cancer he has been able to arrest the disease by means of trypsin. Relatively large doses were given by inoculation, without visible injury to the body cells, while the cancer cells simply crumbled away. Trypsin has already been administered in very modest doses

1. *British Med. Jour.*, Jan. 20, 1906; abstract in *THE JOURNAL A. M. A.*, Feb. 17, 1906, p. 544.

to human patients, the effect being an apparent prevention of the recurrence of cancerous growths after surgical operation. Dr. Beard, arguing from his studies in embryology alone, holds the view that trypsin will be found to be perfectly harmless so far as the living body cell is concerned. The argument in favor of the value of trypsin in cases of malignant tumor is that the living body is a sexual product, and that whereas it has a destructive action on asexual products, it has no power whatever over the cell products of sexual generation. Dr. Beard terms trypsin the architect of the soma.

So many assertions in recent years have been made of cures for cancer, many, if not most, of which have been scandalous and unblushing frauds that men of science are now very chary of accepting any such statements. Naturally, until the cause of malignant growths is discovered, it would be idle to expect a rational and radical cure. There can be no doubt, however, that more or less satisfactory progress is being made in regard to cancer research, and at any rate the deductions of a man of the scientific rank of Dr. Beard are entitled to respectful consideration. It is to be hoped that still more encouraging reports will be forthcoming from the Edinburgh laboratories in the near future respecting Dr. Beard's investigations.

"THE COMING CONQUEST OF CANCER."

The interesting embryologic studies of Beard and his deductions therefrom, anent cancer, referred to above, have been utilized as the basis for more or less sensational and overdrawn statements in the lay press. An article in *Harper's Weekly*,¹ by C. W. Saleeby, M.D., concludes with the following announcement: "It seems more than probable that in trypsin has been discovered, for the cancer cell, that specific poison which must exist for every cell. Only the philosophic few could have guessed for a moment that Dr. Beard's long and famous researches would ever enable him—as they would, indeed, appear to have enabled him—to place in the hands of the physicians a veritable cure for cancer."

Now, do the facts at hand really justify this startling conclusion? Beard holds that in fishes aberrant germ cells exist in all parts of the body, and reviews in a somewhat more definite and modified form Cohnheim's hypothesis of the origin of tumors, more particularly cancer, in persistent embryonal cells. In fish the cells in question disappear as the pancreas assumes its physiologic activity, hence the suggestion already acted on to use trypsin in human cancer. As yet, however, we have no really conclusive evidence that trypsin has any decisive effect on human cancer. It is not claimed, even by Saleeby, that trypsin has been shown to prevent the return of cancer after operative removal. There is no record of the cure of human cancer by trypsin. In experimental cancer of mice trypsin is said to cause the tumor cells to die and to crumble away, but it is plain that many more successful experiments are necessary at

the hands of various investigators before it can be concluded definitely that trypsin cures cancer in mice.

We see that while the results obtained by Beard may warrant the continued study of the effects of trypsin on cancer, there is at present no basis whatsoever for the inference that a veritable cure for human cancer has been discovered. Under these circumstances it would have been more prudent, to say the least, on the part of Saleeby to have refrained from making statements in public print that are not readily differentiated from those "premature, outrageous, and, indeed, brutally cruel announcements which constantly infest the press," and which he himself condemns.

PUBLIC INSTRUCTION IN SEXUAL HYGIENE.

If the knowledge possessed by the medical profession as to the prevalence of the venereal disorders and their disastrous consequences, especially to the innocent wives and mothers of the country, and too often to their offspring, was possessed by the public generally, the evils named could not continue in their present prevalence and virulence. We warn the public freely against smallpox, we create almost a panic in regard to the "great white plague," but we actually cultivate ignorance in regard to a class of diseases which, while not always directly fatal, are directly and indirectly responsible for a vast proportion of the existing human misery. There is no doubt that with a patient and intelligent agitation of this subject by our profession, with the end of securing a more general knowledge on the part of the public of the facts, we could accomplish a vast amount of good and possibly eradicate the evils to a very great extent. A great change has taken place in the last few years, and the sign of the times is that the ban of secrecy is being removed and that light is to be shed on this subject so long shrouded in darkness. Sociologic workers are taking up the problem in earnest, and their co-operation will make effective the awakening for which the medical profession has long appealed. For example, *Charities and the Commons*, a periodical whose views on subjects more or less closely related to medicine we have often had occasion to quote with approval, publishes in its issue of February 24 communications from several prominent medical authorities on sexual hygiene and the necessity and propriety of the instruction of the public, especially the young. There need be no sacrifice of modesty or propriety if the effort is properly conducted. There are many ways in which the instruction can be given by parents to the inquiring child or by teachers and others to the still ignorant adolescent. We must remember that information is sought and secured on these subjects, and there is almost a certainty that what may be obtained from the usual sources is liable to be corrupting and dangerous both from a physical and a moral point of view. A recent writer¹ says: "Even the air of mystery that surrounds this subject when it is not frankly treated is a source of danger. For it stimulates the imagination, drives to clandestine sources of information, and tends to precocious stimulation of the sexual organism." The medical profession has much to do with the creation of a proper public opinion on this subject.

1. March, 3, 1906.

1. Prof. George A. Coe, "Education in Religion and Morals."

It is from physicians that the public has to obtain its facts, as is recognized by the sociologic journal here referred to, and it is only by the dissemination of correct information that we can combat one of the greatest social evils of all times.

THE STATURE OF THE JAPANESE.

The Japanese feel that their comparatively diminutive stature is a national humiliation, according to the reported statements of Surgeon-General Takaki of the Japanese navy. He attributes their smallness of stature to centuries of imperfect nutrition, and believes that by proper dietetics they can soon attain the full stature of the European races. Already, by change of diet, a marked improvement has been made in the Japanese navy, and he thinks that an equal effort will increase the stature of the general population. This is following Western ideals with a vengeance; notwithstanding their diminutive stature the Japanese in war have proved themselves to be fully the equals of at least one European nation, and it is perhaps a question whether their smallness might not have been an advantage to them under the conditions of modern warfare. As a correspondent of *Nature* points out, a very appreciable percentage of the Russian fire must have been ineffective as compared to that of the Japanese on account of the difference in size of the respective human targets. Still, if the Japanese wish to be large—and size has some advantages—no one can object. The main question is whether economic conditions in Japan will afford the essentials for such general dietetic alterations as are called for by the proposed experiment.

Medical News

ILLINOIS.

New Hospital.—The Methodist Memorial Hospital, Mattoon, will be formally opened and dedicated March 17.

Smallpox.—A case of smallpox was discovered in the Illinois State School for the Blind, Jacksonville, February 24.—The mayor of Colfax has ordered the postmaster to cease forwarding any mail from Colfax in order to check the spread of smallpox in that place.

Physician Gets Verdict.—A jury in the Circuit Court of Logan County brought in a verdict for \$350 in favor of Dr. Hiram L. Cosby, Lincoln, against Sheriff James White of Logan County for professional services in saving the life of a man accidentally shot by the sheriff last year.

Old Offenders Brought to Time.—Mrs. E. R. Liens of Decatur, an old-time violator of the Illinois medical practice act, has been compelled by attorneys for the State Board of Health, to make a settlement for her violations, including the payment of all costs of prosecution, and to enter into a written agreement to discontinue practice. Mrs. Liens conducted a bath and massage institution in Decatur and manufactured "Lien Diphtheria Cure." From time to time she undertook the nursing of diphtheria cases, using and applying her own remedy. Suit was brought against her at the instance of the State Board of Health in a justice court, but this suit was decided in favor of the defendant. The board promptly appealed and hearing was set for the January term of the Macon County Circuit Court. The case was settled only after a number of futile efforts of the defendant to secure continuance.—After several months of constant effort to bring justice on him, the State Board of Health has finally been successful in its suit against George B. McClellan, who was advertised extensively in Illinois as "Diamond Dick," the Indian healer. Recently authorizations for McClellan's prosecution had been issued in McHenry, McLean and Marshall counties

and in these counties suit was commenced, but the defendant in each instance escaped before service could be secured on him. About the middle of February he was found to be plying his trade in Adams County, in the vicinity of Quincy. He was caught and prosecuted at Golden, and a judgment for \$122.85 was secured against him. Being unable to pay the fine, the defendant gave a bill of sale for his eight trunks and other paraphernalia to avoid going to jail. "Diamond Dick" is an old offender. He was fined \$100 and costs in Peoria in 1901, and similarly in 1903 in Marengo, where he spent some time in jail. The energetic action of the State Board of Health has made practice impossible, and he now finds himself deprived of his goods and with cases pending against him in various counties, in which he will be promptly prosecuted if he appears.

Chicago.

Smallpox.—A case of smallpox was brought into Chicago from the West, February 27. The patient was a railway porter. No other cases have developed.

Laryngologists Meet.—A successful meeting of the middle section of the American Laryngological, Rhinological and Otolological Society was held in the Northwestern University building, February 26.

More Funds for Hospital.—J. Ogden Armour has given \$25,000 toward the \$140,000 required for the new George Smith addition, St. Luke's Hospital. Of the required amount \$80,000 is at present in the treasury.

Hospital Plans Abandoned.—It is reported that the Iroquois Memorial Association has abandoned its plans for the establishment of a hospital to commemorate those who perished in the Iroquois Theater fire, on account of lack of interest in the project.

Needs New Building.—The Chicago Eye, Ear, Nose and Throat College contemplates the erection of a new building to accommodate the increasing needs of the institution, to cost \$75,000. At the annual meeting the old board of directors was re-elected.

Deaths of the Month.—February furnishes the lowest mortality rate recorded in the history of the city, 14.07 per 1,000. The total deaths number 2,217, and among the principal death causes were: pneumonia, 413; consumption, 239; nephritis, 164; heart disease, 163, and violence, including suicide, 159.

Deaths of the Week.—The total deaths from all causes for the week ended March 3 were 563, equivalent to an annual death rate per 1,000 of 14.32, a lower death rate than for the previous week or for the corresponding week of last year. Pneumonia led the death causes with 111, followed by consumption with 63, nephritis with 43, violence, including suicide, with 36, and heart diseases with 32.

Recommends International Vital Statistics System.—In *THE JOURNAL*, January 27, page 283, in the item concerning the report on the Chicago department of health statistics by the committee of investigation, which was appointed for the purpose by the Chicago Medical Society, the impression is given that the committee's approval covered all the methods of the department. The committee did not favor the system of classification in use by the department and recommended the international system of classification instead.

IOWA.

Inebriate Hospital Full.—The new State Hospital for Inebriates, Knoxville, which was opened early in February, is now filled nearly to the limit, and many applicants are waiting for admission.

Magnetic Healer Convicted.—D. F. Miller, a well-known healer of Waterloo, who was arrested for practicing surgery, medicine and obstetrics without state license, has been found guilty as charged.

New Hospitals.—A German-American Catholic hospital is to be erected in Waterloo this year, to cost about \$70,000.—The newly constructed cottage for men at the Clarinda State Hospital was opened early last month.

Made Insane by Drugs.—Dr. Hiram L. Getz, Marshalltown, has been adjudged insane and committed to the Independence State Hospital. He has been suffering from diabetes for about a year and has become habituated to the use of drugs.

Will Not Admit Consumptives.—The State Board of Health, at a recent session held in Des Moines, adopted an amendment to its rules by which no teacher or child afflicted with tuberculosis is to be permitted to teach or attend school in the state.

Damages Against Physician.—In the case of Reynolds vs. Dr. Thomas U. McMannus, Waterloo, in which \$10,000 damages

were claimed on account of alleged malpractice, a verdict of \$5,000 for the plaintiff was returned February 16. Dr. Me-Manus' attorneys have asked for a new trial.

Personal.—Dr. Even F. Cowger, Riverton, has moved to Monte Ne, Ark.—Dr. Amos J. Thorner, Burlington, has been made president of the Des Moines County Medical Society, vice Dr. Nathaniel McKittrick, resigned.—Dr. Samuel W. Moorhead has been made postmaster of Keokuk.

Southwestern Association Meeting.—At the annual meeting of the Southwestern Iowa Medical Association, held in Creston, February 16, about sixty were present, and the following officers were elected: President, Dr. William R. Whittall, Hastings; vice-president, Dr. Lyneh, Greenville, and secretary and treasurer, Dr. Joseph P. Claybough, Creston.

Boy Healer a Practitioner.—In the case of the State of Iowa vs. J. G. Gallagher, "the Minnesota boy healer," charged with illegal practice of medicine, the demurrer to the indictment was overruled by the court, who stated that "a person shall be held as practicing medicine who publicly professes to heal or cure diseases or ailments of the human body if such profession be made under such circumstances as to indicate that it is made with a view of undertaking to cure the afflicted."

KENTUCKY.

Injured in Explosion.—Dr. R. E. Gatz, professor of pharmacy at the Hospital and College of Medicine, Louisville, was seriously injured by the explosion of a test tube in the laboratory, February 24.

Physician Wins Suit.—In the suit of Mrs. Kate L. McCullough vs. Dr. Elias S. Frey, Louisville, for \$5,000 damages, alleged to have been due to an improper prescription, the jury returned a verdict for the defendant January 24.

Midland Physicians Meet.—The Kentucky Midland Medical Society met at Midway January 15 and elected Dr. William B. McClure, Lexington, president, and Dr. Charles W. Kavanaugh, Lawrenceburg, vice-president, and Dr. J. Harry Arnold, Versailles, secretary-treasurer.

Fires.—Fire in the Odd Fellows' Building, Smith's Mills, February 8, caused \$300 damages to the office of Dr. Levin C. Royster.—On February 3 a disastrous fire occurred in Richmond which caused the loss of \$1,000 each to Drs. Thompson J. Taylor and J. G. Bosley.

Colored Physicians in Trouble.—In the case of the City of Owensboro vs. Dr. Walker, charged by Dr. Jeremiah M. Peters with assault in a quarrel over a vaccination, Dr. Walker was fined \$25, and during the progress of the trial Dr. Peters was charged \$3 for contempt of court.

New Hospital Staff.—The Good Samaritan Hospital, Lexington, announces the following hospital staff: Consulting staff, Drs. David Barrow and Thomas H. Kinnaird; attending staff, Drs. Frank H. Clark, James C. Carriek, Edward M. Wiley, Julian T. McClintons, Waller O. Bullock, John W. Scott, Archibald B. Barkley, Thomas Holloway, Charles W. Morris, Joseph A. Stucky, N. Lewis Bosworth and Jefferson D. Kiser.

Tri-State Meeting.—At the meeting of the Central Tri-State Medical Society of Ohio, West Virginia and Kentucky, held at Catlettsburg January 20, the following officers were elected: President, Dr. George Marshall, Portsmouth, Ohio; vice-presidents, Drs. John D. Williams, Catlettsburg, Ky., and Albert S. Brady, Greenup, Ky.; secretary, Dr. Smithfield Keffler, Ashland, Ky., and treasurer, Dr. Thomas W. Moore, Huntington, W. Va.

Personal.—Dr. Charles H. Todd of Owensboro has been elected president of the Daviess County board of health.—Dr. Clarence H. Vaughn, Richmond, has been elected president of the Central Kentucky Medical Society.—Dr. Robert Rivers, Paducah, who suffered a severe burn of the right eye several weeks ago, has entirely recovered.—Dr. John V. Hayden, Salem, has been elected president, and Dr. Frederick G. La Rue, Smithland, secretary, of the Livingston County board of health.—Dr. W. Cuy Eckman has been elected jail physician of Covington, vice Dr. James A. Davis.—Dr. J. Halpin O'Reilly, Louisville, is seriously ill with pneumonia.—Dr. Leslie Rudolph, Woodville, who has been critically ill, is improving.

MAINE.

Gift to Hospital.—An anonymous friend of the Knox County General Hospital, Rockland, has made his annual donation to the institution, to be used for the maintenance of the James A. Creighton memorial free bed.

Northern Maine Hospital Opened.—The Northern Maine General Hospital, Eagle Lake Mills, was opened for the reception

of patients January 15. The building contains forty rooms and three wards, and will have cost, when completed, about \$12,000.

Clinical Society Meets.—The Waterville Clinical Society held its annual meeting February 22 and elected the following officers: President, Dr. Edward W. Boyer; vice-president, Dr. H. E. Milliken; secretary and treasurer, Dr. Frederick C. Thayer, and business committee, the vice-president, secretary and Dr. B. B. Cragin.

Personal.—Dr. Herbert S. Sleeper, Lewiston, has been elected a member of the local board of health.—Dr. Bigelow T. Sanborn has been elected a member of the Augusta City Hospital corporation.—Dr. Milton C. Wedgewood, Lewiston, is seriously ill.—Dr. David S. Hunnewell, Madison, who has been ill with bronchitis, is reported to be much improved.

Academy Election.—At the annual meeting and banquet of the Maine Academy of Medicine and Science, held in Portland, Dr. Clarence A. Peaslee, Bath, was elected president; Dr. Albion H. Little, Portland, corresponding secretary; Dr. Frank Y. Gilbert, Portland, statistical secretary; Dr. Gilman Davis, Portland, assistant secretary, and Bertrand G. Mareh, Portland, treasurer.

County Society Meeting.—The twelfth annual meeting of the York County Medical Society was held at Biddeford, January 11. The following officers were elected: President, Dr. William W. Smith, Ogunquit; vice-presidents, Drs. M. Hubbard Ferguson, Biddeford, and Roland S. Gove, Sanford; secretary, Dr. Clarence E. Thompson, Saco, and treasurer, Dr. Harry L. Prescott, Kennebunkport.

Communicable Diseases.—Smallpox is still being reported in the eastern part of the state, the latest reports coming from Houlton, Cary and Lincoln.—Typhoid fever has appeared in the lumber camp and mill of S. P. Dean & Son Company, west of Dudley. The condition is rendered more serious by the fact that the camp is so far removed from medical aid.

—A colored car cleaner for the Boston & Maine Railroad Co. at Portland was taken sick at his work at the Union Station, February 24. He was examined by physicians and found to be suffering from smallpox. He was removed to the detention hospital.—A case of smallpox was discovered in a lumber camp in the town of Ludlow this past week. The authorities were notified and the camp was quarantined.

MARYLAND.

Patent Medicine Bill. A new patent medicine bill, said to be satisfactory to the drug trade, has been introduced in the legislature.

Vital Statistics Bill.—Favorable report has been made in the senate by the committee on sanitary conditions on a bill to enable the State Board of Health to collect vital statistics when local officers fail to collect them.

Tuberculosis Sanatorium Bill.—A bill has been introduced into the senate creating the Maryland Tuberculosis Sanatorium and making appropriations for its erection and maintenance. It requires the institution to be accessible by both railroad and water transportation, and places it under the control of a board of managers composed of the governor, the treasurer, the comptroller of the treasury, ex-officio, and six other persons, who shall be appointed by the governor. Of these six, two are to serve for two years, two for four years and two for six years—from May 1, 1906. Thereafter the governor is to appoint two members of this board, to serve for six years, biennially. They are to be chosen with a view to their intelligence, experience and character and without reference to ecclesiastical or party ties. The bill appropriates \$100,000 for the establishment of the institution, land and buildings, and \$25,000 annually for its support. It has the approval of the state tuberculosis commission and State Board of Health, and is backed by the medical profession.

Baltimore.

February Deaths.—During February 23 persons died from whooping-cough (which is quite prevalent), 10 from influenza, 119 from consumption and 177 from pneumonia.

Smallpox.—Seven cases of smallpox were reported during the week ended February 25; 8 patients, all colored, were sent to the city quarantine station from Baltimore County on the same day; 19 cases in all were reported in the city during February.

Addresses Delivered.—Dr. Ira Remsen, president of the Johns Hopkins University, addressed the Johns Hopkins Alumni in New York City, March 2.—Dr. Howard A. Kelly spoke to 1,000 men at St. John's Church, Roanoke, Va., Febru-

ary 25, on "Purity of Manhood."—Dr. N. H. D. Cox lectured March 4 on "Missions in Africa," where he spent three years as a missionary.

Hospital Report.—According to the twenty-eighth annual report of the Presbyterian Eye, Ear and Throat Charity Hospital, 11,803 patients were treated in 1905; 10,605 of these being white. There were 7,012 eye, 2,348 ear and 2,443 throat cases. There were performed 1,392 operations on the eye, 166 on the ear and 750 on the nose and throat. Since the opening of the hospital 227,048 cases have been treated.

MICHIGAN.

New Hospital Soon Ready.—The new Lutheran Hospital of Bay City will be ready to receive patients April 1.

Personal.—Dr. W. Francis Ertell, Kalamazoo, has been confined to the house by illness.—Dr. Andrew P. Biddle, Detroit, is seriously ill with inflammatory rheumatism.

Patent Medicine Ordinance.—An ordinance to prohibit the free distribution of samples of patent medicines, drugs, ointments, pills, powders and pellets on the streets or from house to house in the city of Grand Rapids, was passed by the common council, February 19.

Smallpox.—Smallpox is still increasing in Gladstone, and several cases are reported among the employes of the Cleveland Cliff Iron Company, Kipling.—The disease has appeared in the vicinity of Calumet, and it is said that in the logging camps 200 men are at present under quarantine.

Banquet to Dr. Harrison.—A dinner to welcome Dr. Beverly D. Harrison, secretary of the Michigan State Board of Registration in Medicine, formerly of Sault Ste. Marie, to Detroit, was given by Dr. Fleming Carrow, February 21, at which a number of the prominent physicians of Detroit were present.

Trichinosis.—Dr. J. W. Gustin, chairman of the Bay City board of health, has located the source of the trichinosis infection which has caused more than thirty cases of illness and one death in the city, at a farm near Vassar, where the hog from which the infected meat was cut was purchased.

New Dean of the Dental Department.—Prof. W. D. Miller of the University of Berlin has been offered and has accepted the position of dean of the Department of Dentistry of the University of Michigan, Ann Arbor. He will come to this country and begin his work in 1907. Dr. Miller's researches on the bacteriology of the mouth and dental caries are well known. He is a graduate of the University of Michigan, but has been the professor in the dental department of the University of Berlin for twenty-five years.

NEW YORK.

Water for Long Island Towns.—The Citizens' Water Supply Company has made a contract to build a plant at Great Neck and supply that place and Thomaston with water. The entire plant will cost nearly \$100,000 and will have a capacity of 2,300,000 gallons a day.

Osteopaths Plead.—Osteopaths in large numbers attended the joint hearing on February 28 before the senate judiciary and assembly public health committees to plead for the passage of a bill establishing a board of examiners for osteopathic physicians. The measure was opposed by physicians from all over the state.

A Field Hospital.—A bill was signed by Governor Higgins on February 26 providing for the organization of a field hospital to be attached to the headquarters of the national guard, to consist of one surgeon with the rank of major, three assistant surgeons, six field hospital sergeants, eight corporals, thirty privates, one musician and one cook.

Bills Proposed.—A bill has recently been introduced into the legislature providing for a reservation on both sides of the Bronx River, from Kensico to Bronx Park. The reservation is considered necessary to prevent the pollution of the Bronx River by the towns to the north.—Another bill provides that "any person who by word of mouth or by written or printed circulars, messages, letters, documents, pamphlets, newspapers or magazine articles or publication of any kind, made, issued or circulated by him or by his authority, advocates or teaches the duty, necessity or propriety of putting to death by legal sanction or otherwise persons afflicted with an incurable disease because of their condition, is guilty of a felony."

Insanity Increasing.—According to the annual report of the state commissioner in lunacy submitted to the legislature, insanity is on the increase in this state. In 1892 there was one insane person to every 337 people in the community.

Now the ratio is one to every 299. The commission considers this condition grave, but says that the new cases last year were fewer than the previous year. There are 27,406 insane in the public and private institutions of the state and 6,000 insane are maintained in their own homes. In the state institutions the net increase last year was 499, the lowest in ten years. It cost the state \$4,593,177 to care for the insane last year. Improvements to insane hospitals cost \$838,000 during the year. There were 5,316 new cases of insanity developed last year, of which the state institutions discharged 1,442 as recovered and 1,257 as improved. The state hospitals for this year asked \$2,000,000 for betterments, but the commission has cut this to \$1,500,000. The legislature is asked to appropriate \$4,950,000 for the care of the insane this year. The commission expects that with the money available for improvements and additions to the state hospitals the overcrowding in these institutions will cease before the end of the year. The commission presents the first report to the state board of alienists, which is especially charged with the duty of returning to their homes alien lunatics who find temporary domicile in the state. This work was hitherto undertaken by the commission of the state hospital superintendents. Owing to the activity of the new board the state was relieved during the past year of 417 insane patients of the alien class.

Report of New York State Health.—The report of the New York State Department of Health for 1905 states that the most conspicuous feature of epidemic diseases has been the continued prevalence of cerebrospinal meningitis and the increase in its mortality. The disease was most prevalent in the maritime district and mostly in the borough of Manhattan. At the same time there was a moderate increase in the Hudson and Mohawk valley districts, and in the east central and the Lake Ontario and western districts. This, however, was anticipated, as it has been observed that a considerable local outbreak is often attended in subsequent seasons by much more widespread prevalence. Smallpox existed in a few places in the state during the year, but there were no deaths from it outside of New York City. The general mortality of the year was excessive, the spring mortality exceeding that of the summer; this was due chiefly to pneumonia and acute respiratory diseases, influenza being one of the chief of these. During the year rules were adopted requiring that certificates of stillbirths be filed in the State Bureau of Vital Statistics. These certificates showed that there were about 10,000 stillbirths in the state during the year. The death rate in the larger of the state institutions was 5.56 per 100, against 6.85 during the previous year. The report states that the registration of births is far from satisfactory, and that the most incomplete registrations are in the cities of Albany and Troy. The registration of marriages, while more complete than that of births, is not satisfactory, and the report advises the enactment of a law requiring the contracting parties to procure a marriage license from the county clerk of the county in which the marriage is to be performed. It is also recommended that for statistical purposes as well as for the safe keeping of original certificates of births, marriages and deaths in the state, all such certificates outside the city of Greater New York should be filed with the State Department of Health. The work of the bureau of sanitary engineering in conserving the water supplies of the state is also noted. The report states that the department should be better equipped to protect the water supplies of the municipalities of the state, thus enabling it to prevent epidemics of typhoid fever due to impure water. General investigations of sewage systems and of sewage disposal were made. New work is outlined and needed changes and improvements are suggested.

New York City.

Centennial Celebration.—At a meeting of the Medical Society of the County of New York, held January 22, it was voted to celebrate the centennial of the incorporation of the society by a dinner at the Hotel Astor on the evening of April 4.

Illegal Practitioners Fined.—In the Court of Special Sessions, January 11, Anthony Ofrias, a druggist of 382 Tenth Avenue, was fined \$250 for illegally prescribing for a fee.—John Justin, an osteopath, was fined \$100 for practicing without a license.

Hospital Dedicated.—Archbishop Farley dedicated the new St. Francis Hospital on March 1. It occupies the entire block bounded by One Hundred and Forty-second and One Hundred and Forty-third Streets, Brook and St. Ann's Avenues, and contains 400 beds.

Harvey Society Lecture.—The twelfth lecture in the Harvey Society course will be delivered by Prof. Theobald Smith of the Harvard Medical School at the New York Academy of

Medicine, March 10, at 8:30 p. m. Subject: "The Parasiticism of the Tubercle Bacillus and Its Bearing on Infection and Immunity."

Needs of Hospital.—The New York Society for the Relief of Ruptured and Crippled reports that in 1905, 963 patients, mostly children, were treated in the hospital, and that 44,157 treatments were given outside. The hospital is very much in need of funds and runs \$40,000 behind its permanent subscriptions every year.

Homes for Poor Convalescents.—Comptroller Metz urges the leasing by the city of the Manhattan Beach and the Oriental properties, including the hotels, for convalescent homes for the city's poor. The Austin Corbin estate, which owns the hotels, is willing to lease these two properties to the city for \$150,000 a year, or to sell outright for \$3,150,000.

More Physicians for Bellevue.—As the result of recent action taken at a meeting of the board of trustees of Bellevue and the Allied Hospitals, Bellevue will hereafter have four paid physicians in its receiving ward. They will receive a salary of \$600 annually, will serve four-hour tours of duty, and will probably be chosen from the internes of the hospital.

Hospital Economies.—A preliminary meeting of representatives of more than a score of hospitals was held recently with a view to effect economies on hospital management. It was suggested that the city take charge of the ambulance service and establish a system of receiving stations throughout the city, where patients might first be taken and then sent to such hospitals as were able to receive them.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending February 24, 1,636 cases of measles, with 34 deaths; 373 cases of tuberculosis, with 167 deaths; 3:1 cases of diphtheria, with 77 deaths; 214 cases of scarlet fever, with 8 deaths; 22 cases of typhoid fever, with 9 deaths; 15 cases of cerebrospinal meningitis, with 20 deaths, and 62 cases of varicella; a total of 2,763 cases and 315 deaths.

Hospital Statement Corrected.—At the annual meeting of the trustees of the Hebrew Infant Asylum it was announced that this institution had recorded but one death during the year and that this was probably the lowest mortality for any such institution in the country. It seems that the Colored Orphan Asylum had only one death last year out of an average of 327 children, more than twice the number sheltered by the former institution.

For Quieter City.—The representatives of various women's organizations were on hand at the City Hall on March 1 to endeavor to make an impression on the public health committee of the board of aldermen with reference to the suppression of street noises. Dr. Darlington stated that the health department was frequently called on to suppress noises, and that when a real nuisance was found it was peremptorily suppressed.

Personal.—Dr. Jesse B. Mickle, former superintendent of the Metropolitan Hospital on Blackwell's Island, has resigned on account of failing health.—The two upper floors of Dr. Franklin Shiels' home were destroyed by fire, causing damage amounting to \$5,000.—A fire occurred in Dr. Robert Abbe's home on March 1 which did about \$100 damage.—The Rev. John J. Collins has resigned the presidency of Fordam University Medical College in order to take up educational work in Jamaica.

Diphtheria in Hospital.—Dr. I. O. Woodruff, head of the medical division of Bellevue Hospital, was attacked with diphtheria on March 1, and at once removed to Minturn Hospital. It is alleged that the entire hospital, and especially the children's wards, had a narrow escape from a general infection. The hospital physicians contend that while they held that the cases which caused the disease to spread were diphtheria, the board of health declared them to be only exaggerated cases of tonsillitis.

For Seaside Hospital.—John D. Rockefeller, Jr., has offered to give the Association for the Improvement of the Condition of the Poor \$125,000 toward the erection of a permanent seaside hospital for children suffering from tuberculosis of the bones and glands on condition that a like amount is raised before July 1, and that the permanent maintenance of the hospital is assured. An anonymous donor has promised to give \$25,000 of the fund that must be secured. Jacob H. Schiff, Mortimer L. Schiff and Percy R. Pyne have promised \$5,000 each, and Felix M. Warburg, \$2,000.

Suway Consumption.—Autopsies made at the Bellevue morgue show that some deaths have been due to fine particles of steel in the lungs. This statement was made public after

autopsies made on two subway track walkers within the past month. Dr. Soper, in his report to the rapid transit commission, declared that in samples of subway dust examined by him there occurred more than 60 per cent. of the minute steel particles, and it has been established that the steel dust generated by friction in the subway amounts to a ton a mile each month. Dr. Soper finds the subway cleaner than the streets. General results show that there are twice as many bacteria in the air of the streets as there are in that of the subway. The subway could be made more healthful by substituting a smooth concrete surface for the broken stone ballast between the tracks that forms a nesting place for dirt and germs.

The Smoke Nuisance.—The recent widespread increase of the smoke nuisance has caused a renewal of the agitation for the stricter enforcement of the law governing the escape of smoke and noxious gases within the city limits. The Academy of Medicine has taken the matter up and the president, Dr. Charles L. Dana, has appointed a committee consisting of Drs. Joseph D. Bryant, Robert Abbe and Walter B. James to investigate the matter. Dr. F. M. Crandall, president of the County Medical Society, has also taken up the investigation. On February 23 Dr. Darlington read a paper on "Municipal Regulation of the Smoke Nuisance" before the Society of Chemical Industry, in which he depicted the difficulties of the department in obtaining the conviction of burners of soft coal. Charles T. Barney, who has made an extensive study of this question, says that under a certain section of the charter it is provided that in all judicial proceedings orders of the health department shall at all times be regarded and treated as *prima facie* just and legal, and that whoever shall violate an order of the health department shall be guilty of a misdemeanor and be subject, in addition, to a penalty of \$250, to be recovered in a civil action. It was stated that until September, 1905, the department acted under these sections and obtained prompt compliance with its orders.

PENNSYLVANIA.

Upholding Dr. Dixon.—At the meeting of the Clinton County Medical Society, January 18, resolutions were adopted approving the actions of Dr. Samuel G. Dixon, the state commissioner of health, in enforcing the vaccination laws of Pennsylvania; and unanimously agreeing that the way to prevent smallpox is by vaccination; and that those who try to prevent and bring it into contempt only show their ignorance.

Pennsylvania Relief Report.—The monthly report of the Employes' Relief Fund for the Pennsylvania Railroad Company's lines east of Pittsburgh and Erie shows that the payments of benefits to its members and the families of deceased members for the month of January amounted to \$143,681.41, of which \$59,681.86 were on account of death, and \$84,599.55 on account of disability by sickness and accident. The payments thus far are stated to have amounted in the aggregate to \$14,484,233.46, of which \$5,958,326.79 were on account of deaths and \$8,525,906.67 on account of disability.

Gifts for Hospitals.—W. L. Schaefer, Pottsville, has given to the Pottsville Hospital \$5,000 to endow a bed for sick and injured children in memory of his deceased wife.—The family of the late J. Preston Thomas, West Whiteland, have given \$6,000 to the Chester County Hospital to endow a room in that institution. By the will of Thomas Wiggins, Berwyn, \$500 was bequeathed to the institution.—Bradlock General Hospital received more than \$4,000 as Christmas offerings.—By the will of the late Martin Bates, Lancaster, \$10,000 is bequeathed to the Lancaster General Hospital.—By the will of the late James B. Oliver \$5,000 is devised to the South Side Hospital, Pittsburg.—W. Ellis Corey has contributed \$10,000 toward a hospital for Bradlock.—By the will of John Porterfield, Allegheny, the following institutions are benefited: United Presbyterian Memorial Hospital, \$10,000; Presbyterian Hospital, Allegheny, \$10,000; St. Joseph's Hospital, Allegheny, \$10,000, and on the death of his sister \$100,000 is to be given to the Allegheny General Hospital.

Society Officers Elected.—At the regular meeting of the Clearfield County Medical Society, Clearfield, January 11, the following officers were elected for the year: President, Dr. Hiram O. King, Curwensville; vice-president, Dr. John S. Kelso, Woodland; secretary and treasurer, Dr. C. R. McGirk; censor, Dr. Samuel J. Waterworth, Clearfield, and committee on public policy and legislation, Drs. Samuel C. Stewart, Clearfield; J. Frank Rowles and James L. Henderson, Osceola Mills.—At the regular quarterly meeting of the Franklin County Medical Society the following officers were elected: President, Dr.

Charles M. McLaughlin, Greencastle; vice-presidents, Drs. John C. Greenawalt, Chambersburg, and William F. Sappington, Webster Mills (Fulton County); secretary, Dr. John J. Coffmann, Scotland; assistant secretary, Dr. H. Clay Devilbiss, Chambersburg; treasurer, Dr. David Macley, Chambersburg, and censor, Dr. T. H. Weagly, Marion.—At the annual meeting of the Huntingdon County Medical Society, January 11, the following officers were elected: President, Dr. John C. Fleming, Shirlersburg; vice-president, Dr. Charles A. McClain, Mount Union; treasurer, Dr. George G. Harman, Huntingdon; secretary and reporter, Dr. Howard C. Frontz, Huntingdon, and censors, Drs. Rudolph Myers, Huntingdon; Charles Campbell, Petersburg, and Charles R. Bush, Orbisonia.—At the annual meeting of the Lancaster County Medical Society the following officers were elected: President, Dr. Leroy K. Leslie, Bareville; vice-presidents, Drs. John P. Roebuck, Lititz, and Samuel H. Heller, Lancaster; secretary, Dr. Park P. Breneman, Lancaster; treasurer, Dr. George H. Rohrer, Lancaster; reporter, Dr. Park P. Breneman, Lancaster, and censors, Drs. George W. Berntheizel, Columbia; Oliver Roland, Lancaster, and James Mitchell, Lancaster.—At the annual meeting of the Lehigh County Medical Society the following officers were elected: President, Dr. Augustus W. Hendricks, Allentown; vice-presidents, Drs. Palmer J. Kress, Allentown, and Morris F. Cawley, Allentown; recording secretary, Dr. J. Treichler Butz, Allentown; corresponding secretary, Dr. Willard D. Kline, Allentown; treasurer, Dr. Albert J. Erdmann, Allentown; censors, Drs. H. Herbert Herbst, Allentown; Martin J. Backenstoe, Emaus, and W. B. Erdmann, and reporter, Dr. William A. Hausman, Jr., Allentown.—At the fifty-seventh annual meeting of the Medical Society of Northampton County, held in Easton, January 19, the following officers were elected: President, Dr. Arthur D. Reagan; Easton; vice-presidents, Drs. J. Frank Hahn, Bath, and Harry C. Pohl, Nazareth; secretary and reporter, Dr. J. J. Quiney; corresponding secretary, Dr. John E. Fretz, Easton; treasurer, Dr. Joseph S. Hunt, Easton, and censors, Drs. Charles McIntire, Easton; D. H. Keller and William L. Estes, South Bethlehem.—At the annual meeting of the Perry County Medical Society the following officers were elected: President, Dr. F. A. Gutshall, Blain; vice-presidents, Drs. W. Homer Hoopes, Newport, and Edward E. Moore, New Bloomfield; secretary, Dr. A. Russell Johnston, New Bloomfield; treasurer, Dr. David B. Milliken, Landisburg, and reporter, Dr. Luther M. Shumaker, Elliptsburg.—At the annual meeting of the Warren County Medical Society, January 10, the following officers were elected: President, Dr. William M. Robertson, Warren; vice-presidents, Drs. Otis S. Brown, Warren, and John C. Russell, Warren; treasurer, Dr. Morris S. Guth, Warren; secretary and reporter, Dr. Mary Conant, and censors, Drs. Michael V. Ball, Warren; Christian J. Frantz, Warren, and Charles W. Schmehl, Warren.

Philadelphia.

Hospital Examinations.—The examination for two resident physicians for the Easton Hospital will be held in Easton on Saturday, March 24.

Hospital Report.—A remarkable year's record is shown by the report of the Maternity Hospital. There was but one death in the 72 cases treated during the year, and this was the first death in three years.

Dr. Allen Entertained.—Dr. Richard H. Harte gave a dinner at his residence, March 3, in honor of Dr. Dudley P. Allen of Cleveland, Ohio, secretary of the American Surgical Association. Dr. Allen delivered an address before the Philadelphia Academy of Surgery at the College of Physicians, March 6.

Charitable Bequest.—By the will of the late Louisa Dieterich the Rush Hospital for Consumptives will receive \$10,000 for the maintenance of two free beds, to be called the Daniel P. Dieterich free bed and the Louisa Dieterich free bed. A bequest of \$10,000 is also made for the use of the hospital. After other bequests the balance of the estate, valued at \$54,000, is left in trust for the benefit of the hospital.

Society Officers Elected.—At the annual meeting of the Northern Branch of the Philadelphia County Medical Society the following officers were elected: President, Dr. Howard D. Geisler; vice-president, Dr. Samuel H. Brown; recording secretary, Dr. R. E. Shroun; treasurer, Dr. John W. Millick; corresponding secretary, Dr. Thomas R. Currie; censor, Dr. Thomas Shriner, and librarian, Dr. Robert J. Hess.

Personal.—Dr. George W. Pfromm has resigned as a member of the assistant medical staff of the Medico-Chirurgical College Hospital.—Dr. Llewellys F. Barker, professor of medicine, Johns Hopkins University, addressed the James

Tyson Medical Society of the University of Pennsylvania on "Personal Observations of the Bubonic Plague in China and the Philippines," February 28.—Mr. G. C. Signor of Tioga County has been appointed superintendent of the Medico-Chirurgical Hospital to take the place of J. E. Ellis. Mr. Signor assumed his duties of director of the institution March 1.

Wistar Institute Honored.—The authorities of the University of Pennsylvania have been notified that the Wistar Institute of Anatomy has been chosen as the central institute for interacademic brain research in the United States. The Imperial Academy of Sciences at Vienna voted the Wistar Institute the best for brain research in this country at a recent meeting and this announcement has just been made. Recently Dr. Henry Donaldson of Chicago, Dr. T. P. Mall of Johns Hopkins Medical School, and Dr. Minot of the Harvard Medical School were elected members of the central commission for interacademic brain research. The work of the brain research at the institute will be under the direction of Dr. Donaldson.

Health Report.—The total number of deaths reported for the week reached 670. This is an increase of 53 over the number reported last week and an increase of 117 over the number reported in the corresponding week of last year. The principal causes of death were: typhoid fever, 43; measles, 16; whooping cough, 10; diphtheria, 9; consumption, 60; cancer, 28; apoplexy, 25; heart disease, 61; acute respiratory disease, 121; enteritis, 27; Bright's disease, 44; appendicitis, 7; suicide, 9; accidents, 33, and marasmus, 6. There were 469 cases of contagious disease reported, with 54 deaths, as compared with 483 cases and 58 deaths for the preceding week. Typhoid fever is still on the increase; 352 cases were reported, with 43 deaths, as compared with 340 cases and 39 deaths in the week previous. There are under treatment at the present in the city about 2,500 persons suffering with typhoid infection.

Widener Memorial for Crippled Children Opened.—The Widener Training School for Crippled Children, with its thirty-five acres of ground attached, was thrown open to the public for inspection, March 3. This is supposed to be the finest institution of its kind in the world. The home has been created by Peter A. B. Widener as a memorial to his wife, Josephine Widener. It is intended to be a surgical aid to train crippled boys and girls so that they may be able to care for themselves and earn a living. The buildings are of brick and stone, in the colonial style of architecture. The group of buildings is an irregular square of about 400 feet. The main building is 265 feet long, with a depth of 90 feet. In the building are the surgical wards, the kitchen and all the appendages of the culinary department. In one end of the basement is a gymnasium, with dressing rooms and bath rooms. On the second floor are the surgical wards, and on the third floor the operating rooms and laboratory, with rooms for etherization and for use of the surgeons. Lifts and inclined planes will render the transfer of patients from one floor to another easy and painless. The educational buildings will be fitted with machinery and apparatus so that mental and manual training will be carried on together.

Physicians and the Lay Press.—At the meeting of the County Medical Society, February 28, resolutions were ordered to be referred to the directors for further action providing that the society declares that the appearance of articles in the daily press specifically describing the diseases of certain patients and the treatment thereof, together with names of attending physicians, etc., is a violation of Article 1, Section 7, Chapter 2, of the Principles of Ethics of the American Medical Association; that the onus of proof of non-responsibility for such publication shall be on those whose names appear in such articles; that if the person so charged fails to convince the censors of non-responsibility they shall cause to appear in two successive issues of the *Weekly Roster* a statement of the facts and a notice that unless the offender shall sign a written agreement to abstain from further similar offense all members of the society shall decline consultation with such offender; and that in case of a second offense the offender shall be liable to expulsion; that the assistant secretary shall keep a scrap-book containing copies of all articles appearing in the daily press relating to regular physicians of Philadelphia, and that this book shall be kept on the secretary's desk for the inspection of members, and that the titles of all articles shall be read at each meeting; that the directors of the society be requested to prepare amendments of the by-laws to accord with these resolutions, and that these resolutions shall appear in every issue of the *Weekly Roster* until and including that for the business meeting of the society in April.

VIRGINIA.

Dr. Chiles Acquitted.—Dr. Luther R. Chiles, Norfolk, indicted for having performed a criminal operation on Miss Atkinson, whose death followed, was acquitted February 19.

Oppose Tax.—The physicians of the state are making another effort to obtain release from the state and local taxes imposed on practitioners of medicine. A committee of which Dr. George Ben Johnston, Richmond, is chairman, is preparing a bill to obtain release from this tax, which will be introduced at this session of the legislature.

Epileptic Hospital Bill Passes.—The senate has passed a bill creating a state epileptic hospital on the site given for that purpose by the late S. R. Murkland on the Amherst Palisades, opposite Lynchburg. The colony will be a branch of the Western State Hospital, Staunton, and the state will provide for its maintenance by increasing the appropriation for that institution.

Personal.—Dr. Walter A. Plecker, Hampton, has been elected health officer of Elizabeth City County to succeed Dr. John W. Brown, resigned.—Physicians of Lynchburg presented Dr. Abram I. Clark of that city with a silver loving-cup as a token of esteem, from the Academy of Medicine on January 20, the eighty-ninth birthday anniversary of Dr. Clark.—Dr. Charles R. Grandy, Norfolk, has been appointed a member of the State Board of Health, vice Dr. Vernon G. Culpepper, Portsmouth, deceased.—Dr. Chortsey Hopkins, assistant physician at the Western State Hospital, Staunton, has resigned.—Dr. William F. Drewry, who some time ago was elected superintendent of the Western State Hospital, has decided not to accept the position, but to remain where he has been for a number of years, superintendent of Central State Hospital.—Dr. George S. Walker, who has been assistant superintendent of the Western State Hospital for the past twenty years, has resigned.—Dr. J. S. De Jarnette was elected superintendent to succeed the late Dr. Benjamin Blackford.—Governor Swanson has appointed Dr. Frank S. Hope, Portsmouth, quarantine officer for the district of Elizabeth River to succeed Dr. Julian Norfleet.

GENERAL.

Change Date of Western Surgical.—The Western Surgical and Gynecological Association will meet in Salt Lake City, Aug. 31 and Sept. 1, 1906. The change from the usual Christmas time for the meeting is in accordance with a general vote just taken. Dr. A. T. Mann, Pillsbury building, Minneapolis, is secretary-treasurer.

Monument to Mikulicz.—An international committee has been formed to solicit and receive contributions for a monument in honor of the late distinguished surgeon, Johannes von Mikulicz-Radecki, of Breslau, Germany. Those who wish to express in this way their esteem and affection for Professor von Mikulicz, their appreciation of Germany's splendid achievements in surgery and their desire to strengthen the cordial relations existing between the men of science of the two countries, may send contributions to any of the following: Drs. W. W. Keen, 1729 Chestnut Street, Philadelphia; W. S. Halsted, 1201 Eutaw Place, Baltimore; J. B. Murphy, 100 State Street, Chicago; F. Kammerer, 51 East Sixty-sixth Street, New York.

International Medical Congress.—The arrangements of the American national committee have now been fully made. Those who have planned to present papers at the congress should at once send short abstracts of their papers to the secretary-general, Dr. Miguel Bombarda, Madrid, Spain. The official delegates from this country have been appointed by the secretary of state as follows: Drs. L. S. McMurtry, Louisville; John H. Musser, Philadelphia; Frank Billings, Chicago; W. W. Keen, Philadelphia; Nicholas Senn, Chicago; F. A. Shattuck, Boston; R. Matas, New Orleans; Albert Vander Veer, Albany; Walter Chase, Boston; E. DeWitt Connell, Portland, Ore.; and Ramon Guiteras, New York City. At the congress an orator will represent each country by delivering an oration before the assembled sections of the meeting. Dr. Nicholas Senn will represent the United States and will deliver an oration on "The International Study of Carcinoma." Further information respecting the congress may be found in THE JOURNAL, Feb. 17, 1906, page 521, and Jan. 20, 1906, page 207.

CANADA.

Health of Toronto.—Toronto was a healthy city in February. The number of cases of diphtheria in February was 59, as against 96 in January and 111 in February, 1905. There were 9 cases of scarlet fever and 15 of typhoid fever.

Compulsory Vaccination in Toronto.—The board of education of the city of Toronto passed a resolution doing away with the compulsory vaccination of school children. Dr. Ogden, one of the oldest members of the board, refrained from voting, favoring sending the question to the health officer for his opinion.

Society Elects Officers.—The annual meeting of the council of the College of Physicians and Surgeons, New Brunswick, was held at Fredericton, February 9, when the following officers were elected for the ensuing year: President, Dr. J. P. McEnerney; treasurer, Dr. Thomas Walker St. John; registrar, Dr. Stewart Skinner.

Ontario Health Report for January.—During January the total number of deaths from all causes was 2,477. There were 141 cases of smallpox, with no deaths, and 168 cases of typhoid fever, with 51 deaths. Fort William, at the head of Lake Superior, had 106 of these cases, with 13 deaths. There were 165 deaths from consumption.

Ontario Nurses to Organize.—The nurses of Ontario have before the legislature a bill by which they seek incorporation as the "Graduate Nurses' Association of Ontario." The government is to be vested in a council of fifteen, four of whom are medical men. Power also is asked to prescribe courses of study, to conduct examinations and to issue diplomas.

Personal.—Dr. J. W. Stirling, Montreal, has been appointed to the chair of ophthalmology at McGill University, to succeed the late Dr. Frank Buller. Dr. Stirling was born at Halifax in 1859 and received his degree from the University of Edinburgh in 1884.—Dr. A. B. Macallum, professor of physiology in the University of Toronto, has been appointed a fellow of the Royal Society of England.—At the annual convocation at Queen's University, Kingston, on April 12, the degree of doctor of laws will be conferred on Dr. C. K. Clarke, superintendent of the Toronto Provincial Hospital for the Insane.

Hospital News.—The Charles Alexander Memorial Fund in aid of the Montreal General Hospital now amounts to \$200,112. Fifty thousand dollars are needed to complete the memorial. Dr. G. H. Mathewson has been appointed oculist to the hospital to succeed Dr. J. W. Stirling.—The Alexandra Contagious Diseases Hospital, Montreal, is now rapidly nearing completion. The institution will be managed by a medical board, composed of three members, one from the General Hospital, one from the Royal Victoria Hospital and one from the Western Hospital. Dr. J. C. Fyche, a graduate of McGill, will be superintendent, and he is now in training under Dr. McCallum, of the Boston City Hospital.—Dr. R. W. Bruce Smith, inspector of public institutions in Ontario, recommends that an asylum be located in Ontario north of Lake Superior. He also recommends special treatment for chronic inebriates. During 1905 there were 11,000 convictions in Ontario, with a population of 2,000,000.—According to the thirty-eighth annual report on the lunatic and idiot asylums of Ontario there were 6,213 patients certified insane on Sept. 30, 1905, an increase of 632 for the year, during which 1,130 patients were admitted.

FOREIGN.

Unveiling of Bust of Liebau.—A bust of A. A. Liebau, the founder of the "Nancy school," has been installed in the School of Psychology at Paris and was unveiled with much ceremony, February 1. Prominent psychologists were present from various countries and numerous telegrams were received from others unable to be present. Eighty persons partook of the banquet. Liebau was born in 1823 and died in 1904. His efforts to introduce scientific hypnotism into therapeutics dated from early in the sixties.

War on Consumption in the Home.—The management of the Brompton Hospital for Consumption—London's great hospital for the treatment of this disease—is about to initiate an important departure in its treatment of tuberculosis. A joint subcommittee has been appointed, under the advice of the medical staff, to consider the feasibility of reaching the source of infection in the homes of the patients. Dr. Newsholme, the medical officer of health for Brighton, will co-operate and it is hoped that every member of a consumptive's family may be brought under the direct care of the hospital staff.

Prizes for Designs for Village Baths.—The German Public Bath Society has offered prizes of \$150 and \$100 for the best design for public baths for small towns and villages. The competition is designed to arouse interest in the subject of public baths in small places, bathing in rivers and ponds not being considered enough for the hygiene of the inhabitants all the year around. The jury to pass judgment on the designs consists of prominent physicians, architects and others. The designs must be sent in at once to the office of the society, Berlin NW. 6, Karlstrasse 19, addressed to the *Deutsche Gesellschaft f. Volksbäder*.

Pure Food Regulations in Madrid.—The *Siglo Medico* gives the details of decrees recently promulgated by the alcaide of Madrid which are in accordance with the most advanced ideas in regard to the necessity for arresting the adulteration of food and other antihygienic evils. One clause enforces the screening of food away from flies, another forbids the use of impure water in cooking and washing dishes. A fine of from 5 to 50 pesetas (\$2.50 to \$25) is to be imposed for infraction of the rules. Our exchange comments that the decrees would be worthy of the highest encomiums if only they were meant to be enforced. Experience has shown that they will never get beyond the pages of the official records on which they make such a fine showing.

Increase in Liverpool of Drunkenness Among Women.—The statistics of the chief constable of Liverpool show that of 7,700 charges of drunkenness more than one-third were against women. At the recent annual meeting of the Liverpool Society for the Prevention of Cruelty to Children it was stated that the society last year dealt with 10,288 children, and that the chief cause of the misery, cruelty and neglect was drunkenness, especially on the part of the mothers, and that while drunkenness among men is actually decreasing, among women it is greatly on the increase. The Liverpool licensing bench has resolved that the police should be instructed to report houses where female drinking is excessive, so that the bench may deal with them under the compensation clause of the licensing act.

Silver Jubilee of Berlin Internal Medicine Society.—On February 19 the *Berlin Verein für innere Medizin* celebrated the twenty-fifth anniversary of its foundation. It was organized in 1881 mainly by the efforts of Ernest von Leydon, and is now one of the largest associations of the kind in Germany. Its transactions contain many notable communications, and its success in conducting collective inquiries on various scientific themes attracted wide attention, especially its great collective inquiry on influenza. The festival address was delivered by A. Fraenkel on "Modes of Dissemination of Pulmonary Tuberculosis from the Clinical Standpoint." A number of honorary and corresponding members were elected, among the former Quincke of Kiel, von Schrötter of Vienna, Maragliano of Genoa, Pel of Amsterdam and Kernig of St. Petersburg. The jubilee banquet was held a day or two later.

No Benefits from Compulsory Disinfection at Paris.—The *Semaine Méd.* for February 14 cites statistics showing the number of cases of various communicable diseases in Paris during the last decade. Notwithstanding the regulations for compulsory disinfection, the number of cases of diphtheria and of scarlet fever was as large in 1904 as in 1895 (respectively 4,327 and 3,279 in 1895 and 4,653 and 3,592 in 1903). The number of cases of smallpox increased from 542 in 1895 to 822 in 1904, and of typhoid fever from 1,389 to 2,635. The editorial states that statistics from other cities show a similar lack of any decline in the number of cases of communicable diseases since the enforcement of compulsory disinfection. The number of cases keeps about on the same level or is higher than before these measures were introduced. The editorial regards this as an argument against extending compulsory disinfection to tuberculosis as some are advocating.

Annual Meeting of the Medical Society of Victoria, Australia.—The annual meeting of this society was held in January. In his presidential address, Dr. A. Jeffreys Wood, Melbourne, reviewed at length the history of the society from the time it was organized to the present. He referred to the two methods whereby the medical profession of Australia might be effectively organized: The first suggestion is that a new association be created on the lines of the American Medical Association and called the Australasian Medical Association; the other is that all the medical societies throughout the commonwealth should become branches of the British Medical Association. Dr. Wood said that the necessity for organization in the profession is daily becoming more apparent. "The days are past when a medical man can stand aside from medical politics and pursue the even tenor of his way without detriment to himself or to his colleagues." He concluded his address by urging the benefits to be derived from affiliation with the British Medical Association.

Prize for Professor Bier.—The medical faculty of Heidelberg has awarded the Kussmaul prize to the professor of surgery at Bonn, August Bier, for his studies on artificially induced congestive hyperemia as a therapeutic measure. Bier is only 45 years old, but he has been preaching for years the advantages of measures to induce active or passive hyperemia in the treatment of various affections. His views were received with in-

difference at first, but have gradually gained more and more adherents until now they have become firmly established in current surgical and medical practice. Some go so far as to call this work the greatest achievement in surgery since the introduction of antiseptics. His latest application of the method of congestive hyperemia by interrupted circulation as a means of treating acute inflammations was regarded with amazement at first, but more and more testimony is constantly accumulating in its favor. All agree in the remarkable subsidence of the pain after the circulation has been interrupted by the tourniquet above the lesion. The Kussmaul prize was endowed no long ago by Czerny as a memorial to his father-in-law, Prof. Adolph Kussmaul. This is the first time it has been awarded. Bier's method of passive congestion is discussed editorially on page 726.

Organization of the Profession in Austria.—The physicians in lower Austria who have charge of the free vaccinations have protested for years against the remuneration allowed them by the state for this and similar official medical work. The veterinary surgeons receive 20 cents for each animal vaccinated against hog cholera, but the rate for vaccinating a human being is only 20 hellers, about equal to 5 cents. The fees allowed for other medical duties are proportionately small, and the physicians are now banding together to demand juster remuneration from the authorities. They say that they are "paid less for a careful medical examination of a lousy tramp than the barber gets for cutting the vagrant's hair." The spirit of organization is spreading and the medical societies are standing by their colleagues in the opening strife. The physicians are opposing what they call "passive resistance" to the authorities, reporting every case in which there is a suspicion of infectious disease as "suspicious of scarlet fever," or "of diphtheria" or "smallpox." More than 10,000 cases had thus been reported as "suspicious" during the first week, overwhelming the district health officers whose duty it is to examine each suspicious case. Hitherto they have been notified only when the practitioner was measurably sure of a definite diagnosis.

Recent Decisions of the German Medical Court of Honor.—The three latest decisions deal with questions affecting the organized action of the members of the profession in respect to contract practice. One physician was fined by the local court of honor because he had accepted a position with the local sickness insurance society at a 3-mark rate when all the medical officers of the society (*Krankenkasse*) had resigned in a body because the society had refused to increase their remuneration to a 3.5-mark rate. Appeal to the supreme court of honor resulted in the acquittal of the physician, as it was held that his acceptance of a position with the society after the medical officers had all resigned did not bring him within the jurisdiction of the court of honor, especially as the rate accepted was not ignominiously low. In another case a physician accepted a position with the sickness insurance society when the members of the local medical chamber had voted that none of its members should accept such a position until the company agreed to certain conditions. The physician was condemned for this conduct by the court of honor, but as the local medical chamber was very loosely organized and as he had not been informed in regard to the result of its deliberations he was dismissed with merely censure. In another case eleven physicians voted in the minority in their local medical chamber (*Arztelkammer*) against certain conditions to be demanded of the insurance company ("free choice by the patient of his physician"). Being outvoted, they withdrew from the medical chamber and accepted the company's terms. The court of honor dismissed the suit against them.

LONDON LETTER.

The Problem of Milk Supply.

Dr. A. C. Houston has presented an important report on his bacteriologic examination of milk to the London County Council. It has been computed that in the United Kingdom in 1901 there were 4,102,000 milch cows and that the total yield of milk per annum was 1,722,840,000 gallons. It has been suggested that 20 per cent. of the milch cows are tuberculous and that 2 per cent. suffer from tuberculosis of the udder. Under existing conditions the opportunities of milk becoming contaminated both during and after milking are numerous. The cow may be coated with filth, the milk may be dirty, the milk utensils may be unclean and the air of the byre may be loaded with excrementally polluted dust. There are fresh opportunities for the ingress of filth during the transit of the milk and on the premises of the dairy shops and milk purveyors. Dr. Houston observes that bacteriologic testings can do little more than show whether such remedial measures as may from time to time be suggested or demanded have been taken. The actual

disease-producing power of milk can not be measured by the bacteriologist. He can hardly even say, unless bacteria are almost absent, that a particular sample of milk is devoid of power to cause disease. He can measure the amount of filth in milk, however, and determine its biologic qualities. Bacteriologic tests and standards are not, strictly speaking, preventive measures, but as they may be the means of forcing milk dealers to carry out suggested reforms they are indirectly remedial measures. Dr. Houston suggests the enforcement of the following conditions: Cows should be kept clean and housed in well-ventilated, clean byres. The milk should be cleanly in his person and in his methods of procedure. The first milk should be rejected. All milk utensils should be kept scrupulously clean. The milk should be strained through a clean strainer. The conditions under which milk churns are conveyed from place to place and milk is carried to the consumers' premises should be greatly improved. Dairy and milk purveyors' shops should be kept clean. All persons engaged in handling milk should pay special regard to the importance of personal cleanliness. Far greater precautions than exist should be taken to exclude dust, flies, etc. The water used for washing dairy utensils should be potable water. On the question of personal cleanliness Dr. Houston says that no person who has contracted typhoid fever is fit to handle milk, even if long convalescent, in the absence of medical supervision. The danger of typhoid bacilli must not be forgotten. Recently an epidemic of scarlet fever was traced to a man in the late stages of an attack of that disease who was employed to milk cows.

The Prevention of Consumption.

Sir William Broadbent has addressed an important memorial to the Metropolitan Asylums Board on the prevention of consumption. He points out that the International Congress on Tuberculosis held in Paris brought into prominence the importance of the prevention of consumption from a social point of view. He urges the board (which now controls all the fever hospitals of the metropolis), to constitute itself the tuberculosis authority. The first step would then be to ascertain the number and distribution of the cases of consumption in the metropolis, and the stage of the disease, with the circumstances and surroundings of the sufferer. This would be effected by a system of notification. The notification would be followed in the case of the poor by the visit first, it is hoped, of some member of a woman's association, such as in Manchester has been found to remove all objections on the part of the families; next, of a sanitary inspector, who would carry out the necessary disinfection. Thus advanced cases, from which the dissemination of the disease mostly takes place, would be identified and surrounded by protective and preventive measures. The destruction of the sputum would be secured, the importance of open bedroom windows would be inculcated and the removal of dust by damp cloths instead of dusting and sweeping would be taught. In a large proportion of the cases these measures would be sufficient to diminish the dangers of dissemination so that the patient might be treated at home. He would be surrounded with more comfort and would have a better chance of recovery. The periodical visits of women visitors and inspectors would insure the carrying out of the precautions. In advanced cases the patients should be removed to some home, thus removing a source of disease and diminishing the privations of the family, conducive to disease. No expenditures on buildings would be required if some of the hospitals provided for smallpox or other fevers, now unoccupied, are made available. In an important paper read before the Paris congress, Dr. Newsholme, health officer of Brighton, showed that the greater diminution in the death rate from consumption in this country as compared with Ireland and France, and with Germany before the establishment of numerous sanatoria in that country, has been due not merely to improved social conditions, but largely to the reception of advanced cases into the infirmaries and their removal as centers of infection.

Cremation in Great Britain.

In the past year there has been no marked progress in the use of cremation as a means of disposing of the dead. The total number of cremations was 600, as against 566 in 1904 and 475 in 1903. In the erection of crematories, however, distinct progress has been made; in 1904 there were only nine, while in 1905 there were twelve. The total number of cremations performed in Great Britain since the first crematorium was established at Woking in 1885 is 5,018. During 1905 crematories have been opened at Leeds and Bradford. A third is in process of construction at Sheffield. Thus though the progress of cremation is slow in regard to numbers, the area of operation is gradually extending.

Pharmacology

A Phosphorized Cerebro-Spinant.

FALL RIVER, MASS., Feb. 22, 1906.

To the Editor:—Among the proprietary medicines offered to physicians is one called Freigh's Tonic and bearing the striking sub-title of "A Phosphorized Cerebro-Spinant," the formula of which is: Cinchona, nux, ignatia, matricaria, free phosphorus, C. P. No quantities whatever are given, but its indications are "paralysis, vertigo, epilepsy, Bright's disease (early stages), neurasthenia, debility, debilitating losses, mental failure, spinal weakness, nervous dyspepsia, all troubles affecting the brain, nerve centers and spinal cord, and as a safe and powerful aphrodisiac."

The literature which accompanies it is very striking, and if the firm who get it up are no more familiar with the action of drugs than they are with the meaning of the words which they use to describe its action, I think the profession at large had better make their own combinations of these remedies rather than trust to one which is offered to them at the price of \$1 per ounce. After describing how the remedy is combined in such a way that a dose of from 5 to 10 drops in half a glass of water is all that is needed to produce the desired effect and secure beneficial results at once, the descriptive circular says:

"Those familiar with the action of drugs know the homogeneous relations they bear to each other, how their pathogenetic and curative spheres are enlarged and dynamized by a judicious combination, extending their spheres of usefulness, and governing numerous indications. For such, but a short acquaintance with the Tonic is necessary to convince them that its remedial power and scope far exceed those of any or all the remedies it contains, when used singly."

"A very causal reference to the pathogenetic and curative action of the Tonic will show how completely all of these symptoms and diseases come within the preventive and its curative sphere, together with that voluminous class connected with indigestion and a want of proper assimilation."

It strikes me that the words "pathogenetic" and "curative" hardly go together in the same sentence, descriptive of the same remedy, unless one is considering both the poisonous and the therapeutic action of a drug, and then the dose would necessarily be different. I personally have no use for any tonic which is pathogenetic, and I hope no member of the profession has.

Further on in the same circular, under the heading of "Dyspepsia," it states that "the formula of the tonic shows how the pathogenetic and curative action of its several constituents meets the exigencies of any phase of indigestion." I take it that the pathogenetic action of the tonic is so great that the disease which it produces causes its owner so much trouble that he forgets entirely the dyspepsia, and so in this way the dyspepsia is cured. It seems to be possible with this remedy to cure all cases of indigestion, functional disorders of the brain, threatened softening, progressive locomotor ataxia and general paralysis, but it is still more brilliant in those cases developed by the advancement of age. For these conditions it comes nearer being the fountain of youth for which Ponce de Leon sought two or three centuries ago than anything which has yet been brought to the attention of the human mind.

The circular closes with the statement:

"The wide range of the curative sphere of this article is truly remarkable. For while it is not a catholon, nor is it pretended to be, it covers more symptoms and is curative to more diseases of an alarming character than any other one remedy or combination of remedies, within the limits of our materia medica, or books of medicinal formulae."

It is stated at the beginning of the circular that this is sent solely to the profession, so it must be assumed that the profession is using this remarkable medicine. With two or three such medicines in his grip, a physician should be entirely independent of the Pharmacopoeia, the National Formulary and all the old standbys.

GEORGE L. RICHARDS.

A Letter, a Reply, and Comments.

[THE LETTER.]

JOSEPH McDONALD, JR., M.D.

EAST ORANGE, N. J., Feb. 16, 1906.

Dr. J. A. Pettit, Portland, Ore.

Dear Dr. Pettit:—I have read your article in the last issue [Feb. 17] of THE JOURNAL A. M. A. on "The Evils of Proprietary Medicine," and I can not refrain from expressing to you my sentiments.

This tirade against nostrums and proprietaries is, in my estimation, insulting to the medical profession. The doctors of America are as a body an intelligent class and quite able to decide which and which is not a suitable remedy to be administered to their patients. It must be left to the individual opinion of the physician prescribing whether the product is or is not a nostrum, for this reason that what might appeal to one as a legitimate proprietary article, to another would seem a rank nostrum.

Now eliminating every proprietary or so-called proprietary remedy from our list of useful remedies, would mean that we must give up those remedies manufactured by legitimate houses, these same products conforming to the prescribed rules in the Pharmacopoeia, the same should be compounded by the druggists. You must not forget, doctor, that the large manufacturing chemists make it an aim to purchase the best crude drugs that the market produces, while the druggist is supplied by his wholesaler to whom he is many times subsidized. As a consequence cheap and inert drugs are furnished and compounded. Inasmuch as you have committed yourself on the proprietary question, I would suggest that you take a broader view of the situation. From your article I should say that you read only THE JOURNAL of the A. M. A., as you refer in your comments to the advertisement of Kutnow's powder and their method of introducing their goods in Europe as well as to rehash attacks made on other manufacturers.

If you had been well posted on this situation you would have known (I refer now to Kutnow) that other manufacturing chemists are doing identically the same thing, and these chemists are considered ethical from the standpoint of THE JOURNAL of the A. M. A.

I would call your especial attention in this respect to Angier's Petroleum Emulsion, which advertises most extensively to the public in Europe and I believe carried an advertisement in the same publication from which the advertisement of Kutnow's Powder was reproduced.

I take the liberty of enclosing herewith a few pages of a little magazine [1] that occasionally comes to my office, showing that Angier's Emulsion, which carries an advertisement in THE JOURNAL A. M. A., and is considered ethical, nevertheless advertises to the laity in Europe.

My letter to you, doctor, is not in defense of Kutnow's Powder or any other article or product. It is merely a suggestion that you view the situation from a non-biased standpoint and also consider that the profession of America as a body are intelligent men, and you are more liable than otherwise to offend the doctor by preaching to him of his presumed incompetency than you are to convert him to your way of thinking.

J. McDONALD, JR.

[THE REPLY.]

PORTLAND, ORE., Feb. 28, 1906.

Dr. Joseph McDonald, Jr., East Orange, N. J.

Dear Sir:—I am in receipt of your letter of the 16th inst. in criticism of my article in THE JOURNAL A. M. A. of February 10, terming it a tirade, etc., against nostrums and proprietary preparations (which you seem to uphold as benefactors of a medical profession) and an insult to the medical profession.

In reply, I would beg to directly contradict your nomenclature. That which you term a "tirade" is simply a plain statement of plain facts, and that which you term an insult to the medical profession is regarded by all the medical profession who have talked with me or written me, in the words of the countryman, "them's my sentiments." To understand the motives which actuate your adverse criticism, I would have first to know that of which I am now ignorant, viz.,

your possible professional and commercial alliances and interests [2]. If you have any heart or money interests in products sold to our profession, a discussion of the merits of this matter would be futile, because by reason of those circumstances you would not be open to conviction. I certainly should not try to convert to a gold standard an advocate of silver currency who is possibly interested in silver mines.

I have read the magazine from which you enclose clippings. If there is a biased and one-sided magazine in this country, you can find it under that title. You accuse me of confining my reading to THE JOURNAL A. M. A.; and I believe I may justly accuse you of confining your reading matter to the small sheets of this narrow-minded paper you enclose to me; and I think that all will agree that my choice of reading matter is a far better selection than yours. The journals which come to my desk are carefully selected for their scientific character and not for their commercial prominence.

You conclude by saying you are not defending Kutnow's Powder or any other article, but the general construction of your letter influences me to state in reply that I can not help feeling you are defending "something." I will not try to convert you, doctor, because I am afraid I can't.

J. A. PETTIT.

[THE COMMENTS.]

[1. The "little magazine" referred to is the *American Medical Journalist*, November, 1905, issue. This publication is owned or managed by Mr. D. A. O'Gorman. Mr. D. A. O'Gorman owns or manages the O'Gorman Agency. The O'Gorman Agency handles the advertising accounts of the Lawrence (*Medical Brief*) interests. At least a good part of the following preparations are numbered among them: Echthol, Bromidia, Neurilla, Sanmetto, Cactina, Seng, Chionia, Peacock's Bromides, Celerina, Iodia, Papine, Pil Hemorrhoidica, etc. The "little magazine" seems to be the official organ of those interests that are not in accord with the present movement against nostrums by the American Medical Association. The advertisement of Angier's Emulsion was refused further space in THE JOURNAL for reasons that it is not necessary to give in this connection, and ceased to appear after Nov. 4, 1905, issue. It is interesting to note that while the *American Medical Journalist* for November, 1905, directed attention to the fact that this preparation was being advertised to the laity abroad, this particular issue was not published until February, 1906—three months after the advertisement ceased to appear in the advertising pages of THE JOURNAL.—Ed.]

[2. Joseph Macdonald, Jr., M.D., graduated from the Baltimore University School of Medicine in 1904. To the best of our knowledge he has never practiced medicine. Previous to April, 1905, he was manager of the *International Journal of Surgery*. Since that date he has purchased the *American Journal of Surgery* (formerly the *American Journal of Surgery and Gynecology*, owned and edited by Dr. Emory Lanphear), of which he is at present the managing editor and owner or part owner. A casual glance through the advertising pages of the *American Journal of Surgery* will readily indicate where Dr. Macdonald's vested interests lie.—Ed.]

Formula of Ayer's Cherry Pectoral.

LOWELL, MASS., Feb. 19, 1906.

To the Editor:—On page 446 of THE JOURNAL, February 10, is a note from Dr. Frank L. Smith, of Stafford Springs, Conn., which is likely to call discredit on this house, and yet which we are confident Dr. Smith would never have written had he been acquainted with the facts in the case.

For about sixty years Ayer's Cherry Pectoral was made according to the original formula of Dr. J. C. Ayer, which is here correctly given by Dr. Smith. But about one year ago we decided to publish the formulae of our medicines, hence we took advantage of this fact to change these formulae. The formula we adopted for Ayer's Cherry Pectoral was that recently given in THE JOURNAL. The old preparation was called Ayer's Cherry Pectoral. The new preparation is known as Ayer's Cherry Pectoral (Revised Formula). The formula of the old preparation was never printed on the label. Every bottle of Ayer's

Cherry Pectoral that has left this establishment for nearly a year has had the new formula printed as a part of the label.

Therefore it is true that there are two kinds of Ayer's Cherry Pectoral on the market: the old kind formula, of which Dr. Smith gives on page 446, and the new kind, containing the terpin hydrate and heroin, as recently given in *THE JOURNAL*. We presume it will be many years before all of the old Cherry Pectoral will be entirely off the market.

CHARLES H. STOWELL, M.D.,
Treasurer and General Manager, J. C. Ayer Company.

Proposed Canadian Legislation on Patent Medicines Indorsed.

The Vancouver Medical Association met February 13 and indorsed the bill now before the legislature of British Columbia for the regulation of the sale of patent medicines. The society will also ask the medical council to notify the physicians of the province regarding proprietary medicines said to be equally fraudulent. The department on island revenue at Ottawa has issued a bulletin regarding the analysis of certain patent medicines at present on the Canadian market.

Medical Legislation

The Opportunity for the Pure Food Bill.

The Pure Food Bill is now in the House of Representatives, having passed the Senate. It, therefore, stands a good chance of becoming a law, provided sufficient interest is taken by the public and by the profession to offset that brought to bear by the organizations that are opposing the measure, for all that these organizations can now do is simply to influence congressmen through public opinion. Their arguments are worn threadbare; money will not count. Consequently, their only method will be to influence congressmen through individuals, such as the druggists, who are appealed to by the "patent-medicine" men in the following letter. There is a clause in the bill, as passed by the Senate, to regulate "patent medicines," but it practically amounts to a joke. We understand, however, that the joke has been taken in dead earnest by the committee to which the bill was referred in the house, and will be modified so as to be effective for some good in preventing fraud in proprietary medicines. This is what is referred to in the following letter, written by the chairman of the committee on legislation of the Proprietary Association of America and cautiously sent where it is expected to do good. This letter shows that the "patent-medicine" men realize what is going on and are acting accordingly. We do hope that every reader of *THE JOURNAL* will do his best and take the hint from the Proprietary Association and write to his congressman to support the Heyburn bill. While there is no particular hurry about doing this now, it is well to bear the matter in mind and act as soon as the committee reports the measure.

THE PROPRIETARY ASSOCIATION OF AMERICA. COMMITTEE ON LEGISLATION.

CHICAGO, March 1, 1906.

Gentlemen:—The situation at Washington has taken a decided turn and Mr. Douglass, who is there, wires that the situation is serious, and that there is a possibility that a provision for the publication of the formula on proprietary medicines for interstate commerce will be added to the Pure Food Bill by the House committee.

Mr. Douglass wires also that the *Ladies' Home Journal* Bill may be introduced in the House, for the District of Columbia, and that it is indorsed by the district officials on recommendation of the health officer.

Every influence you can bring to bear on your congressman should be brought at once. There should be no let up to your endeavor until the Pure Food and the District of Columbia bills are disposed of satisfactorily. You will readily realize the importance of prompt action.

Take these matters up with your congressman by wire, and have every druggist possible wire his congressman to oppose the passage of formula legislation, either for the District of Columbia, or as an amendment to the Pure Food Bill.

We will endeavor to keep you posted regarding developments and suggest that you keep in touch, from your end, with this office. It is important that telegrams be sent to members of congress by druggists and others interested. Yours very truly,

JOHN W. KENNEY, Chairman.

Address—Room 1107, No. 184 La Salle Street.

The Vote on the Pure Food and Drug Bill.

The American Medical Association has been active in its support of the Heyburn pure food and drug bill which passed the United States Senate February 21. The agitation in behalf of this measure has had no more influential support than that which was derived from the petitions sent from practically every county in the United States, signed very generally by the medical profession of each county, urgently requesting senators and members of the House of Representatives to support the measure.

Now that it has passed the senate by a splendid vote of 63 to 4, it devolves on every medical man in the United States—particularly on every one who has signed a petition or sent a letter to Congress in this behalf—to write each senator who voted for the measure and thank him for his attitude on this question.

It is only by expressed appreciation of favors asked for that other favors may be secured in the future. The vote was as follows:

YEAS—63.

| | | | |
|----------------|--------------|--------------|-------------|
| Alger. | Depew. | Heyburn. | Overman. |
| Allee. | Dick. | Kittredge. | Patterson. |
| Ankeny. | Dillingham. | Knox. | Penrose. |
| Beveridge. | Dolliver. | La Follette. | Perkins. |
| Blackburn. | Dryden. | Lodge. | Piles. |
| Brandegee. | Dubois. | Long. | Platt. |
| Bulkeley. | Flint. | McCreary. | Rayner. |
| Burkett. | Foraker. | McChamber. | Scott. |
| Burnham. | Frye. | McEnery. | Simmons. |
| Burrows. | Fulton. | McLaurin. | Smoot. |
| Carter. | Gallinger. | Martin. | Stone. |
| Clapp. | Gamble. | Millard. | Sutherland. |
| Clark (Mont.). | Gearin. | Noyes. | Talbot. |
| Clark (Wyo.). | Hale. | Nelson. | Warren. |
| Clay. | Handsrrough. | Newlands. | Wetmore. |
| Daniel. | Hemlinway. | Nixon. | |

NAYS—4.

| | | | |
|--------|---------|---------|----------|
| Bacon. | Bailey. | Foster. | Tillman. |
|--------|---------|---------|----------|

NOT VOTING—22.

| | | | |
|---------------|------------|--------------|----------|
| Aldrich. | Crane. | Hopkins. | Proctor. |
| Allison. | Cutherson. | Keen. | Snooner. |
| Berry. | Cullom. | La Follette. | Teller. |
| Burton. | Elkins. | Malloy. | Warner. |
| Carnack. | Frazier. | Morgan. | |
| Clark (Ark.). | Gorman. | Pettus. | |

Help the Pure Food Bill to Pass.

ASHLAND, NEB., March 5, 1906.

To the Editor:—In my capacity as chairman of the committee on pure foods and pure drugs of the National Legislative Council of the American Medical Association I appeal to the members of this council, resident in the different states of the country, to lose no time in urging on the county medical societies with whom their members of the house of representatives live, to send at once to each one of them resolutions, both strong and unequivocal, demanding respectful attention to the wishes of their constituents for the passage of the Heyburn bill, with the amendments of the senate non-concurred in, or for the passage of the Heyburn bill, which is identical with the Heyburn bill in spirit before the amendments were attached to it by the senate. Urge on the representatives that this measure has become a crying need and that the people intensely feel it, especially when they ask so little in the bills, namely: "Label correctly what you put up and leave to us, the people, the choice of buying your products!"

I trust the members of my committee, as well as the members of the council from the different states, will pardon me and *THE JOURNAL* if any or all of the county societies should act at once on this appeal, even if they do not first receive their invitation to do so. Time is short and every word of warning not to go to sleep, urged by *THE JOURNAL*, is only too appropriate, in the face of the activities displayed by those who, for the sake of gain, care very little whom they injure or what they destroy. Nebraska has already commenced to apprise its congressmen of its wishes. These men are wide-awake and know

that their people are in dead earnest in this matter; in fact, they themselves feel the need of this legislation for their own families; they will need little urging, and I sincerely believe this will prove true of an overwhelming majority of the members of the house of representatives.

A. S. v. MANSFELDE.

New Jersey Ready to Work.

Dr. L. M. Halsey, Williamstown, N. J., member of the National Legislative Council for New Jersey, has completed the organization of the National Auxiliary Legislative Committee for that state. Dr. Halsey called for a meeting of the Committee on Legislation of the State of New Jersey at Trenton, March 6, to take action on the anti-nostrum bill now pending in their state legislature, based on the act published in the February number of the *Ladies' Home Journal*.

Association News

Headquarters for Section on Practice of Medicine.

We are asked to announce that the Hotel Somerset has been selected as the headquarters for the Section on Practice of Medicine for the Boston session. It is suggested that there will be a better chance for acquaintanceship if as many members of the section as find it convenient to do so will register at that hotel.

NEW MEMBERS.

List of new members of the American Medical Association for the month of February, 1906:

ALABAMA.

Alexander, J. F., Hecot.
Black, O. B., Wilsonville.
Brown, J. T., Riverside.
Burdick, F. E., Huntsville.
Burdesaw, L. R., Alabama City.
Burdshaw, L. R., Headland.
Bogges, J. W., Woodville.
Brown, J. M., Gadsden.
Blue, J. H., Montgomery.
J. Crutcher, J. S., Athens.
Devesce, T. P., Gambelmines.
Duff, W. S., Ft. Payne.
Duckett, L. F., Florence.
Faucett, G. L., Gadsden.
Hagood, M. H., Mt. Willing.
Hall, B. M., Huntsville.
Harris, E. A., Coal City.
Henry, T. H., Tusculumbia.
Hagan, W. J., Athens.
Lee, E. F., Consul.
Laney, M. W., Eden.
Moore, J. C., Anniston.
Naples, W. C., Scottsboro.
Northen, C. S., Talladega.
Palmer, C. R., Tusculumbia.
Robinson, T. R., Tusculumbia.
Semmes, R. O., Camden.
Simms, B. B., Talladega.
Stringer, W. L., Falkville.
Woodson, J. L., Coal Valley.
Warwick, B. B., Talladega.
Williamson, E. O., Gurley.
White, W. Y., Anniston.

ARIZONA.

Levensgood, H. W., Helvetia.

ARKANSAS.

Shackwell, O. G., Pine Bluff.
Blackburn, E. W., Ozark.
Blakemore, J. P., Van Buren.
Campbell, J. M., Russellville.
Ellsworth, E. H., Hot Springs.
Foster, J. H., Ft. Smith.
Houston, A. L., Clarendon.
Harris, A. E., Little Rock.
Jones, Ernest, Somerville.
John, J. W., Pine Bluff.
Judd, O. K., Little Rock.
Lucas, Giles, Van Buren.
Presley, W. L., Morrilton.
Thorne, E. F., Little Rock.
Vaughan, M., Little Rock.

CALIFORNIA.

Barton, H. P., Los Angeles.
Rotsford, Mary E., San Francisco.
Bucknall, G. J., San Francisco.
Bromley, H. L., Sonoma.
Brown, T. F., Los Angeles.
Claypole, E. J., Pasadena.
Chipman, E. D., San Francisco.
Coney, E. J., Pasadena.
Chandourne, E. R., Pasadena.
Dozier, Barton, Los Angeles.
Draper, A. L., San Francisco.
Evans, J. H., Highland.

Ellis, T. E., Elsinore.
Fasig, H. B., Los Angeles.
Fay, F. G., Sacramento.
Graham, J. W., Lompoc.
Hyman, Solomon, San Francisco.
Hlay, E. O., Los Angeles.
Jennings, G. D., Covina.
Mosely, G. G., Redlands.
Moss, J. M., San Francisco.
Mackinson, H. A., Oakland.
Poore, J. E., Sacramento.
Pritchard, F. H., Colton.
Pitcher, Josephine, Halfmoon Bay.
Peoples, S. Z., Petaluma.
Read, W. P., San Francisco.
Silverburg, Melville, San Francisco.
Taylor, A. W., Santa Barbara.
Van Slyck, D. B., Pasadena.
Wagner, John, San Francisco.
Wrenn, J. Q., Placerville.

COLORADO.

Rootay, F. S., Akron.
Gillaspie, Carbon, Nederland.
Jackson, P. F., Salida.
Loomis, P. A., Colorado Springs.
Porter, V. W., Lafayette.
Russell, J. A., Boulder.

CONNECTICUT.

Lemmar, G. R., Danbury.
Wheatley, L. F., New Haven.
Winne, W. N., New Haven.

DELAWARE.

Marshall, Wm., Jr., Wilmington.
Wentbaker, New Castle.

DISTRICT OF COLUMBIA.

Dunnigan, J. F., Washington.
Greene, S. H., Jr., Washington.
Burdling, G. T., Jr., Washington.
McLerie, E. L., Washington.

GEORGIA.

Cole, J. E., Middleton.
Strickland, J. O., Pembroke.
Traylor, G. A., Augusta.

IDAHO.

Campbell, B. F., Rexburg.
Mitchell, E. W., Blackfoot.
Story, R. T., Albion.

ILLINOIS.

Bryant, J. H., Galesburg.
Brill, J. A., Chicago.
Buchanan, W. A., Paris.
Bradley, R. H., Marshall.
Becker, H. P., Danville.
Czessghall, T. C., Henry.
Cruse, C. W., Jola.
Culbertson, S. D., Piper City.
Dowdall, W. T., Jr., Peoria.
Dwight, B. L., Chicago.
Eddy, L. H., Chicago.
Epperson, J. C., Kansas.

Friedman, J. C., Chicago.
Graney, T. L., Irvington.
Gaufer, Theophilus, Trenton.
Hefflin, H. N., Chicago.
Hallen, P. W., Chicago.
Hummell, R. O., Joliet.
Huyman, L. B., Chicago.
Kaiser, J. M., Southauk.
Kimball, Z. V., Hillsboro.
Lehman, S. W., Dixon.
Lang, H. W., Chicago.
Law, E. F., Weston.
Lyons, Jennie, Champaign.
Lowery, J. E., Homer.
Lombard, W. H., Chicago.
Milaik, H. B., Kewanee.
McClure, R. S., Hoopeweton.
McGonagle, T. C., Chicago.
Ochsner, E. H., Chicago.
Pietrzykowsky, A., Chicago.
Pearce, Edward, Marshall.
Powell, G. P., Dixon.
Renn, T. H., Chicago.
Roane, J. Q., Boulder.
Spangenberg, W. C., Chicago.
Ulrich, J. H., Peoria.
White, J. V., Auburn.
Wolman, H. C., Jacksonville.
Watersous, H. W., Galva.
Werth, S. S., Oak Park.

INDIANA.

Burlington, J. R., Attica.
Biery, T. E., Scottsburg.
Costello, H. F., Ellettsburg.
Clegg, J. H., Princeton.
Campbell, W. S., Lafayette.
Dubois, E. J., Indianapolis.
Elliott, J. M., Linden.
Hammond, G. B., English.
Howard, N. P., Greendale.
Kendle, G. C., Princeton.
Lawson, J. E., Corydon.
Leavitt, R. L., Terre Haute.
Langdon, H. K., Indianapolis.
Lowder, H. R., Bloomfield.
Modricker, J. M., Ellettsburg.
McLeay, J. D., Indianapolis.
Swartzel, J. A., Indianapolis.
Stone, Chas. B., Windom.
Stemw, W. H., North Vernon.
Thompson, E. W., Winamac.
Van Felt, R. T., South Bend.
William, G. T., Crawfordsville.

IOWA.

Bradford, D. S., Janesville.
Balliett, M. R., Waterloo.
Brown, C. T., Waverly.
Beaver, C. V., Anita.
Branson, W. S., Irwin.
Bowen, J. A., Valeria.
Cohenverth, C. B., Newhall.
Childress, M., Oskaloosa.
Casady, S. A., Centril.
Carton, A. R., Delta.
Conaway, A. F., Marshalltown.
Corrigan, W. H., Rockwell.
Davenport, F. D., Winterset.
Dietz, C. E., Carson.
Groom, W. S., Britt.
Hanske, E. A., Bellevue.
Jarvis, P. J., Delta.
Jay, E. W., Marshalltown.
Jones, L. H., Wall Lake.
Kandt, P. S., Clinton.
Lee, W. A., Bellegue.
Murphy, F. B., Mason City.
McCarthy, J. F., Dubuque.
Nichols, H. H., Marshalltown.
Nesbitt, G. M., Waterloo.
Pinkerton, J. A., Tracer.
Hidenport, J. E., Waterloo.
Schooley, A. H., Terril.
Sleeper, L. E., Ottumwa.
Scholten, E. H., Keosauqua.
Thompson, W. L., Bayard.
Wagner, G. A., Van Horn.
Wolfe, C. E., Van Rapids.
Wuesthoff, S. E., Lake Park.
Young, R. M., Red Oak.

KANSAS.

Aitken, W. A., Valley Falls.
Anderson, E. E., Garland.
Bredeshoff, J. C., Ford.
Conaway, C. L., Cottonwood Falls.
Dougherty, J. L., Hiattville.
Enzland, G. W., Valley Falls.
Ferguson, M. E., Dorado.
Fullenwider, J. C., Kansas City.
Hessig, J. F., Kansas City.
Haury, S. S., Newton.
Hazard, D. D., Phillipsburg.
Howe, F. L., Grand Bend.
Moore, J. C., Newton.
Palmer, E. M., Wichita.
Pille, Eugene, Portland.
Scholle, E. H., Topeka.
Tooley, G. E., Washington.
Vostling, V. I., Marquette.
Wagar, L. S., Florence.

KENTUCKY.

Anderson, W. W., Newport.
Barnes, J. T., Owensboro.
Anderson, J. C., Madisonville.
Bennett, La Fayette, Central City.
Brothers, C. H., Paducah.
Baxter, A. A., Guston.
Barner, Nestor, Caucayville.
Blane, H., Cadiz.
Hugg, T. D., Bardwell.
Boxley, H. M., Kirksville.
Campbell, B. A., Bowling Green.
Cole, L. L., Millerstown.
Cox, L. T., Owensboro.
Davis, A. W., Mortons Gap.
Douglas, J. C., Frankfort.
Gibson, J. J., Lexington.
Gourley, W. W., Fulton.
Griffith, B. B., Paducah.
Graham, Cyrus, Henderson.
Hoyer, F. J., Paducah.
Hubbard, J. M., Hickman.
Kincheloe, A. M., Hardinsburg.
Kehm, C. J., Newport.
Messink, W. B., Worthville.
Mutters, J. D., Rush.
O'Bannon, W. C., Stanford.
Overby, Bob C., Birmingham.
Pierce, H. S., Salt Lick.
Pennington, H. V., London.
Pollard, C. J., Paducah.
Purdy, W. M., Dabney.
Purdy, Geo., New Liberty.
Risen, W. J., Summersville.
Rouse, Wm. O., Hinesville.
Rogers, C. W., Hinesville.
Rutherford, B. S., Bowling Green.
Sanders, H. G., Campbellsville.
Steele, J. R., Junction City.
Smith, J. L., London.
Tarrin, W. W., Covington.
Tyler, B. D., Hadensville.
Van Deren, J. H., Cynthiana.
Wolfe, De W., Louisville.
White, J. G., Centula Springs.
Warren, I. S., Somerset.
Wilkinson, W. C., Little Rock.
Willis, Le Roy, Kleaton.

LOUISIANA.

Aldrich, R. H., Baton Rouge.
Babin, A. J., Alexandria.
Biscoe, C. A., Reserve.
Donaldson, L. T., Reserve.
Eldridge, H. A., Abbeville.
Gaudet, C. A., New Orleans.
Hargrove, J. B., Natchitoches.
Hilfoway, Eugene, Plaquemine.
LeBlanc, B. O., St. Gabriel.
Lemoine, J. D., Cottonport.
Lazaro, L., Norman.
Norman, Seaton, New Orleans.
Rand, I. T., New Iberia.
Reynaud, B. E., Baton Rouge.
Scott, S. M., Metairie.
Tusson, J. N., Quarantine.
Villien, J. A., Maurice.

MAINE.

Bonnett, J. L., Bridgton.
Bibber, R. D., Bath.
Barrell, D. A., Auburn.
Bray, C. W., Portland.
Porter, E. A., Pittsfield.

MARYLAND.

Benson, B. R., Cockeysville.
Coble, C. M., Baltimore.
Conser, C. C., Baltimore.
Duvall, J. M., Springfield.
Dill, P. G., Baltimore.
Gibson, J. E., Baltimore.
Hobelman, F. W., Baltimore.
Lewis, J. L., Bethesda.
McClfresh, C. M., Baltimore.
McCalman, Daniel, Baltimore.
Roberts, C. W. G., Baltimore.
Speaks, S. H., Grayton.
Tweedie, H. V., Baltimore.

MASSACHUSETTS.

Adams, W. C., East Taunton.
Adams, Z. B., Boston.
Allou, C. A., Holyoke.
Baird, J. W., Boston.
Birge, W. S., Provincetown.
Blair, O. C., Lynn.
Brown, J. C., Boston.
Houtwell, H. K., Boston.
Jarnes, H. J., Boston.
Bicknell, R. E., Swampscott.
Byrnes, W. C., Boston.
Bailey, W. C., Boston.
Brayton, R. W., Rochester.
Brodwilt, H. L., Dorchester.
Burt, F. L., Boston.
Bryant, Alice G., Boston.
Calkin, R. H., Jamaica Plain.
Cooper, Herman, Amesbury.
Davenport, J. H., Watertown.
Mohr, J. H., Brockton.
Dunning, E. J., South Boston.

Evans, Albert, Boston.
Ewing, G. W., Peabody.
Fildridge, D. G., Dorchester.
Flinn, Brown, Thos., Boston.
Flanagan, A. J., Springfield.
Gay, C. B., Fitchburg.
Gillis, J. E., Boston.
Gorrett, W. O., Attleboro.
Hill, L. C., Springfield.
Holmes, H. F., Tewksbury.
Harper, A. A., North Adams.
Hoyt, W. S., Waltham.
Hurdley, E. J., Waltham.
Howell, Thos., Worcester.
Jack, L. H., West Newton.
Jennings, C. H., Fitchburg.
Kinloch, C. C., Springfield.
Kirby, H. C., New Bedford.
Libby, J. H., East Weymouth.
Loring, R. G., Boston.
Lyons, F. D., Boston.
Lowenstein, F. P., Westfield.
Lowell, A. P., Fitchburg.
Little, A. N., Newburyport.
Mans, J. V. A., Boston.
MacKillop, Daniel, Cambridge.
Morris, M. A., Boston.
MacKeen, A. A., Whitman.
Mason, G. P., South Boston.
Mason, N. L., Boston.
MacTermott, W. V., Salem.
Marshall, A. W., Worcester.
McCarthy, Thos., Cambridge.
Millbury, W. W., Newburyport.
Patch, W. T., Roxbury.
Pelree, G. A., Tewksbury.
Perry, C. P., North Grafton.
Plummer, F. J., Malden.
Perry, A. P., Jamaica Plain.
Quossy, A. H., Fitchburg.
Richardson, W. L., Boston.
Richmond, E. D., Reading.
Stedman, H. R., Brookline.
Savage, G. E., Worcester.
Smith, M. L., Fram.
Stanton, C. C., Boston.
Stone, C. C., Worcester.
Seelye, W. C., Worcester.
Smith, H. B., Boston.
Swadwick, O. W., Wares.
Tilton, O. O., Lexington.
Thornton, J. B., Boston.
Vincent, Beth., Boston.
Warren, C. H., North Easton.
White, H. W., Boston.
Warren, F. L., Bridgewater.
Watkins, R. P., Worcester.
Webster, R. P., Worcester.
Wald, R. H., Boston.
Willinsky, C. F., Boston.

MICHIGAN.

Abbott, A. J., Albion.
Brush, R. E., Crosswell.
Lippinger, H. G., Eau Claire.
Gowan, A. L., Detroit.
Ricker, S. C., Vicksburg.
Hinterman, Johann, Detroit.
Teicher, John, Kalamazoo.
Jesner, G. B., Marshall.
Thorn, S. R., Ann Arbor.
Hudd, J. L., Detroit.
Robbins, N. J., Zeeland.
Cimball, A. S., Battle Creek.
Gale, G. E., Princeton.
Jensen, J. P., Ann Arbor.
deCausland, M. R., Covert.
Jarlin, P. E., Imlay City.
Jyers, J. M., Dowagiac.
Jungstree, M. L., Saginaw.
Jewcomb, W. W., Detroit.
Ayne, A. S., Manistee.
Sch, H. M., Detroit.
Hill, George, Detroit.
Owensend, I. S., Detroit.
Weddie, G. S., Sandusky.
Ship, P. D., Detroit.
Vanderbilt, Detroit.
Viner, D. E., Vanderbilt.
Visner, C. A., Columbiaville.
Venzler, A. V., Grand Rapids.

MINNESOTA.

tushey, M. E., Arlington.
Larunin, E. E., Pine City.
rosch, W. A., Duluth.
rosch, W. A., Minneapolis.
Conroy, F. O., Gary.
ray, C. E., Kellgoz.
nauff, M. K., Two Harbors.
ewig, A. J., Duluth.
laris, E. R., Duluth.
tett, C. W., Minneapolis.
sfjord, J. N., Fertile.

MISSISSIPPI.

ills, T. C. W., Vicksburg.
Johnson, S. G., Holly Springs.
Brewer, B. F., Brookhaven.
ackson, M. W., Water Valley.
tCallum, A., Edwards.
artin, B. J., Vicksburg.
Hudd, T. B., Jackson.
Holt, P. J., Vicksburg.
Leary, J. B., Clinton.

Ringold, J. O., Vaiden.
Spaulding, F. C., Crawford.
Wilson, H. E., Vicksburg.

MISSOURI.

Attkisson, J. A., Morehouse.
Burnett, Clifton, St. Louis.
Brannin, F. H., Kansas City.
Dove, O. H., Kansas City.
R. C. C., Forsyth.
Grote, W. F. H., St. Louis.
Hickerson, J. C., Independence.
Koenig, G. W., St. Louis.
Resimiro, L. E., St. Louis.
Murray, I. F., Holden.
Naylor, Olin, Atlanta.
Settle, C. T., Langdon.
Schlostein, A. G., St. Louis.
St. John, H. H., Edina.
Tiedemann, E., St. Louis.
Winter, Wm., St. Louis.
Vasterling, P. F., St. Louis.

MONTANA.

Piedalue, Joseph, Bozeman.

NEBRASKA.

Byers, S. J., Primrose.
Egbert, C. L., Glenville.
Greene, J. M., Manley.
Montgomery, R. C., Hickman.
Pedersen, F. M., Plunneberg.
Reeves, A. E., Farnam.

NEW HAMPSHIRE.

Kittredge, F. E., Nashua.
Merrill, J. F., Warner.
Rogers, C. C., Farmington.
Wallace, A. L., Nashua.

NEW JERSEY.

Brasefield, E. N., Phillipsburg.
Doddson, L. C., Jersey City.
Ellis, A. L., Metuchen.
Haupling, F. R., Newark.
Knecht, Cyrus, Newark.
McGogney, N. S. J., Elizbeth.
Husserl, Siegfried, Newark.
Loughwan, A. J., Newark.
McLaughlin, T. J., Jersey City.
McNietti, C. C., Orange.
Randall, C. H., Newark.
Salom, S. H., Jersey City.
Traubor, J. H., Newark.
Golfson, Joseph, Jersey City.
Warman, David, Jersey City.

NEW MEXICO.

Burnham, L. L., Las Cruces.
Spargo, W. W., Albuquerque.

NEW YORK.

Allen, F. L., Binghamton.
Baker, R., Rochester.
Brown, F. E., Brooklyn.
Co, H. C., New York City.
Carter, W. W., New York City.
Randall, F. J., New York City.
Clark, H. S., New York City.
Collie, J. J., Geneva.
Comstock, F. E., Wellsville.
Cok, R. G., Rochester.
Coffler, M. L., Rochester.
Crombie, W. C., Mechanicsville.
Crosby, P. A., Lockport.
Curtice, L. E., Buffalo.
Dewer, T. F., Buffalo.
Doane, Harriet M., Fulton.
Debohlis, G. M., New York City.
Fox, F. E., Fulton.
Farnham, L. L., Binghamton.
Gates, A. C., Kingston.
Goodridge, F. G., New York City.
Hunt, W. E., Little Falls.
Jodick, E. E., Brooklyn.
Houghton, H. S., New York City.
Heazlit, Leda, Auburn.
Huber, J. B., New York City.
Jessup, W. H., New York City.
Lederman, M. D., New York City.
Michael, F. M., Binghamton.
Monroe, N. A., Syracuse.
Hann, M. D., Buffalo.
Norwood, E. C., Kingston.
Neary, P. M., Cortland.
Peeler, L. E., Harrison.
Paschal, W. E., Brooklyn.
Pinker, E. H., New York City.
Smith, L. B., Hornellsville.
Smith, F. C., New York City.
Sole, Francis, New York City.
Ward, W. D., Rochester.
Webster, H. G., Brooklyn.
Warner, L. F., New York City.

NORTH CAROLINA.

Averitt, K. C., Cedar Creek.
Bolton, M., Rich Square.
Brooks, E. H., Durham.
Brooks, E. H., Redville.
Coverness, Z. M., Wakefield.
George, D. S., Marshallburg.
Schaub, O. P., Duke.
Schaub, O. P., Roxboro.

Walker, W. E., Graham.
Withers, S. M., Chadbourne.
Whitfield, W. C., Grifton.
Whitley, D. P., Millingport.

NORTH DAKOTA.

Dochterman, L. R., Williston.
Stough, R. W., Verona.
Truscott, J. L., Minford.

OHIO.

Bowman, D. S., Akron.
Bower, E. E., Alliance.
Beturd, D. P., Portsmouth.
Bayliff, J. E., Unopolis.
Crabill, T. V., Osborn.
Beer, J. D., Mooter.
Calhoun, W. M., East Liverpool.
Chaney, G., New Guilford.
Davis, J. H., East Liverpool.
Dodd, V. A., Columbus.
Dickinson, T. F., Cincinnati.
Dromgold, S. T., Elmore.
Erdman, R. F., New Richmond.
Eames, E. W., Columbus.
Land-Glaesser, B., Cincinnati.
Goodrich, G. L., Canal Dover.
Gabel, H. C., Columbus.
Gooding, J. L., Gilmore.
Hodges, C. W., Hamilton.
Harris, I. B., Columbus.
Hoover, C. M., Alliance.
Hamilton, E. A., Columbus.
Hones, Carl, J., Marysville.
Hoffline, J. O., Columbus.
Hamilton, David Blair, Mason.
Hinnen, G. A., Cincinnati.
Ingels, W. E., Columbus.
Kunz, J. C., Cincinnati.
Krebs, P. H., Cleveland.
Keenan, W. H., Caldwell.
Lockhart, J. P., McKmansville.
Lupton, Ella G., Gallipolis.
McCafferty, Frank, Columbus.
McClellan, Wilson M., Ashland.
McGogney, N. S. J., New Lexington.
Nelson, A. W., Cincinnati.
Nevin, W. C., Lisbon.
Oglesby, N. P., Columbus.
Omara, S. J., Columbus.
Ellison, S. J., Harveysburg.
Peelle, F. A., Wilmington.
Powell, C. E., Dayton.
Ready, Clifton, Columbus.
Stauffer, Gilman W., Akron.
Scott, C. B., Londonville.
Thone, J. A., Cincinnati.
Thone, J. A., Columbus.
Thomas, J. M., Columbus.
Temple, J. C., Alliance.
Teeters, C. A., Jeffersonville.
Thibet, C. A., Westboro.
West, S. L., Springfield.
Weller, J. N., Akron.
Williams, D. A., Franklin.
Wilckham, Wm., Toledo.
Wray, M. P., Columbus.
Wood, G. W., Wilmington.
Whelan, R. E., Youngstown.

OKLAHOMA.

Mueller, J. A., Snyder.
Runkle, R. E., El Reno.
Warhurst, M. A., Remus.

OREGON.

Rentz, E. B., Frost Grove.

PENNSYLVANIA.

Burnham, C. G., Jeannette.
Barney, E. R., Watsburg.
Craig, C. R., Philadelphia.
Donnelly, Florence, E., Conshohocken.
Detrick, F. A., Cresson.
Flynn, J. F., Erie.
Gardner, Frank, Montgomery.
Glover, O. W., H. Laurelton.
Gensmure, C. W., New Enterprise.
Henderson, P. N., Norristown.
Hogue, D. A., Altoona.
Howe, Wm., Shugite House.
Hemminger, Geo., Carlisle.
Hoffman, C. W., Rimersburg.
Kistler, E. H., Lansford.
Johnson, F. C., Wilkesbarre.
Loeb, Ludwig, Philadelphia.
Lyons, Fowler, Tatortville.
McKee, M. A., Oil City.
McHadden, S. P., M., Idylton.
Mitchell, S. Welr, Philadelphia.
Maine, C. L., Delveta.
Mathott, G. H., Mare.
Nelson, L. L., Lonsdale.
Patterson, F. D., Philadelphia.
Petheram, J. H., Grant.
Ridpath, R. F., Philadelphia.
Ramsey, W. C., Cornopolis.
Rutherford, J. Frank, Bishop.
Shearer, W. L., Reading.
Sherman, Jeannette H., Norris town.

Ward, E. L., Osceola.
Woods, A. B., Erie.
Walker, Amy E., Chester.
Walker, C. J., Sharon.
Weida, J. J., Emaus.
Woods, G. B., Carlisleville.

PHILIPPINE ISLANDS.

Edwards, R. T., Manila.

RHODE ISLAND.

Buffum, W. H., Providence.
DeWolf, H., Providence.
Gomberg, M. B., Providence.
Phillips, J. L., Providence.
Rogers, F. W., Newport.

SOUTH CAROLINA.

Shaw, A. E., Columbia.

SOUTH DAKOTA.

Hobb, C. S., Mitchell.
Prink, R. P., Wagner.
Madden, Edith L., Cherry Creek.

TENNESSEE.

Burke, R. A., Dyersburg.
Bensley, M. A., Hampshire.
Cotten, J. L., Nashville.
Coble, T. J., Shelbyville.
Capps, J. M., Nashville.
Cochran, T. N., Holly Leaf.
Gibbs, Vanis, Chattanooga.
Haskins, J. W., Nashville.
Hoghead, J. McC., Chattanooga.
Hope, W. T., Chattanooga.
Johnson, J. W., Chattanooga.
Kinz, R. W., Gordonsville.
Kennedy, W. T., Johnson City.
Long, E. A., Johnson City.
McGrew, S. J., Shelbyville.
Pearson, W. G., Gordonsville.
Robertson, E. A., Chattanooga.
Shugart, J. L., Cleveland.
Taylor, J. B., Greenville.
Walker, D. B., Knoxville.
West, J. Q. A., Knoxville.

TEXAS.

Acheson, A. W., Denison.
Bailey, R. H., Gainesville.
Blanton, J. J., Buda.
Bristow, W. A., Athens.
Bryant, J. B., Whitesboro.
Bryan, T. P., Iredell.
Brown, J. P., Gustine.
Cooke, E. F., Forrestone.
Camp, Jim, Pecos.
Cates, S. R., Abilene.
Cox, Marion L., Canton.
De Long, A. C., Winters.
Edlutt, E. R., Pecos.
Edman, P. G., Houston.
Hoard, W. R., Sherman.
Hanna, J. J., Amarillo.
Homan, D. C., Ozleshy.
Holman, J. C., Franklin.
Hudins, D. H., Forney.
Howard, W. R., Fort Worth.
Haggen, J. R., Preston.
Howell, R., Snyder.
Jordan, D. M., Ozleshy.
Klein, Nettie, Texarkana.
Lockett, W. A., Amarillo.
Merrill, E. C., Colorado.
Milner, J. N., Cade.
McGee, T. F., Amarillo.
Morrison, F. A., Grosvenor.
Mehabe, Linton, Whitesboro.
Mihurn, J. R., Ector.
Matthews, Y. A., Atlanta.
McClung, R. L., Atlanta.
Parks, P. B., Dallas.
Priester, W. G., Houston.
Richardson, J. A., Seymour.
Strong, Sneed, Bowie.
Steels, E. H., El Dorado.
Small, A. B., Waxahachie.
Schmoeller, W., Sealy.
Taylor, T. B., Elgin.
Tens, T. M., Denison.
Worsham, J. P., Corsicana.
Wood, J. H., Hubbard.
Williams, C. R., Mineral Wells.
Winters, E. P., Antonio.
Williams, E., Celeste.
Wheeler, J. Smilie, Coryell.
Young, W. M., Dallas.

UTAH.

Clift, Frederic, Provo.

VERMONT.

Hayward, H. H., Tnnbridge.

VIRGINIA.

Belt, H. S., North Preston.
Croton, W. E., Wakema.
Huff, I. E., Roanoke.
Jordan, S. R., Virginia.
Meyer, C. W., Blacksburg.
Williams, W. L., Brook Neal.
Wallace, A. M., Gate City.
Womack, J. H., Spring Garden.

WASHINGTON.

Cook, G. F., Bellingham.
Luna, H. K., Monroe.
McCarthy, H. H., Spokane.

WEST VIRGINIA.

Archer, W. M., Jr., Stone Cliff.
Rodgers, G. C., Gladsy.
Willis, C. A., Jenniugston.
Yeakley, W. H., Davis.

WISCONSIN.

Bradford, E. B., Hudson.
Carhart, G. A., Milwaukee.
Devine, G. C., Mason.
Dewey, G. W., Burnett.

Egeland, G. R., Ephraim.
Foerster, O. H., Milwaukee.
Fiebigler, G. J., Waterloo.
Flett, Charles, Waterloo.
Grenzo, C. G., Chilton.
Hougen, Edward, Pittsville.
Knauf, F. P., Kiel.
Lynch, D. W., West Bend.
Nixon, A. J. W., Delafield.
Rector, A. E., Appleton.
Rostad, K. T., Spring Valley.
Sleyster, L. R., Kiel.
Stockman, B. G., Woodville.

WYOMING.

Walker, G. W., Hyattville.

Marriages

JOSEPH BIELLO, M.D., to Miss Maria T. DeLuca, both of Philadelphia, February 21.

J. WILLIAM EIDSON, M.D., to Miss Bertha Anne Staley, both of Bourbon, Ind., February 14.

J. HUBERT WADE, M.D., to Miss HELENE HECK, M.D., both of Boonsboro, Md., January 24.

JOY HARRIS, M.D., and Squire G. T. Glascock, both of Greensboro, N. C., February 22.

I. VALENTINE LEVI, M.D., Philadelphia, to Miss Helena Rosenstein of Lancaster, Pa., February 22.

CHARLES M. DUNNING, M.D., Franklin Furnace, N. J., to Miss Isabelle Watt of Hamburg, N. J., recently.

PHILIP HANSON HISS, M.D., New York City, to Miss Caroline Daw, in Brooklyn, N. Y., February 13.

HANNAH C. McCALHAN FLEMING, M.D., and William J. Moran, both of Falls City, Neb., at Hiawatha, Kan.

GEORGE W. McCAFFERTY, M.D., Norristown, Pa., to Miss Estia Mae Grove of Stewartstown, Pa., February 18.

ELMER E. BARTELT, M.D., Lamar, Colo., to Miss Nellie Gersbach of Montezuma, Iowa, in Denver, Colo., February 18.

WILLIAM EDGAR WIRT, M.D., Havana, Cuba, to Mrs. Lucy J. Belding of Cleveland, Ohio, at Jacksonville, Fla., February 12.

CHARLES WESLEY BISHOP, M.D., Minneapolis, Minn., to Mrs. Milda Catherine Werder of Milwaukee, Wis., at Clinton, Iowa, February 20.

Deaths

John E. Bingham, M.D. Jefferson Medical College, Philadelphia, 1873; first president of the Walla Walla Medical Society; for four years a surgeon in the United States Marine Corps, and afterward acting assistant surgeon in the United States Army, in the Nez Perce campaign and in the Spanish-American War; for one term a member of the State Board of Medical Examiners; physician to the state penitentiary; local surgeon at Walla Walla, Wash., of the Oregon Railway & Navigation Company, died at his home at Walla Walla, February 19, from nephritis, aged 59.

Joseph Hils, M.D. McGill University, Medical Department, Montreal, 1873; a prominent physician of Woonsocket, R. I.; a member of the Rhode Island Medical Society and of the Woonsocket District Medical Association; consulting surgeon of St. Joseph's Hospital, Providence, in 1894, and a member of the Woonsocket Hospital staff and surgeon-in-chief since the foundation of the institution in 1888, died at the Woonsocket Hospital, February 23, from nephritis, after an illness of three weeks, aged 56.

John Williamson Palmer M.D. University of Maryland, School of Medicine, Baltimore, 1846; first city physician of San Francisco, in 1849-50; surgeon in the Burmese War, in 1851 and 1852; a Confederate war correspondent during the Civil War; one of the editors of the Century and Standard dictionaries; distinguished as a physician, traveler, litterateur and poet, died at his home in Baltimore, February 26, from senile debility, aged 80.

Joseph P. Bolton, M.D. Jefferson Medical College, Philadelphia, 1890; demonstrator of chemistry and physiology in that institution; a member of the Philadelphia County Medical Society; assistant in the orthopedic and neurological outpatient departments of Jefferson Hospital, died in that institution February 24, a week after an operation for tumor of the brain, aged 66.

James B. Cherry, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1868; a veteran of the Civil War; a trustee of the pauper institutions of Boston in 1904; for several terms medical director of the Department of Massachusetts, G. A. R.; a member of the Fusilier Veteran Association and of the Ancient and Honorable Artillery Company, died suddenly at his home in Boston, February 21, from heart disease, aged 62.

Edwin Geer, M.D. College of Physicians and Surgeons, Baltimore, 1891; organizer and commander of the Maryland Navy Brigade; surgeon to the fire department of Baltimore; formerly coroner of Baltimore County, and assistant quarantine officer of Baltimore; a lieutenant senior grade in the Navy during the Spanish-American War, died at his home in Baltimore, February 25, from septicemia, after a long illness, aged 41.

Samuel Doolittle Brooks, M.D. Berkshire Medical College, Pittsfield, Mass., 1841; superintendent of the New York Juvenile Asylum from 1863 to 1873; for six years medical supervisor of Mount Holyoke Academy, South Hadley, Mass., and for five years superintendent of the Massachusetts State Almshouse, died at his home in Springfield, Mass., February 26, aged 89.

C. Henri Woode, M.D. Howard University, Medical Department, Washington, D. C., 1892; one of the most prominent colored practitioners of Vicksburg, Miss.; for ten years a member of the board of pension examining surgeons; founder and president of the Union Savings Bank of Vicksburg, died at his home in that city, February 26.

Laird M. Woods, M.D. University of Buffalo, Medical Department, 1872; Burgess of Wheatland, Pa., for several terms; for ten years surgeon for the Pennsylvania Road; for several terms coroner of York County, Ore., died at his home in Dallas, Ore., February 12, from septicemia, due to a carbuncle, after a long illness, aged 70.

August Rhoads, M.D. Chicago Medical College, 1873; for thirty years a practitioner of Carthage, Mo.; a veteran of the Civil War; a prominent member and several times an officer of the Jasper County Medical Society, died at his home in Carthage, February 28, from nephritis, after an illness of four months, aged 69.

John T. Coates, M.D. Kentucky School of Medicine, Louisville, 1872; a veteran of the Civil War; for fourteen years a practitioner of Milwaukee, died at his home in that city, February 22, as a result of injuries sustained Sept. 4, 1905, when he was crushed between a dray and a moving railway car, aged 55.

John O. F. Hill, M.D. Long Island College Hospital, Brooklyn, N. Y., 1886; a member of the Kings County Medical Society, and formerly a member of the Coney Island school board; probably the best known physician of Coney Island died in Connecticut, February 27, after a brief illness, aged 43.

C. E. Boynton, M.D. College of Medicine, Syracuse University (N. Y.), 1888, formerly resident physician at the Onondaga County (N. Y.) Insane Hospital and later a practitioner in Wyoming, Oregon, Washington, California and Utah, died in Redding, Cal., February 12, after a long illness, aged 45.

Sumner Clark, M.D. St. Louis Medical College, 1871; a member of the American Medical Association; one of the most prominent and wealthy physicians of Effingham County, Ill., owner of the Effingham Republican, died at his home in Effingham, March 4, from pneumonia, after a short illness.

Abner C. Calvin, M.D. Jefferson Medical College, Philadelphia, 1878, of Meadville, Pa., died suddenly at the City Hospital, Meadville, from edema of the lungs, February 24, two weeks after a runaway accident in which he was thrown from his buggy and sustained serious injuries, aged 51.

Charles A. Foster, M.D. College of Physicians and Surgeon in the City of New York, 1870, of Newark, Ohio, at one time a member of the faculty of the Ohio Medical University, died from uremia at the City Hospital, Newark, February 21, eight days after an operation for appendicitis, aged 64.

Alfred J. Catellier, M.D. Laval University, Medical Department, Quebec, 1891, a member of the American Medical Association, and one of the most prominent physicians of New Hampshire, died at his home in Berlin, February 17, from heart disease, after a brief illness, aged 38.

Joseph Edgar Wells, M.D. Jefferson Medical College, Philadelphia, 1887; a member of the American Medical Association and of the Kings County (N. Y.) Medical Society; a prominent practitioner of Brooklyn, died at his home in that city, February 26, from heart disease, aged 41.

Benjamin F. Tombs, M.D. Cleveland (Ohio) Medical College, 1867; a member of the Cambria County (Pa.) Medical Society; a well-known practitioner of Morrellville, Pa., died at his home in Johnstown, Pa., February 19, from nephritis, after an illness of several years, aged 70.

C. W. Salter, M.D. Medical College of Georgia, Augusta, 1879; a prominent physician and planter of Bartow, Ga.; twice a representative of Jefferson County in the legislature, died at his home in Bartow, February 22, from acute gastritis, aged 57.

Hiram A. Peterman, M.D. Eclectic Medical Institute, Cincinnati, 1857; a surgeon in the army during the Civil War, died at his home in Marshall, Mich., February 23, from senile debility following a fracture of the hip eight weeks before, aged 84.

Richard S. Vickery, M.D., assistant surgeon, Second Michigan Infantry, and afterward surgeon in the Civil War; successively assistant surgeon, captain, major and lieutenant-colonel in the regular establishment, died recently in New Jersey.

John V. Nash, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1888, coroner of Sabine Parish, Louisiana, for two terms, died at his home in Many, La., February 23, from nephritis, after an illness of two weeks, aged 46.

Harold F. Thompson, M.D. Tufts's College Medical School, Boston, 1905, an interne at the Worcester City Hospital, died in that institution February 19 from pneumonia, following rheumatism, after an illness of less than two weeks, aged 25.

J. H. Giddings, M.D. Castleton (Vt.) Medical College, 1856; a pioneer practitioner of Harrison County, Iowa; surgeon in an Illinois regiment during the Civil War, died at his home in Woodbine, Iowa, February 28, from pneumonia, aged 74.

David S. Allhands, M.D. Eclectic Medical Institute, Cincinnati, 1856; University of Louisville, Medical Department, 1893, of Louisville, died at St. Anthony's Hospital in that city, February 23, from uremia, after a long illness, aged 72.

Edward H. Mayer, M.D. Howard University, Medical Department, Washington, D. C., 1885, the first regular colored practitioner of Columbus, Ga., died at his home in that city, February 24, from pneumonia, after an illness of one week.

John Udolphus Haynes, M.D. Albany (N. Y.) Medical College, 1872, for several terms alderman and member of the board of education of Cohoes, N. Y., died at his home in that city, February 23, after a protracted illness, aged 56.

William Hill, M.D. Jefferson Medical College, Philadelphia, 1856; once United States consul at Sarnia, Ont.; a prominent practitioner of Bloomington for nearly fifty years, died at his home in Bloomington, Ill., March 1, aged 77.

George K. Harrington, M.D. Bellevue Hospital Medical College, New York City, 1874, for many years a leading practitioner of Jackson, Miss., died suddenly from cerebral hemorrhage in Canton, Miss., February 19, aged 54.

Lawrence G. Mitchell, M.D. University of Maryland, School of Medicine, Baltimore, 1884, Downings, Va., a member of the American Medical Association, died near Sharp's Wharf, Richmond County, Va., February 28, aged 44.

C. T. Simpson, M.D. Medical College of Alabama, Mobile, 1877, formerly of Temple, Texas, and superintendent of the State Insane Hospital, Austin, died at his home in Cananea, Mexico, February 18, from pneumonia.

C. C. Cole, M.D. Ohio Medical University, Columbus, 1896, coroner of Belmont County, Ohio, in 1902, of Bridgeport, Ohio, died at the City Hospital, Wheeling, W. Va., from gallstone disease, February 25, aged 37.

L. P. Rogers, M.D. Rush Medical College, Chicago, 1876, of Beatrice, Neb., formerly a practitioner of Buffalo, Ill., was instantly killed February 25, at Godfrey, Ill., by falling under the wheels of a passenger train.

Daniel Webster Cooper, M.D. New York University, New York City, 1855, for many years a practitioner of Port Jervis, N. Y., died in Mount Salem, N. Y., suddenly, from heart disease, February 14, aged 74.

William F. Drake, M.D. New York University, New York City, 1889, died at his home in New York City, March 1, from the effects of an overdose of morphia, self-administered for the relief of neuralgia, aged 39.

Thomas Noyes Birnie, M.D. College of Physicians and Surgeons in the City of New York, 1880, of Springfield, Mass., died at Orlando, Fla., February 26, from nephritis, after a long illness, aged 51.

Thomas J. Clouse, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1869, died at his home in Galanna, Ohio, from subacute nephritis, after an illness of three days, February 25, aged 64.

Samuel Breitenbach, M.D. College of Physicians and Surgeons in the City of New York, 1848, died at his home in Roxborough, Philadelphia, February 27, after a prolonged illness, aged 80.

Lewis Bieber, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1867, a veteran of the Civil War, died at his home in Phillipsburg, N. J., February 26, aged 61.

S. J. Withers, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1850, a well-known practitioner of Mooresville, Ala., died at Pine Bluff, Ark., February 27, aged 78.

J. Linwood Gunn, M.D. Kentucky School of Medicine, Louisville, 1877, of Ashland, N. C., was thrown from his buggy near Williamson's Mill, N. C., February 22, and instantly killed, aged 45.

Thomas Hill, M.D. New York University, New York City, 1854, surgeon in the Confederate service during the Civil War, died suddenly at his home in Goldsboro, N. C., February 18, aged 73.

Randall Holden, M.D. Baltimore Medical College, 1861, assistant surgeon in the Confederate service during the Civil War, died at his home in Petersburg, Va., February 3, aged 86.

Addison H. Foster, M.D. College of Physicians and Surgeons in the City of New York, 1866, formerly a prominent practitioner of Chicago, died at his home in Oak Park, Ill., March 3.

George W. McConnell, M.D. Eclectic Medical Institute, Cincinnati, 1874, died at his home in Ashland, Ore., from acute gastritis, February 22, after an illness of two days, aged 56.

Adam L. Galbraith, M.D. Medical College of Ohio, Cincinnati, 1890, died at his home in Frankfort, Ohio, February 20, from tuberculosis, after an illness of several years, aged 39.

Thomas Walker Murray, M.D. Jefferson Medical College, Philadelphia, 1885, died at his home in Philadelphia, February 25, from pneumonia, after a short illness, aged 45.

Abel L. Darling, M.D. Eclectic Medical Institute, Cincinnati, 1881, of Kibbourn, Ill., died suddenly at a hotel in Pekin, Ill., from heart disease, February 23, aged 55.

Edward K. Thompson, M.D. Hahnemann Medical College and Hospital, Chicago, 1888, died at his home in Kansas City, Mo., after an illness of four days, February 27, aged 44.

Eli Stoter, M.D. Medical Department of the Western Reserve University, Cleveland, Ohio, 1881, died at his home in Bellville, Ohio, February 27, from lung disease, aged 50.

Stephen L. Breckenridge, M.D. St. Louis Medical College, 1879, a member of the American Medical Association, died at his home in Riverside, Ill., February 21, aged 44.

Augustus L. Gilbert, M.D. University of Buffalo (N. Y.) Medical Department, 1848, died at his home in North Colton, N. Y., February 22, from pneumonia, aged 81.

William H. Hinton, M.D. University Medical College of Kansas City, 1896, of Ogden, Utah, died at the Ogden General Hospital, February 19, from meningitis, aged 37.

John D. Mulherson, M.D. Jefferson Medical College, Philadelphia, of Nashville, died at the home of his mother in Brownsville, Tenn., February 18, aged 37.

Stephen M. Harris, M.D. Cooper Medical College, San Francisco, 1890, twice mayor of Grass Valley, Cal., died at his home in that city, February 18, aged 77.

Nicholas D. Young, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1867, died at his home in Youngsville, La., February 8, aged 64.

Leonard P. Aaron, M.D. North Carolina Medical College, Davidson, died at his home in Mount Olive, N. C., from heart disease, after a long illness, aged 32.

Cynthia Singleton-Sheffield, M.D. Eclectic Medical Institute, Cincinnati, 1884, died at her home in Waterloo, Iowa, February 17, after a short illness, aged 60.

Edward M. Allen, M.D. Vanderbilt University, Medical Department, Nashville, 1893, died suddenly at his home in Dayton, Tenn., February 22, aged 35.

J. H. Chandler, M.D. University of Tennessee, Medical Department, Nashville, 1900, of Jackson, Tenn., died in Gibson, Tenn., February 19, aged 35.

J. C. Riley, M.D. Atlanta (Ga.) Medical College, 1894, of Hamilton, Ga., died suddenly at Phoenix, Ariz., February 17.

B. W. Woodburn, M.D. (Thirty-three Years' Practice, Kentucky, 1893), died at his home in Bremen, Ky., February 24, from heart disease, aged 73.

Albert D. Hill, M.D. Albany (N. Y.) Medical College, 1879, died suddenly at his home in Chicago, March 4, from heart disease, aged 57.

C. D. Osburn, M.D. Jefferson Medical College, Philadelphia, 1886, died at his home in Wilsonville, Ore., February 19, from acute gastritis.

George L. Newcombe, M.D. Harvard University Medical School, Boston, died at his home in North Scituate, Mass., February 21.

N. Lee Howison, M.D. State University of Iowa, Medical Department, Iowa City, 1882, died at his home in Bogata, Texas, February 19.

David McClenahan, M.D. Starling Medical College, Columbus, Ohio, 1863, died at his home in Cedar Rapids, Iowa, February 25, aged 86.

Death Abroad.

S. S. Rosenstein, M.D., professor of experimental pathology and pathologic anatomy at Leyden, died January 31, aged 74. He was a native of Berlin and privat docent at the university until he accepted a call to Holland in 1865. His greatest work was a treatise on pathology and treatment of kidney affections, 1863, which has been translated into several languages. Among his other numerous works are several on diabetes, cirrhosis of the liver, etc., and his pupils, de Jong and de Haan, have also made notable contributions to the pathology of digestion and metabolism.

Book Notices

PSYCHIC TREATMENT OF NERVOUS DISEASES. P. DuBois. Translated and edited by S. E. Jelliffe, M.D., Ph.D., and W. A. White, M.D. Cloth. Pp. 466. Price, \$3.00 net. New York: Funk & Wagnalls Co. 1905.

In these days when so much has been said and is still being said in regard to suggestion in medical treatment this translation of Professor DuBois' work on the psychoneuroses and their moral treatment is timely. It differs decidedly from much of the literature on the subject that is so familiar to us. There is no claim of the virtues of hypnotism. The author's methods are not mysterious, but are based on common-sense principles, accepting as he does the amenability of a large class of diseases to mental influences rationally employed. In so far, however, as it is a protest against physical methods in these special disorders it may not command absolute agreement with its demands on the part of all its readers. Every skilled practitioner must be well aware of the value of moral treatment in many cases, and there are few, if any, who do not consciously use it in their practice. A very large number will, nevertheless, find the work very suggestive and profitable reading, even if they can not follow the author in all of his views.

The first six or seven chapters, comprising about one-fifth of the volume, are not strictly medical, but rather psychological. In these the author develops his ideas that have led him up to the therapeutic position he has taken and which he considers an essential introduction to the more practical part of his work. It does not follow, however, according to his own statement, that it is necessary for the success of his methods that the physician employing them must be like him, a materialistic monist and determinist, and those, therefore, who may find themselves disagreeing with his very pronounced opinions may still derive profit from his book.

The psychotherapy which he calls rational is addressed directly to the reason of the patient, and depends very largely on the tact and sympathy of the physician—fully as much as on his faith in his theories and methods. The patient must be inoculated with the idea that his case is a curable one, his exaggerated susceptibilities must be toned down and, while DuBois does not specially favor the use of drugs and remedies their use in many of these conditions, he does not neglect the advantages of certain physical measures such as environment, etc. Thus he employs a modified Weir Mitchell method, without any special dependence on electricity and massage measures, and places the principal stress on purely moral treat-

ment with rest and good nutrition in a well-regulated sanitarium. In fact, he rather condemns, for many cases, the employment of even elaborate clinical examination methods as tending to produce a mental condition unfavorable to the psychic treatment. He employs his treatment not only in cases clearly hysterical and neurasthenic, but also in conditions that are sometimes considered organic, such as mucous or so-called membranous colitis, which, according to his observation, is mainly the result of habitual constipation. It is probable that some of our specialists in rectal diseases may think his observation imperfect in some of these cases.

Take it as a whole, however, Professor DuBois' work makes a very good showing for moral treatment in a very large class of disorders not dependent on determinable permanent organic changes. Whether every practitioner will be able to go his length in the rejection of drug medication and certain physical agencies is, perhaps, a question, and it certainly will require more than usual diagnostic skill to exclude a possible element of organic disease in many of these cases. The book is one, however, that few judiciously minded physicians can read without profit. It is beautifully written and the translation seems to very fairly reproduce the spirit as well as the accurate text of the original. The obtrusiveness of the author's religious heterodoxy, which is not an essential feature in a work of this kind, might well have been omitted. But Professor Dejerine says in his preface that DuBois is "a man with convictions," which he is not afraid to express in religious as well as in other matters. We have also the same authority as evidence that Dr. DuBois has resolutely and thoroughly carried out his ideas in his therapy and as it here appears with great success.

Miscellany

Diseases of the Indians.—At a joint meeting of the Medical and Anthropological societies of the District of Columbia, Dr. Ales Hrdlicka read a paper on this subject. His information was derived partly from personal observation and partly from data furnished by physicians in the Indian service. He said that on the whole the health of the Southwestern and North Mexican uncivilized Indians is superior to that of the whites living in larger communities. The Indian's advantage lies chiefly in the greater freedom from those morbid conditions that arise through defective heritage; from those that in the white race frequently accompany teething, puberty, menstruation, gestation, menopause and senility, and from malignant growths; while the only disadvantage of the Indian consists in a possibly lesser resistance to some of the contagious diseases, notably smallpox and measles. He stated that pathologic conditions of the blood are rare, but that anemia is occasionally met in the later stages of malaria or in a slight degree in some of the taller schoolgirls who have become debilitated. Occasionally the thyroid degenerates into goiter. The lymph glands appear to be the seat of only one affection, and that scrofula; even this is rare. The prostate was found enlarged in only a few instances. Affections of the mammary gland are much less common than in white women. Diseases of the circulatory system are very infrequent but, on the other hand, respiratory affections are relatively common and cause numerous deaths. Varicose veins are rare, as are hemorrhoids. Disorders of the digestive apparatus, he states, are more common than any other disease of the Indians, but except in infants they are rarely serious. Typhoid is uncommon, though forms of bloody diarrhea or dysentery, often probably of malarial origin, attack Indians of certain localities, especially in the lower parts of Mexico. Intestinal parasites are seldom heard of. Kidney disorders in pregnancy, and eclampsia are rare. Diseases of the skin are chiefly limited to eczema, favus or ulcers, in the children, acne in young adults, and ulcers due to neglect in the older. Headache is common, but epilepsy, insanity and paralysis are rare, and idiocy is almost unheard of. Strabismus is very rare. Narrowing of the lids from chronic conjunctivitis is common in old people. Corneal ulcerations and opacities are not infrequent and occa-

sionally cataract is seen. Defect of the palate in a full-blooded Indian has never been seen and only one case of minor hare-lip was observed. Except syphilis and gonorrhea, diseases of the sexual organs are seldom indicated by any external sign, among those who approach or are approached by a physician. Notwithstanding the unhygienic condition of the Indians, neither gonorrhea nor syphilis is commonly attended by great destruction of tissues or by grave general consequences. Signs of hereditary syphilis in children are uncommon. Syphilis in the Indians affects the bones as it does in the whites; therefore, if syphilis existed before the Spaniards reached this country, signs of it should be at least occasionally discovered in the ancient burials. But the bones of the old burial places are, as a rule, free from any sign of the disease; and this is true of the bones from ancient graves in California, northwest coast and other localities, exclusive of some mounds. It is difficult to see, if the disease existed before the whites came, how, with the well-known wide intercourse among the Indians, whole great regions could escape it. It may be remarked that it is also absent in the older burials from Peru and other localities in South America.

Ultimate Fate of Tetany Patients.—At a meeting of the Vienna Medical Society, January 25, von Frankl-Hochwart reported the results of recent investigation into the present condition of all the patients with tetany whom he has had under his care. He was able to learn the fate of 55 out of the total 160. Eleven had died, their lives considerably shorter than the average for their circumstances and occupations. It is possible, he thinks, that the tetany may have induced a constitutional weakness which rendered the subjects less resistant to mild infectious diseases. Of the remaining 44, letters were received from 7, and 37 were personally examined. Only 14 of the entire number are healthy, with 4 only partially so; 19 present tetanoid conditions, some exhibiting a kind of chronic debility suggesting myxedema, and 7 suffering from recurring tetany, the attacks coming on most frequently in the winter months. In none of the cured cases is there enlargement of the thyroid, but it is frequent among the others. One of the tetany patients has a child who also exhibits tetany. His experience has been that the epidemics of tetany occur during a few years at a place and then subside to crop up somewhere else. He preaches that the prognosis of tetany is not so favorable as generally taught, the ultimate findings in his 55 cases having materially modified his views. The *Wien. klin. Wochsft.* for February 8 contains a report of the meeting.

Fatal Suprarenal Hemorrhage from Sunstroke.—Prof. A. Sodré of Rio has been making a special study of "thermic fever," "febre de calor" as he calls it, the result of sunstroke or heat-stroke. On several days in last December there were as many as 10 cases a day at Rio de Janeiro. The autopsy findings in one case, reported by S. Moniz in the *Revista Medico-Cirurgica do Brazil* for December, showed that death was due to hemorrhage from the suprarenal capsules. The patient was a man of 30, working out of doors when overcome by the heat. His temperature was 41.6 C. (107 F.) and he was in convulsions when first seen. General asthenia and intense thirst continued for four days, the heart action weak but distinct, no albumin or sugar in the urine. Slight improvement was noted the fourth day, but the patient died suddenly while at stool. The viscera were found comparatively normal with the exception of the suprarenal capsules which had ruptured from the pressure of a large hemorrhage.

Queries and Minor Notes

HLAGER'S CORYZA REMEDY.

A correspondent asks about Hlager's coryza remedy. Olfactorium antilactarholum (Hlager) is no doubt the preparation intended. A small wide-mouth vial is filled one-third full of the following solution:

| | |
|----------------|-----|
| R. Phenolis. | |
| Alcoholis. | ss. |
| Aque ammoniac. | ss. |
| Aque dest. | ss. |

The vial is then filled with a plug of cotton for inhalation in coryza, catarrh, and similar affections.

State Boards of Registration

COMING EXAMINATIONS.

MAINE State Board of Registration of Medicine, City Building, Portland, March 13. Secretary, Wm. J. Maybury, Saco.

CONNECTICUT Medical Examining Board, City Hall, New Haven, March 13-14. Secretary, Charles A. Tuttle, New Haven.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, March 13-14. Secretary, Edwin B. Harvey, Boston.

Alabama Report.—Dr. W. H. Sanders, chairman of the State Board of Medical Examiners of Alabama, reports the written examinations held by the county and state boards of Alabama during the year 1905. The number of subjects examined in was 10; number of questions asked, 6 to 10 in each branch or subject; percentage required to pass, 75. The total number of candidates examined was 154, including 14 non-graduates, of whom 131 passed and 23 failed, including 1 osteopath. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|---|---|------------|-----------|
| Medical College of Alabama, (1903) 92; (1904) 78, 81, 82, 83, 92; (1905) the grades of 75, 80 and 81 were reached by one each, 82 and 83 by two each, 84 and 85 by one each, 86 by five, 87 by three, 88 by two, 89 by three, 92 and 93 by two each, and 95 and 98 by one each. | | | |
| Leonard Med. Coll. | (1905) 76, 82, 83 | | |
| Chattanooga Med. Coll. | (1902) 80; (1905) the grade of 76 was reached by three, 82 by one, 83 by two and 84 and 85 by one each. | | |
| Memphis Hosp. Med. Coll., (1899) 82; (1904) 88; (1905) 78, 83, 93. | | | |
| College of P. and S., Atlanta | (1905) 76, 83, 87, 88 | | |
| Vanderbilt University | (1890) 84; (1905) 84, 84, 85, 85 | | |
| Birmingham Med. Coll. | (1905) 80, 85, 85, 87, 88, 91, 91 | | |
| Meharry Med. Coll. | (1905) 76, 78, 78, 82, 83, 86, 86 | | |
| Grant University | (1905) 79, 86 | | |
| Knoxville Med. Coll. | (1901) 79 | | |
| University of the South | (1904) 82; (1905) 83, 90, 91 | | |
| Cornell University | (1905) 89 | | |
| University of Virginia | (1897) 87; (1903) 86; (1906) 85, 89 | | |
| University of Missouri | (1904) 88 | | |
| Rush Med. Coll. | (1889) 91; (1904) 86 | | |
| Louisville Med. Coll. | (1885) 75; (1888) 88, 88; (1905) 86, 90 | | |
| Louisville Hosp. Med. Coll. | (1905) 92 | | |
| Baylor Med. Coll. | (1905) 76 | | |
| University of Nashville | (1905) 84, 85, 90, 91, 92, 92 | | |
| University of Louisville | (1904) 84; (1905) 86 | | |
| Tulane University | (1905) 75, 75, 82, 88, 90, 96 | | |
| Johns Hopkins University | (1905) 88 | | |
| College of P. and S., New York | (1905) 90 | | |
| Baltimore Med. Coll. | (1905) 90 | | |
| Kentucky University | (1905) 88 | | |
| Marshall Med. Coll. | (1905) 82, 85 | | |
| Chicago Homeo. Med. Coll. | (1905) 80 | | |
| Beach Med. Institute, Indianapolis | (1886) *83 | | |
| Kentucky School of Med. | (1888) 79 | | |
| Hering Med. Coll. | (1898) 77 | | |
| University of Pennsylvania | (1905) 89 | | |
| Jefferson Med. Coll. | (1904) 91 | | |

FAILED.

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|---|--------------------------|--|
| Chattanooga Med. Coll. | (1901) 65; (1905) 71, 71 | |
| Memphis Hosp. Med. Coll. | (1902) 69 | |
| University of Nashville | (1901) 62, 73 | |
| Louisville Med. Coll. | (1891) 70 | |
| Medical College of Alabama | (1905) 68, 72 | |
| Meharry Med. Coll. | (1905) 61, 61 | |
| Rush Med. Coll. | (1905) 70 | |
| Atlanta Med. Coll. | (1892) 61 | |
| College of P. and S., Keokuk | (1891) 65 | |
| University of Tennessee | (1901) 68 | |
| Barnes Med. Coll. | (1885) 70 | |
| Georgia Coll. of Pol. Med. and Surg. | (1897) 22 | |

* This school merged with Indiana Eclectic Med. Coll. in 1886.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending March 3, 1906:

Kirkpatrick, Thos. J., asst.-surgeon, granted thirty days' leave of absence. Reported for treatment at Army General Hospital, Washington Barracks, D. C.

Thorp, Charles W., contract surgeon, returned to Fort Ethan Allen, Vt., from sick leave.

Enders, William J., contract surgeon, left Fort Morgan, Ala., on leave of absence for one month, ten days.

Wall, Francis M., contract surgeon, left Fort Oglethorpe, Ga., on leave of absence for eight days.

Whitney, Jacob C., dental surgeon, left Fort Wright, Wash., for duty at Fort Stevens, Oregon.

Ware, William H., dental surgeon, returned to duty at Fort Logan, Colo., from leave of absence.

Long, Charles J., dental surgeon, left Fort Saelling, Minn., for duty at Fort Harrison, Mont.

Rietz, Huzo C., dental surgeon, left Fort Sheridan, Ill., for duty at Fort Thomas, Ky.

Balley, Edward, contract surgeon, granted leave of absence for four months.

Long, Stephen M., contract surgeon, granted leave of absence for one month.

Stuckey, Harrison W., contract surgeon, returned from temporary duty at Fort Assiniboine, Mont., to Fort Snelling, Minn.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending February 3, 1906:

Feld, J. G., ordered to the Bureau of Medicine and Surgery, Navy Department.

Chappellear, F. D., acting asst.-surgeon, appointed acting assistant surgeon from Feb. 28, 1906.

Nash, F. S., surgeon, detached from the *Oregon* and ordered to the *Rainbow*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Feb. 28, 1906.

Pettus, W. J., assistant surgeon-general, granted leave of absence for one month, from March 1.

Marquardt, G. M., surgeon, on expiration of leave of absence to proceed to Portland, Ore., and assume duties of the service.

Nydegger, J. A., P. A. surgeon, to proceed to Perth Amboy, N. J., for special temporary duty, on completion of which to rejoin station at Stapleton, N. Y.

Cofer, L. E., P. A. surgeon, granted one day leave of absence under Paragraph 189 of the Regulations.

Korn, W. A., P. A. surgeon, granted leave of absence for fourteen days from March 2.

Long, J. D., P. A. surgeon, granted seven days' leave of absence in December, 1905, under Paragraph 191 of the Regulations.

Burkhalter, J. T., P. A. surgeon, on being relieved by Asst.-Surgeon R. D. Spratt to proceed to Ellis Island, N. Y., reporting to the medical officer in command for duty.

Spratt, R. D., asst.-surgeon, relieved from temporary duty at Mobile, Ala., and directed to proceed to Brunswick quarantine station and assume command of the service, relieving T. A. Surgeon J. T. Burkhalter.

Delgado, J. M., asst.-surgeon, granted four days' leave of absence from February 13, under Paragraph 210 of the Regulations.

Kurtz, W. E., acting asst.-surgeon, granted leave of absence for thirty days from January 1 on account of sickness.

Richardson, N. P., acting asst.-surgeon, granted leave of absence for fourteen days from January 27, on account of sickness.

Safford, M. V., acting asst.-surgeon, granted three days' leave of absence from February 17, under Paragraph 210 of the Regulations.

O'Gorman, T. V., pharmacist, relieved from duty at New Orleans, La., and directed to proceed to Memphis, Tenn., reporting to the medical officer in command for duty and assignment to quarters.

Scott, E. B., pharmacist, granted two days' leave of absence from February 21, under Paragraph 210 of the Regulations.

BOARD CONVENED.

Board convened to meet at the Bureau, Washington, D. C., February 24, for the purpose of making a physical examination of an officer of the Revenue Cutter Service. Detail for the board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon J. W. Trask, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended March 2, 1906:

SMALLPOX—UNITED STATES.

California: Los Angeles, Feb. 10-17, 5 cases; San Francisco, 12 cases.

Delaware: Wilmington, Feb. 17-24, 2 cases.

District of Columbia: Washington, Feb. 10-24, 9 cases, 1 death.

Florida: Jacksonville, Feb. 17-24, 5 cases.

Kentucky: Covington, Feb. 15-22, 1 case.

Louisiana: New Orleans, Feb. 17-24, 11 cases.

Maryland: Baltimore, Feb. 17-24, 7 cases.

Massachusetts: Boston, Feb. 17-24, 1 case.

Michigan: Ann Arbor, Feb. 17-24, 1 case.

Ohio: Cincinnati, Feb. 16-23, 2 cases.

Tennessee: Memphis, Feb. 17-24, 8 cases, 1 death.

Virginia: Petersburg, Feb. 1-26, 17 cases.

Wisconsin: Appleton, Feb. 17-24, 2 cases; Green Bay, 3 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, Jan. 6-20, 16 cases.

Canada: New Brunswick: Kings County, Feb. 18, present; Queens County, present; Sanbury County, present; York County, present; Toronto, Feb. 10-17, 2 cases; Winnipeg, 1 case.

Chile: Iquique, Jan. 20-27, 4 deaths.

China: Shanghai, Jan. 13-20, 1 case, 1 death.

Endador: Guayaquil, Jan. 28-Feb. 4, 5 deaths.

France: Paris, Feb. 3-10, 11 cases.

Gibraltar: Feb. 4-11, 5 cases, 2 deaths.

Great Britain: Bristol, Feb. 3-10, 1 case.

Greece: Athens, Jan. 22-Feb. 1, 3 cases.

India: Bombay, Jan. 23-30, 16 deaths; Calcutta, Jan. 13-20, 55 deaths; Karachi, Jan. 21-28, 9 cases, 3 deaths; Madras, Jan. 20-26, 22 deaths; Tancong, Jan. 13-20, 38 deaths.

Italy: General, Feb. 1-8, 1 death; Rome, Dec. 16-23, 1 death.

Russia: Moscow, Jan. 20-Feb. 3, 12 cases, 1 death; Odessa, Feb. 3-10, 23 cases, 1 death; St. Petersburg, Jan. 27-Feb. 3, 4 cases, 3 deaths.

Spain: Barcelona, Feb. 1-10, 5 deaths; Seville, Jan. 1-30, 11 deaths.

Turkey: Alexandretta, Jan. 27-Feb. 3, 20 cases, 4 deaths; Constantinople, Jan. 28-Feb. 11, 11 cases.

YELLOW FEVER—FOREIGN.

Cuba: Habana, Feb. 11, 1 case.

Endador: Guayaquil, Jan. 28-Feb. 4, 9 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Jan. 13-20, 43 deaths; Madras, Jan. 20-26, 2 deaths.

PLAGUE—FOREIGN.

India: General, Jan. 13-20, 4,652 cases, 3,938 deaths; Bombay, Jan. 23-30, 62 deaths; Calcutta, Jan. 13-20, 32 deaths; Karachi, Jan. 21-28, 7 cases, 6 deaths; Madras, Jan. 20-26, 3 deaths; Tancong, Jan. 13-20, 23 deaths.

Russia: Province of Astrachan, Dec. 25-Jan. 2, 8 cases, 5 deaths.

Medical Organization

Good Conditions in Texas.

DR. DAVID R. FLY, Amarillo, Texas, one of the councilors of the State Medical Association of Texas, under date of February 23, writes:

"I find that Dr. McCormack's system of holding public meetings is a marvelous success. I find that the securing of the interest and co-operation of the intelligent laymen to be a strong factor in the lining up and settling of local animosities among the profession. It is remarkable how quick the intelligent public seem to grasp the situation and declare themselves ever ready to lend their support and co-operation in all of our legitimate reforms. I have been very agreeably surprised in the amount of interest and sympathy shown to me in the trials and tribulations of my councilor work by the thoughtful and progressive laymen."

Judging from newspaper clippings that have been sent us from Dr. Fly's district, he is one of the active councilors and is doing much good, not only in organizing societies in his district but in stimulating them to active work. He follows the lead of Dr. McCormack in having meetings to which the public is invited, which are evidently doing good, developing a better feeling between the public and the profession. Undoubtedly this is an excellent thing to do. What is needed to-day is for the profession and the public to get closer together, and for those who write in the newspapers on medico-sociologic subjects to know more of what the profession is doing. One of the best ways to bring about this better feeling is by having these open meetings, allowing some one to represent the public on the program.

Society Proceedings

BOSTON MEDICAL LIBRARY MEETING.

Held Feb. 14, 1906.

DR. GEORGE W. GAY in the Chair.

The Sanitary Hygiene of the Japanese Army.

CAPTAIN CHARLES LYNCH, Asst. Surgeon, U. S. A., was assigned as medical observer in the recent Russo-Japanese war, and was with the Japanese eleven months, both in Japan and in Port Arthur. He described the organization of the Japanese army, with its active force, in which each man serves three years, and its reserve force. There is a ministry of war with several departments, of which the medical department is one, co-ordinate with the others. The unit is the division. Usually there were three divisions to an army. Each division maintained its communications with home when in the field. There is no quartermaster's department. The system proved a good one in war. Large numbers of men were sent forward at once, fully equipped.

The medical personnel consisted of military surgeons, men who make a specialty of the subject and who make preparations for war in time of peace. These are on the active list, and ten are assigned to each regiment. This is too many for times of peace, but not enough for war. Therefore, there is a reserve medical staff. These men must have seen actual service, but practice at their homes, except during the maneuvers held regularly every year. These reserve medical officers did well. At the outbreak of the war the active list were assigned to administrative duties. The demand for reserve men was so great that civilians were needed. These men passed an

examination and a service of four months in a hospital. They were to be employed in hospitals only, but this was not always possible, and hence their service was not wholly satisfactory. Reasons for this were that they asked for things not usually provided, were not hardened to camp life and were not respected by the troops as were the regular active and reserve surgeons. In spite of this large medical staff located at the front, along the lines of communication and at the bases, there were not enough.

The surgery of Japan is not strictly up to date. There is no great need of it. Japanese medical students rarely study surgery abroad, but they do give much attention to pathology and bacteriology. The surgeons always do things the easiest way. Confusion reigns in the operating rooms. They make large use of the microscope, however, and use medicines freely. By the offer of a good salary they try to attract to the regular active list good men, and they are given adequate rank to secure a right to their opinions. At the head is a surgeon with the rank of lieutenant general. The chief executive is a major general, being one of three in an army. Thence on down the surgeons of a regiment rank as captains. Each of these men must have spent at least one year in the Army Medical School. Here they are encouraged by special courses to become specialists along some particular line. They are allowed to do some outside work as consultants. Promotion is partly by selection. The reserve surgeons are promoted on proof of ability. They are about the equals of their brethren in civil life.

Apothecary officers are graduates of a college of pharmacy. Their highest rank is colonel. There were large numbers of them in the war and they did good work.

There is no hospital corps. At home civilians are hired. In the regular army, men are instructed in hospital work in each company. These soldiers were the chief nurses and they were well disciplined, though not much trained. They did well at the first. Female nurses are practically confined to the Red Cross. Some regular officers were detailed to attend to matters requiring immediate expenditure, among them being a few line officers. In time of peace four men in each company are trained as bearers.

The Red Cross of Japan, which renders voluntary aid, is the best in the world. It has over a million supporters and an income of more than 8,000,000 yen. It furnishes mainly personnel and not materials. Its work is wholly at the bases and along the lines of communication, hospital ships, etc. Each relief detachment consisted of two physicians, one pharmacist, two chief nurses and twenty nurses or attendants. There were 152 such detachments, thirty-two being along the lines and in Korea, thirty-eight in the great army hospitals and the rest scattered. At the end of 1905 they had 4,700 male and female nurses and attendants and had expended over \$2,500,000. Their nurses are the best in Japan, though not equal to ours.

The Ladies' Volunteer Nurses' Association supplemented the Red Cross. Germany, too, aided. Much medical advice by prominent men in the profession outside of the army was offered free and gladly accepted. Many men, professors in the medical schools and of like standing, acted as consultants.

All matters pertaining to the health of the army, whether sick, wounded or apparently well, were made subjects of strict rules. Most of the medical supplies were prepared at Tokio, sent to Dalny and thence forwarded. The quality was carefully inspected and noted, being determined by frequent analyses. Transportation was ably maintained. Hospital buildings were erected very rapidly. Contracts for such buildings are made with all the specifications to be fulfilled if they are needed and only two or three days are necessary, therefore, for their practical completion.

The Japanese appreciate the importance of hygiene, and public sentiment supports the enforcement of strict rules. Whoever comes home from the front suffering from a preventable disease is disgraced. They maintain three requirements—physical fitness, education and supervision. The physical standard is high, yet few are rejected.

Sanitary instruction of officers is not necessary. They are all informed, having learned in schools and colleges. A pamphlet, "Health Rules for the Use of Soldiers in Time of War," is provided for the common soldiers, three or four to every company. They are told of the risks and an appeal is made to

their patriotism. There are directions as to cleanliness, physical training and exercise. They have a hard drill, including much running. Special training in sanitation is given the officers, who have executive functions in these matters as well as advisory ones. The division chief surgeons are the real chief inspectors. The army chief surgeons follow them up and civilian specialists are often called in. Boards of health are established, who seek to rid the army of the unfit. Even field hospitals are equipped with microscopes and laboratories far toward the front. Typhoid fever was less common and dysentery more frequent. There were many diseases common among the Chinese of Manchuria, like cholera and malaria, which were thus kept out of the Japanese camps.

The soldiers were well fed. Rice was the bulk of the ration, being brought from Japan. Little meat, plenty of fruit, sometimes barley in place of rice, some saké and tobacco—the total ration being capable of 2,580 calories. The army is better fed than the people at home. Good water is always sought, analyzed frequently, both chemically and bacteriologically, and in a great majority of cases is boiled before being used—sometimes twice boiled. This boiled water was conveyed in carts holding sixty liters, two for each company. Some use was made of special tablets for purifying the water, but unsuccessfully. More valuable were filters, by which means they did do something in cutting out bacteria. Once the water supply was selected, every unauthorized person, whether native or soldier, was kept away from it.

In the barracks earthen jars were provided for the dejecta, regularly cleansed. In Manchuria large pits were provided. The Chinese were everywhere very filthy. The habits of the Japanese were good. Saké rarely made them drunk. There was little license. Bathing was common. They took good care of their feet, though their shoes were very bad. The best of rules were made and enforced. A monthly physical examination of the soldiers was made. They tried to prevent the water-borne diseases and were most successful. Such patients were isolated to avoid contact as carefully as if they had smallpox. They were screened, carbolic acid was used freely, and also antiseptics for hands and dishes. Special precautions to keep flies from meats and from bedpans were taken. As fast as necessary they were sent back toward the base.

Typhoid fever and dysentery are endemic in those regions, but the Japanese had only one-sixth as many cases as the Russians. This, too, in spite of the fact that they made large use of the Chinese houses. Infection from urine was not considered or proved to be of great importance. There was a constant use of creosote pills, the boxes of which were marked: "To defeat the Russians, take one pill three times a day." Typhus is always present in Manchuria and was isolated in the same way. Beriberi was the great and terrible scourge of the Japanese. Much study was devoted to it and three different germ causes were discovered. None of them was proven to be the cause. It is not promoted by any special diet, but seems to be like typhus, taking its origin in crowded conditions. It was the cause of 40 to 50 per cent. of all the sickness in the army, and often preceded other diseases. Smallpox was rare because of compulsory vaccination. This is done in Japan within 100 days of birth, at the age of 12 or 13 and again at time of conscription. Two or three attempts are required, if necessary. In 1905 a general revaccination was practiced. Japanese virus is good.

Tuberculosis was common. It spread because they do not use modern methods of sanitation for its treatment. Diphtheria was not rare, but there was no measles, mumps nor scarlet fever. Recurrent fever occurred only rarely and was isolated. Erysipelas and tetanus were even rarer. Leprosy is frequent in Japan, but was not met in the army. Influenza was common, but not severe. Manchurian fever seems to be a combination of influenza and typhoid. Influenza was not isolated. Cerebrospinal fever and malaria were rare. There were few venereal cases. Prostitutes were segregated and regularly examined, as in Japan. Trachoma, so common in Japan, was not met in the field. As a whole, the medical department did remarkably well. The records made are very complete and sometime they may be given to the world.

In December, 1905, it was reported that so far in the war there had been killed in action 43,219; wounded in action,

153,673; missing, 5,081; injured not in action, 16,456; sick or died from sickness included 203,207, with 17,860 cases of contagious diseases besides. This makes the disability from wounds and from disease about equal—a very remarkable result.

The medical methods employed are much like ours. They are prone to allow patients to sit up, which was especially bad for the beriberi hearts. The mortality from typhoid was 7 to 10 per cent.; from dysentery, 15 to 17 per cent. Most of the wounds were from rifle balls, though the number from shells, especially shrapnel, was unusually large. Hand grenades, too, were the causes of many terrible wounds. Bayonet wounds constituted not even 1 per cent. of the total. The proportion of killed to wounded was as 1 to 4, and of the wounded 16 per cent. died. Bone wounds suppurated almost invariably. They had a bad "first aid" package—compresses were small, the bandage was insufficient and the cloth cover was not impervious to water. There were few deaths from primary hemorrhages, but many frost-bites. To summarize: Their success seems due to good diagnosis, Red Cross aid, medical skill, prompt aid, no confusion, good preparation in time of peace, large personnel, free expenditure of money, good hygiene and readiness to learn by experience.

NEW YORK PSYCHIATRICAL SOCIETY.

Regular Meeting, held in New York, Dec. 6, 1905.

Insanity as a Result of Hysterotomy and Oophorectomy.

The paper on the above subject, read by Dr. Graeme M. Hammond, New York, appears in this issue of THE JOURNAL, pages 713 and 714.

DISCUSSION.

DR. G. H. KIRBY, said that he has seen eight cases in which the psychoses seemed to be more or less directly connected with operations on the generative organs. In four of these cases it was impossible to determine whether the ovaries had been removed; in the remaining four they were undoubtedly removed.

DR. A. MEYER doubted whether it is wise to say that only congenital conditions predispose to the psychoses since it is probable that individuals with a fair start in life can undergo constitutional changes which will predispose to a mental breakdown. As a rule, the nature of the psychoses correspond to the constitutional make-up of the individual.

DR. M. C. ASHLEY thought that it is impossible to state definitely that the psychoses in any given case is the result of an operation. He has seen a number of instances of insanity which were attributed to operations on the reproductive organs, and he has also seen many operations performed that were not followed by a psychosis. On the other hand, profound mental shock has been attributed as a cause of psychosis. Why then, says Ashley, should not all patients sustaining similar shocks and patients operated on, develop a psychosis unless there is some inherent weakness or predisposition to insanity in those who do become insane.

DR. L. P. CLARK thought that the occurrences of insanity after operation indicates the existence of a primary constitutional defect, and that the exhaustion, fatigue, and worry previous to the operation can not be regarded in any other light than as exciting factors of insanity.

DR. C. F. MACDONALD coincided with the position taken by Dr. Hammond with reference to the etiologic importance of heredity in these cases. He thinks that it is rare, indeed, that a surgical operation of so serious a nature as oophorectomy causes insanity, except in individuals who have an unstable mental and nervous organization, whether inherited or acquired. Only in exceptional cases does insanity follow surgical operations or severe injury, even injuries of the head. Physicians are too much in the habit of seeking for some incident in the life of the individual which may be assigned as the cause of the mental disorder. MacDonald says that he always looks for predisposing and not exciting causes. Alcohol, for example, rarely causes insanity, except in persons who are predisposed thereto. There must be a predisposition to the disease before the so-called exciting causes can become operative. The only way in which exciting causes can become operative is by under-

mining the general health and thus bringing about a condition of malnutrition of the brain which predisposes the individual to a true psychosis.

DR. W. HIRSCH does not think that the ovaries have any physiologic function, except the sexual function; hence removal of the ovaries can not produce insanity any more than any other operation can. Of course, the shock following oophorectomy may be much greater than that following other operations, but the psychosis following it holds that traumatic psychosis is a clinical entity, one which can be diagnosed readily. He agreed with the previous speakers that a perfectly normal brain can not acquire psychosis after any operation, unless it is an organic trauma to the brain, or that there exists a previous disposition to psychosis. He did not agree with Dr. Hammond that a normal man can ever become a paranoiac. The mind of a paranoiac never was a normal one, even if the paranoia did not manifest itself in early life.

DR. E. A. MACDONALD is convinced that operations on the uterus or ovaries have very little specific importance in the production of insanity. He has seen a few cases of postoperative insanity, but in these cases the insanity was due to the shock incident to the operation.

DR. A. M. HAMILTON agreed with the essayist and the previous speakers. He thinks that the profession has a duty to perform, that of educating or at least cautioning those members of the profession who not only wrongly associate neurosis and actual organic diseases, but psychosis as well, with various bodily ailments and defects.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Treatment of Eczema.

A correspondent writes that he has a patient, otherwise healthy, who is afflicted with eczema, but he does not state the variety.

INTERNAL MEDICATION.

In acute eczema—blue mass or compound cathartic pill, followed next morning by a saline laxative. Natural mineral waters are useful, such as the Hathorn, Carlsbad, Hunyadi Janos or Friedrichshall. When both iron and the sulphate of magnesium are indicated the following may be used:

| | | |
|-----------------------------|------|-----|
| R. Magnesii sulph. | ʒiii | 60 |
| Acidi sulphur. dil. | ʒiii | 8 |
| Ferri sulph. | ʒss | 65 |
| Sodii chlor. | | |
| Tinct. card. comp. ʒā. | ʒi | 4 |
| Aque dest. | Oss | 250 |

Filtera. Sig.: A tablespoonful before breakfast in a tumblerful of cool or hot water.

In case of renal derangement diuretics are indicated, and in gouty cases, colchicum and Vichy water.

When both diuretics and alkalies are indicated the following may be used:

| | | |
|-------------------------|-------|-----|
| R. Magnesii sulph. | ʒss | 15 |
| Magnesii carb. | ʒi | 4 |
| Tinct. colchici | ʒss | 2 |
| Olei menth. pip. | m. ii | 12 |
| Aque dest. | ʒvi | 180 |

LOCAL MEDICATION.

The following is a useful lotion:

| | | |
|----------------------------|-------|-----|
| R. Acidi carbolic. | ʒii | 265 |
| Zinci oxidi | ʒi | 4 |
| Glycerini | ʒiii | 8 |
| Aqua calcis q. s. ad. | ʒviii | 240 |

In this formula, when carbolic acid does not act favorably, dilute hydrocyanic acid may be substituted. Tragacanth mucilage may be used instead of glycerin, or both may be omitted and half the amount of lime water may be replaced by an equal quantity of elder-flower water.

| | | |
|--------------------------------|--------|-----|
| R. Acidi hydrocyanic dil. | 3ss ii | 2-8 |
| Zinci oxidi | | |
| Calamin. aa | 5i | 4 |
| Aque calcis | | |
| Aque sambuci, aa. | 3iv | 120 |

Or:

| | | |
|--------------------------|--------|-----|
| R. Acidi carbolicæ | 3ss ii | 2-8 |
| Bismuthi subnit. | 5i | 4 |
| Pulv. tragacanth. | gr. xl | 2 6 |
| Aque calcis | 3viii | 240 |

WEEPING ECZEMA.

In the so-called weeping eczema the following is useful:

| | | |
|---|-------|-----|
| R. Tinct. opii | 3ss | 15f |
| Liquoris plumbi subacetatis dil q. s. ad. | 3viii | 240 |

To this may be added glycerin, boric acid to saturation, zinc oxid or other powder to be left on the skin as a deposit; or from half to one ounce of the tincture of camphor, if this drug is well borne and if a decided antipruritic effect is desired. A saturated solution of boric acid to which has been added 2 per cent. or more of glycerin or tragacanth mucilage is an excellent application in moist eczema and in the suppurating forms.

Hyde states that for the subacute and indolent stages mildly stimulating and stronger antipruritic lotions containing tar, carbolic acid, menthol, camphor, chloral and alcohol may be used, but that they should be tried cautiously and diluted at first. They generally give best results when applied for a few minutes at a time, several times a day.

In some acute inflammatory cases, Lassar's paste gives good results:

| | | |
|----------------------|-----|-----|
| R. Zinci oxidi | | |
| Amyli, aa | 5ii | 8 |
| Petrolati | 3iv | 15f |

To this is generally added from 3 to 10 grains of salicylic acid.

Another paste which gives good results is Dühring's paste:

| | | |
|-------------------------------|-------|----|
| R. Zinci carb. | 5i | 4 |
| Acidi salicylici. | gr. x | 65 |
| Petrolati | 5ii | 8 |
| Cerat. plumbi subacetat. | 5vi | 24 |

Hyde and Montgomery recommend the following:

| | | |
|-------------------------|------|----|
| R. Bismuthi oxidi | 3ss | 2f |
| Vaselin | | |
| Olei olivæ, aa. | 3ss | 15 |
| Cere alb. | 3iss | 6 |
| Olei rosæ q. s. | | |

Stelwagon states that diachylon ointment, if well and freshly prepared, is soothing and mildly astringent, but that it is difficult to obtain a good preparation. If this ointment is not fresh, irritation often follows its application.

Unsalted Diet in Scarlet Fever.

Dufour, Pater and a number of other physicians have been studying the effect of restriction of salt in the diet of scarlet-fever patients. They find that it is well tolerated and protects against kidney trouble as well as a strict milk diet. If there is a tendency to albuminuria at first, it soon subsides. The children all increased in weight on the mixed unsalted diet as soon as the fever declined. The general impression was that the course of the disease was shortened and the patients rendered more resistant to intercurrent infections and complications. Guinon, in a discussion of the subject at the Paris Société des Hôp., February 8, stated that he made a practice of putting scarlet-fever children on raw meat, as well as those with slow-healing ulcerations, suppurations and necrosis. The raw meat seemed to exert a remarkably favorable action from the first, especially in the ulcerations that follow the phlegmons of scarlet fever or the necrosis of the palate. The so-called "unsalted diet" is not altogether without salt. A small, carefully measured amount is allowed and its elimination supervised.

Quinin and Arsenic in Syphilis.

Assuming that syphilis is a disease caused by a protozoön, Max Kahane of Vienna (*Wiener klin. therap. Wochft.*), suggests its treatment with the three most effective agents against protozoa: quinin, methylene blue and arsenic acid in suitable doses. The treatment, he suggests, would be appli-

cable only to the primary and secondary forms as active living spirochetes have not yet been demonstrated in tertiary syphilis.

Treatment of Snake Bites.

A correspondent in the *Münch. med. Wochft.* for January 2, writing from Vienna, describes the treatment of snake bites generally practiced in Austria. Elastic constriction is applied to the limb above the bite, and from 20 to 30 c.c. of a solution of chlorinated lime is injected into and around the wound. After it has been injected the ligature is removed and stimulants given, especially alcohol. One part of chlorinated lime is dissolved in twelve parts of water for the mother solution, which is diluted with nine parts water for the injections. The writer states that this treatment has repeatedly established its efficacy, especially for viper bites, although antivenin is always used when procurable.

The Indications for the Use of Digitalis.

Eichorst, in an abstract in *American Medicine*, states that the weakness of the cardiac muscle from any cause, whether due to disease of the cardiac valves, of the myocardium itself, chronic diseases of the respiratory organs, atrophic kidneys, acute infectious diseases or poisons, is the chief indication for the employment of digitalis. He disapproves, however, of the use of digitalis in fibrinous pneumonia and in uremia, except in that it improves the cardiac muscle and increases the excretion of urine. He prefers the powdered digitalis to all other preparations. He regards the cumulative action of digitalis as in a large part imaginary, although anorexia, nausea and vomiting may occasionally occur. In many cases before prescribing digitalis he sends the patient to bed and orders a milk diet, and within three days begins the use of digitalis. If for any reason the pulse rate falls below 60, he suspends the digitalis at once. The delirium which is occasionally noted after the administration of digitalis when given in edematous conditions he regards as due to autointoxication, the result of too rapid absorption of the liquid.

Silver Nitrate for Chronic X-Ray Ulcers.

Mr. W. C. Fuchs, a former x-ray operator, who has suffered for years with chronic ulcers caused by exposure to the x-ray in his business, suggests that we mention a few points in his experience for the benefit of others who may have failed to find relief. All other methods of which he could in any way learn were tried without more than temporary and partial benefit. Dr. H. Roberts, St. Louis, suggested to Mr. Fuchs the use of silver nitrate, in full strength, one drop being applied and allowed to spread over such an area as it would cover. Dr. Roberts had used this on his own hands with success, and Mr. Fuchs found it efficacious. Ulcers which had persisted for six years have healed and others are in process of healing. The skin is becoming normal. Mr. Fuchs does not know of this remedy having been tried by others. We believe that some others have tried it without such pronounced success. It may not be as efficacious for every one.

Treatment of Syphilis by Hypodermic Medication.

The treatment of syphilis by hypodermic medication, according to Campbell Williams, in the *Clinical Journal* (London), may be divided into the subcutaneous, intramuscular and intravenous methods. The advantages claimed for this method of treatment are, first, accuracy and regulation of the dose of mercury administered; second, rapidity of action; third, certainty of absorption; fourth, non-impairment of the digestive functions; fifth, the comparative freedom from the grosser forms of stomatitis; sixth, the mitigation of intestinal disturbances. According to some authorities the use of insoluble mercurial preparations has in some cases been followed within a few moments of the operation by pulmonary infarction. The explanation for this occurrence is probably made on the basis that the injection was intravenous rather than intramuscular, owing to the fact that the point of the needle penetrated within the vessel itself. Williams guards against this occurrence by taking the precaution of either plunging the needle in separately or detaching the syringe from the needle after it has been inserted in order to see whether or not any venous blood escapes through the needle before injecting the insoluble salt.

This procedure is after the experience of Gottheil, of New York.

According to the recorded experience of Lambkin, after the injections of 5,000 doses of metallic mercury suspended in the combined equal volume of lanolin and liquid paraffin no untoward results have followed.

Calomel is sometimes used hypodermically in the treatment of syphilis, although records vary to a great extent as to its usefulness. Some state that the effects of his preparation pass off quickly and that relapses are common after its use. The drawbacks to its employment, as stated by Williams, are the presence of pain after the injection; abscesses which may occur in about 1 per cent. of the cases, regardless of extreme precaution with the injection; swelling and induration of the parts in a day or two after the injection; nodes, varying in size from an olive to that of an orange. These nodes disappear, however, in a few weeks, as a rule, but some persist for six or even twelve months. Whatever may be the preparation used hypodermically, before starting on this method of treatment one should always ascertain whether or not his patient is a "bleeder," as a hemorrhagic diathesis is an absolute contraindication to mercurial injections, either owing to the formation of local hematoma or to the setting up of hemorrhage from the urinary tract. The state of the kidneys must be looked into, and if there is any evidence of the lack of proper elimination unusual care must be exercised in the administration of mercury in whatever form. This is especially the case when the mercurial preparation is introduced, either intramuscularly or intravenously, since the renal apparatus is the principal channel by which the mercury thus introduced is carried off. Consequently Bright's disease contraindicates the use of mercurial injection. The same rule holds good in the treatment of diabetic patients. The presence of tuberculosis is also a contraindication. The mouths of all patients should be carefully watched as soon as the treatment is begun, special care being given to the gums, as mercury frequently is blamed for conditions in the mouth for which it is not responsible.

INTRAMUSCULAR INJECTIONS.

According to this author, the intramuscular injection has supplanted the subcutaneous method. The most convenient location for the administration of the mercury is the gluteal region, using the right and left side alternately. The best location for the puncture should be above the level of the great trochanter, which is supposed to be the region of least sensation. The skin should be properly cleansed by antiseptic measures before the needle is introduced, but it should not be irritated more than necessary. The needle, of course, should be thoroughly sterilized immediately prior to its introduction by being held for a few seconds in the flame of a spirit lamp. After it has cooled it may be plunged into the muscle tissues at right angles until the proper depth has been reached. This depth, of course, varies with the amount of subcutaneous fat present, usually from three-quarters to one inch below the surface of the skin. The precautions above stated should be observed in the injection of the emulsions of the insoluble salts to see that the point of the needle is not engaged in the lumen of a vein. This is not so necessary when the soluble solutions are employed, since they may be injected intravenously without the danger of causing pulmonary intarction. (It might be added that it is absolutely necessary that air be entirely excluded from the barrel of the syringe before introducing the injection.)

After the needle is withdrawn the site of the injection should be gently pressed by the finger for a few moments and light massage given in order to diffuse the fluid in the tissues. The puncture wound is then sealed by means of antiseptic wool saturated in collodion.

The author enumerates quite a number of the preparations of mercury, the most important of which are as follows: The soluble preparations are hydrargyri lactas, hydrargyri succinate and of the insoluble mercury which should be administered in liquid paraffin, oleum olivæ or lanolin and liquid petrolati, the following are the most important: Metallic mercury, hydrargyri oxydum flavum, hydrargyri salicylate, hydrargyri tannate, hydrargyri benzoate, hydrargyri sublimatum. The lactate of mercury which is soluble in about 1 in 7 parts of water is one of the least irritating of all the mercurial

salts. It is recommended that it be instilled as an intramuscular injection in doses of from gr. 1/4 (.015) to gr 1/2 (.03). The author, however, speaks of one of its drawbacks, which is the rapidity with which it is eliminated from the body, consequently the injections must be frequently repeated. On the other hand it is to be recommended strongly on account of its safety and comparatively painless after-effects.

Metallic mercury is administered in the form of gray oil. The formula for making up this combination is as follows:

| | | |
|--------------------------------|--------|----|
| B. Hydrargyri (metallic) | .5ss | 2 |
| Unguenti hydrargyri | gr. ii | 12 |
| Liquidi petrolati | .3i | 4 |

M. Sig.: From 1 to 2 minims at a dose.

Lambkin recommends the following combination:

| | | |
|--|--------|----|
| B. Hydrargyri (metallic) | gr. xv | 1 |
| Liquidi petrolati (carbolyzed 2 p. c.) | .3iiss | 10 |

M. Sig.: Ten minims injected hypodermically once a week.

The yellow oil of mercury may be used suspended in oil, but the injections with this preparation are painful and no special advantage can be claimed for it. Gottheil recommends the salicylate of mercury as the best preparation in the treatment of syphilis hypodermically. He recommends the following combination:

| | | |
|---------------------------------|--------|----|
| B. Hydrargyri salicylatis | gr. xv | 1 |
| Liquidi petrolati | .3iiss | 10 |

M. Sig.: From 3 to 10 drops injected once a week or once every two weeks.

Gottheil claims that this is a non-irritant preparation and that only slight stiffness is noted on the day following the injection. He also claims that it is as effective as any of the insoluble salts of mercury. The benzoate of mercury is insoluble in cold water and is, therefore, classified as an insoluble salt. It may be given, according to some authorities, in the following combination:

| | | |
|--------------------------|-------|----|
| R. Hydrargyri benzoatis | | |
| Sodii chloridi, aa. | gr. v | 30 |
| Aqua dest. | .3i | 30 |

M. by dissolving with the aid of heat and then filter. Sig.: Ten minims once or twice a week.

In the use of calomel it is said that great pain not infrequently follows the injection. It is regarded by Williams, however, as the remedy *par excellence* for endarteritis and its sequelæ. It is given best by suspending it in sterilized olive oil, combined as follows:

| | | |
|------------------------------------|--------|----|
| R. Hydrargyri chloridi mitis | gr. v | 30 |
| Olei olivæ | .3iiss | 6 |

M. Sig.: From 10 to 15 minims introduced hypodermically.

The succinimid of mercury may be given as follows:

| | | |
|--------------------------|--------|----|
| R. Hydrarg. succin. | .5ss | 2 |
| Cocaine hydrochlor. | gr. x | 65 |
| Aqua dest. | .3iiss | 45 |

M. Sig.: Fifteen drops hypodermically twice a week.

Medicolegal

Presumption That Credit Was Given to Husband.

The Supreme Court of Alabama says that the evidence in *Montgomery Street Railway Co. vs. Smith*, a personal injury case brought by the latter party, a married woman, did not show whether the credit for the doctor's bill or medical attendance was given to the husband or to the wife, and in the absence of proof the presumption was that the credit was given to the husband, so that the wife would not be entitled to recover anything therefor.

Hysterical Condition of Witness.

The Supreme Court of Arkansas says that in the case of *Bueker vs. State*, a prosecution of the first named party for seduction, the defendant advanced as grounds for a continuance that the prosecuting witness (the seduced female) "had long been subject to some nervous malady causing hysterics or mental delirium, and had recently suffered an attack from same, and was not, at the time of calling of this case for trial, recovered from such attack; that the importance of the case would necessitate her remaining on the witness-stand an indefinitely long time, and undergo vigorous cross-examination,

which would excite the sympathy of the jurors for her and greatly prejudice the defendant's defense; that in fairness to him he ought not to be compelled to cross-examine the prosecutrix in her present physical condition." But, the court says, this stated no grounds for continuance of the case. The court could not assume in advance that the woman's physical condition, nor the character of the cross-examination of the defendant's counsel, would be such as to excite the sympathy of the jury and to prejudice them against him. If so, the fear of exciting sympathy for the wronged would forbid the courts from bringing to speedy trial persons accused of most any crime. Moreover, the determination of that question fell fairly within the sound discretion of the trial court, and as no abuse of it appeared the Supreme Court would not disturb its exercise.

Some Points from an Extended Litigation for Fees.

The Supreme Court of Missouri, Division No. 2, says, in the case of Logan vs. Field, that suit was instituted before a justice of the peace March 24, 1896, on an account for \$160 for services rendered the defendant by the plaintiff, as a physician. The plaintiff recovered, before the justice, judgment for \$160, the full amount of his claim. The defendant then took the case, by appeal, to the Circuit Court of Jackson County, where, on trial, *de novo* (anew) before the court and jury, the plaintiff again recovered judgment for \$160. From this judgment the defendant appealed to the Kansas City Court of Appeals, where the judgment was reversed and the cause remanded for further trial. Thereafter, on Nov. 17, 1901, the case was again tried in said Circuit Court, and the plaintiff recovered a verdict and judgment for \$50. After unavailing motions for a new trial and an arrest of judgment, the plaintiff appealed from this judgment to the Kansas City Court of Appeals, and thereafter, on his motion, that court transferred the case to this court, where the \$50 judgment is affirmed.

As to the facts in the case: The Supreme Court says that the plaintiff was a practicing physician, making a specialty of diseases of the nose, throat and ear. He had treated the defendant in the year 1890, and his bill for that service was paid. In October, 1892, the defendant applied again for treatment. The trouble he was suffering from in 1890 was different from that of 1892. In the first instance he had an enlargement or thickening of the mucous membrane or lining of the nasal cavity, of which the plaintiff cured him. In 1892 the plaintiff found that he was suffering from inflammation of the turbinate bone, together with inflammation of the frontal sinus. The plaintiff, hoping to relieve the inflammation, and successfully treat the disease without an operation, gave him the treatment sued for, telling him that he could not state whether a cure would be worked, and declining to guaranty that such cure could be effected.

It appeared from the plaintiff's testimony that the defendant was benefited; that the case grew better; that the treatment administered, to relieve the congestion in the canal leading to the sinus was successful, but that, from time to time, the defendant would catch cold and violently blow his nose, thus keeping up the inflammation which tended to close the connection between the sinus and the nasal cavity. The propriety and correctness of the treatment administered by the plaintiff was supported by several physicians, and the defendant's expert testified to the effect that the plaintiff had been pursuing correct practice in endeavoring to work a cure without performing an operation. Nor was there any contention on the part of the defendant that he had been in any way injured by the plaintiff's treatment, though he did testify that he did not think he was benefited thereby.

The result of the litigation is as above stated. The Supreme Court thinks that on the trial last appealed from the case was very fairly presented to the jury by the instructions taken altogether. Among the instructions given on behalf of the plaintiff one was that if the jury found and believed from the evidence that the plaintiff rendered the services sued for to the defendant and at his request, and that no price was fixed or agreed on, then the law implied a promise from the defendant to pay the plaintiff for such services what the same were reasonably worth, if anything; and that this was true with-

out regard to whether the treatment was beneficial to the defendant. Other instructions qualified the words "reasonably worth" by adding "according to the usual charges of the medical profession in this vicinity." Furthermore, the jury was instructed that, if the plaintiff knew that the disease from which the defendant was suffering was in the frontal sinus, and the plaintiff had reasonable cause to believe in the exercise of ordinary care and skill that the same would yield to treatment without an operation, then he had the right to treat the defendant for such trouble until such time as he became reasonably certain it was necessary to perform such operation; and he was entitled to recover for such services what the same were reasonably worth, if anything, without regard to whether the defendant was benefited by such treatment or not.

On the other hand, the jury was instructed, on behalf of the defendant, among other things, that the defendant had the right to expect good faith from the plaintiff, and to rely on the supposed superior knowledge of the plaintiff to discover, determine and advise what course should be pursued in his case. If the treatment sued for was worthless to the defendant, and if the plaintiff then knew, or ought as a man of his profession to have known, of the uncertainty or probable uncertainty of a cure of the defendant from the treatment administered, and the defendant went for and received such treatment, and was encouraged by the plaintiff to receive the same, or because the plaintiff failed to inform him of the uncertainty or probable uncertainty of a cure from such treatment, the verdict should be for the defendant. The plaintiff had no right, even if in the best of faith, to render service of no substantial benefit to the defendant and charge therefor, if he himself had doubt, or as a reasonably prudent and competent physician ought to have had doubt in his mind, of such service being a successful treatment of the defendant's trouble, unless he fully informed the defendant of such doubt, and the defendant, with such information of the uncertainty of the success of the treatment, afterward went for and received the same. If the trouble with which the defendant was suffering, and for which he sought the plaintiff's professional aid, was in the frontal sinus over the defendant's right eye, and an operation was then necessary to relieve the trouble of the defendant, and the plaintiff knew this, or could have known it by the exercise of reasonable skill and effort, then his treatment of the plaintiff was unskillful and improper, and he ought not to recover any amount in this action. The plaintiff could not recover for the service rendered in this case merely because he may have performed such service with the permission or even at the request of the defendant and avoided giving the defendant an express guaranty of a cure.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

February 24.

- 1 *Clinical Observations in Exophthalmic Goiter. G. Dock, Ann Arbor, Mich.
- 2 Neurosthenia Treated by Two General Physicians, One Homoeopathist, One Quack, One Osteopath, One Pregnant, Three Ophthalmic Surgeons, Two Gynecologists, One Diagnostician, One Neurologist, One Resident Sanitarium Physician, and One Refractionist. G. M. Gould, Philadelphia.
- 3 *Uses and Abuses of the Free Dispensary. R. G. Kevin, Philadelphia.
- 4 Relation of Acid Fermentation in the Stomach to Neurosthenia. J. W. Robinson, Freezeman, Me.
- 5 *Bacillus Choleræ, E. Fuller, New York.
- 6 Sanatorium Treatment of Tuberculosis. G. B. Kalb, Erie, Pa.

1. Exophthalmic Goiter.—Dock reports the results of his observations of 32 cases, 29 women and 3 men. The predisposing causes could rarely be discovered. In 12 of the patients previous diseases or nervous shock were noted a short time before the characteristic symptoms. In these cases goiter was the first symptom, but in 12 others a goiter was observed from three to thirty-seven years before the other symptoms came on. The thyroid gland was enlarged in all cases. In 26 a systolic murmur was audible over the thyroid. Tachycar-

dia was present in all but two patients, and in one of these it had been present before the observations began. Observations on the blood pressure showed striking differences. In some the pressure was high, up to 180 mm. Eye symptoms were absent in only three cases. Emaciation was a marked and striking symptom, in two cases amounting to almost or quite half the body weight. Diminution of hydrochloric acid in the stomach was observed in a number of cases, but hypermotility was often associated with this. Two of the patients died; one from complicating disease, the other with acute symptoms. Of the other cases, a number had chronic courses up to fifteen years. Emphasis is laid on the importance of the early diagnosis. Regarding treatment, rest is considered most important, with symptomatic treatment. Experience with some of the organic preparations and x-ray rays are mentioned. Surgical treatment is recommended, with certain limitations.

3. **Uses and Abuses of the Free Dispensary.**—Kevin believes that one reason for the abuse of the free dispensary lies in the fact that it is to the interest of those connected with the institution to have a large service, also that while dispensaries continue to afford practice, experience, and reputation to young and old doctors and "something for nothing" to the general public, the number of patients will not diminish and physicians will always be applicants for vacancies. He divides those who patronize free dispensaries into four principal classes: 1. Those able but not willing to pay; 2, those who, not knowing a specialist, want to find one without being compelled to pay a specialist's fee; 3, poor, suffering unfortunates, who, either by drink, misfortune, ignorance or poverty, are forced to avail themselves of a dispensary's charity, and 4, hypochondriacs, who find, or try to find, relief from their fancied ailments in the different departments of a hospital dispensary.

5. **Bacillus Chlorhydrici.**—Under this name Palier describes a microbe which he isolated from the human stomach and cultivated. It is a small, slender, rod-shaped bacillus having slight motility. Its isolation is very difficult. It is Gram negative and aerobic. Spores could not be detected. It is found in hyperchlorhydria and chlorhydria. Palier says that ordinarily this is not a pathogenic microbe, but a physiologic one, aiding digestion. Under adverse circumstances, however, the germ, in conjunction with yeast, may be an important factor in the causation of simple ulcer of the stomach.

Medical Record, New York.

February 24.

7 "Problems in the Treatment of Pneumonia. E. Le Fevre, New York.

8 "Bier Treatment by Hyperemia. M. Breuer, Buffalo, N. Y.

9 "Chronic and Periodic Vomiting. D. Roberts, Brooklyn.

10 "Etiology of Eczema. J. C. McGuire, Washington, D. C.

11 "A Few Suggestions in Reference to Consumption. L. Barkan, New York.

7. **Problems in Treatment of Pneumonia.**—Le Fevre declares that from the very beginning of the attack the physician's efforts should be directed toward controlling the toxemia and its effect. Care should be taken, however, that the treatment does not exhaust the patient. Unless contraindicated, Le Fevre uses saline cathartics freely during the early days of the disease. If the toxemia is exaggerated, the same external methods for causing sweating should be employed as those used in the treatment of acute uremia. He warns against the use of pilocarpin, but advises the use of hot drinks, liquor ammoniac acetatis, and citrate of potassium. As there is generally kidney irritation in this disease, abundance of water is indicated. If there is nausea and vomiting so that the administration of water by the mouth is restricted, enemata of normal saline solution should be substituted. Venesection is indicated in those cases in which the patient seems to be overstimulated by the toxemia. Fresh air is necessary, but cold is not an essential element of the open-air treatment. Le Fevre advises keeping the room at a temperature of 65 F. In cases in which there is pain, opium or one of its derivatives, as a rule, has the best effect. He condemns the tendency to resort to nitroglycerin in cases in which cardiac failure is suspected. He advises two classes of stimulants to be used in cases of loss of vasomotor control: 1. Those acting on the medullary centers—strychnin,

caffeine, atropin and cocaine; 2, those acting directly on the muscular tissue of the arterial system—digitalis, ergot and suprarenal extract. The action on the blood vessels of suprarenal extract of adrenalin chlorid is very rapid and energetic, but its effects are temporary. It should be used in the treatment of sudden vascular collapse. Le Fevre says that no case of pneumonia should be given up as lost until death actually takes place.

8. **Bier Treatment by Hyperemia.**—Breuer reviews a number of tuberculous cases treated by this method in Bier's clinic during sixteen months. In a long series of not selected cases the wrist showed a cure in 88 per cent., the elbow in 72 per cent., and the foot in 61.5 per cent. Breuer also discusses the application of this treatment to acute inflammatory conditions, such as tonsillitis, otitis media and tuberculous orchitis. Other affections suitable for treatment by hyperemia are septic wounds, fractures, arthritis, lymphangitis, hemarthrosis, neuralgia, neuritis and varicose veins.

9. **Chronic and Periodic Vomiting.**—Roberts discusses the difficulties that may attend the diagnosis of causation in chronic and periodic vomiting. He says that careful search of the entire body and all its functions may be necessary. He summarizes his deductions as follows:

1. Vomiting of a chronic type, following a gradually developed epigastralgia, from one-half to three hours after the ingestion of food, is attributable to peptic ulcer, gastric or duodenal.

2. Chronic vomiting that occurs from ten to fifteen minutes after food ingestion is attributable to stenosis of the cardia, nervous abnormality, cerebral lesion (occasional rather than chronic), or to protracted acute gastritis.

3. Copious vomiting ten or more hours after food ingestion indicates a muscular insufficiency; frequent repetition indicates a permanent lesion in the nature of a mechanical interference with the exit of food.

4. Vomiting in the night is particularly liable to occur in cholelithiasis, periodic hypersecretion, muscular insufficiency, and nervous abnormality.

5. Vomiting attempts when the stomach is empty indicate a cause other than a gastric lesion, either a reflex cause, a toxemia, a cerebral lesion, or a nervous abnormality.

6. Morning nausea and retching indicate either a beginning of pregnancy, alcoholism, pharyngitis, nephritis, or a nervous abnormality.

7. Periodic vomiting of clear gastric juice of normal or supernormal acidity in any considerable amounts indicates a secretory neurosis or an ulcerative lesion.

8. Vomiting as a sequel of headache, accompanied by severe nausea, but no gastric or abdominal symptoms, characterizes attacks of migraine; in a majority of cases eyestrain is the underlying cause.

9. Attacks of vomiting of sudden onset, with tinnitus, deafness, and vertigo, are attributable to disturbances of pressure in the internal or middle ear.

10. Periodic attacks of vomiting of sudden onset, associated with more or less severe gastric pain and nausea, retraction of the abdomen, obstinate constipation during but not preceding the attack, and freedom from abdominal tenderness, are suggestive of the spinal crises, idiopathic nervous vomiting, and lead poisoning.

11. Periodic attacks of vomiting after abdominal colic and constipation, with localized or general tympany, are suggestive of chronic intestinal stenosis.

10. **Etiology of Eczema.**—McGuire does not believe that gout, rheumatism and many other of the diseases referred to as factors predisposing to eczema have anything whatever to do either in causing the disease or in influencing it in any way after it has been established, only so far as any "run-down condition" of the general system makes the skin less resistant to irritation. Of course, some persons have skin that is susceptible to inflammation, which varies according to the nature of the irritant. McGuire believes that some time in the near future the term eczema will be limited to that form of cutaneous disease that is caused by some specific parasite acting on a vulnerable skin. He cites one case in which the tendency to the disease appeared to be transmitted to the offspring.

New York Medical Journal.

February 24.

12 Rheumatic Fever (Acute Articular Rheumatism). J. V. Shoemaker, Philadelphia.

13 "Cholecystectomy. J. F. Erdmann, New York.

14 Difficulties in Diagnosis and Operation in Diseases of the Biliary Tract. W. P. Carr, Washington, D. C.

15 Definition of Insanity. W. A. White, Washington, D. C.

16 Medicine at Oxford, 1906. H. B. Cane, New York.

17 Treatment of Joint Tuberculosis in the Open Air in a City Hospital. R. A. Hibbs, New York.

18 Acute Intestinal Obstruction—Mention of Illustrative Cases. E. W. Peterson, New York.

19 "Simultaneous Uterine and Extrauterine Pregnancy. H. N. Vinberg, New York.

20 Prostatal Albuminuria Not an Infrequent Cause of Error in the Diagnosis of the So-called Orthostatic, Postural, Physiologic and Cyclic Albuminuria. E. G. Ballenger, Atlanta, Ga.

13. **Cholecystectomy.**—Erdmann reports the results obtained in 27 cholecystectomies, complicated or not with other diseases and conditions, and draws attention to the fact that no waiting time for subsidence of infection, etc., was given any of these cases by doing a previous cholecystotomy, nor was local treatment advised. The worst cases of infection and most active invasions did fully as well, if not better, than those of lesser or practically no inflammatory activity.

Twenty-two of the 27 patients were females, the youngest being 27, the eldest 66. Four of the entire number were over 50 years of age. One was a male, aged 27. One patient gave a history of attacks from her tenth year, and one from her twelfth year. Five had histories of previous typhoid, about 20 per cent. of this series. In 10 no history of typhoid was obtainable, and 9 gave a negative history of typhoid. Two deaths occurred in this series, both in non-suppurative, but not in uncomplicated cases. The first patient, a woman, aged 40, a long-suffering patient whose condition was far below par, died from exhaustion in eight days. In this case it was necessary to do a choledochotomy for numerous stones in the common and hepatic ducts. The second patient was a male, aged 27, who vomited black matter after the operation from the moment he was placed on the cart in the operating room. He had 33 stones in a distended and elongated bladder, complicated with a diseased appendix containing 11 concretions. Typhoid bacilli were found in the bile.

Two pregnancies occurred, one five months, miscarriage in twelve hours after the operation. This woman had a temperature of from 99.5 F. to 104 F. for over a week previous to the operation. The other, who was in the seventh week of pregnancy, submitted to an operation for cholelithiasis and appendectomy without aborting. The appendix was removed in 16 out of the 27 cases, in several instances being markedly invaded. Eight patients had gangrene of one or more coats of the bladder. One was doubly perforated, contained two stones and a large abscess well walled off. In 5 cases the common and hepatic or both ducts were opened for stones. Although a history of jaundice was obtained in 12 cases, the jaundice in the remaining 7 is to be explained by the fact that stones were passed through the common duct before the operation in some of them, while in 2 or 3 pressure of exudate and distended bladder could be ascribed as the factor productive of jaundice. Twenty-two operations were for acute inflammatory conditions; all the patients recovered. One operation was for hydrops due to a large stone in the cystic duct, with another free in the bladder; one was done for a primary typhoidal perforation in the beginning of the sixth week of the disease, or rather the first week of convalescence. Erdmann describes his method of operating in detail.

19. **Simultaneous Uterine and Extrauterine Pregnancy.**—Vineberg reports two cases, both ending in recovery. He says that in every case of uterine miscarriage that shows abnormal symptoms, after the uterus has been emptied the probability of an associated extrauterine pregnancy should be considered, and likewise after an operation in a case of extrauterine pregnancy, should there be an undue persistence of uterine bleeding one ought to think of the probability of an associated uterine pregnancy that has been overlooked.

Boston Medical and Surgical Journal.

February 22.

- 21 John Hunter, J. G. Munford, Boston.
- 22 Stenosis of the Pylorus in Infancy. C. L. Scudder, Boston.
- 23 Home Sanatorium Treatment of Consumption. J. H. Pratt, Boston.
- 24 Cold Fresh-Air Treatment of Pneumonia. W. P. Northrup, New York.
- 25 New Gouge for Submucous Operations in the Nose. R. A. Coffin, Boston.

25. **New Gouge for Submucous Operations in Nose.**—Coffin has found his instrument particularly useful in removing cartilaginous and bone thickenings of the septum. The length of the instrument is five inches. (The original article must be referred to for a full description of the instrument.) The advantages claimed for this instrument are: (1) The rapidity with which thickenings under the mucous membrane can be removed; (2) safety; (3) rapid healing, with little or no crusting; (4) ease with which the broad, flat thickenings, which can not be engaged with the saw, can be removed.

Lancet-Clinic, Cincinnati, Ohio.

February 24.

- 26 Diseases, Diagnosis and Surgical Treatment of the Right Upper Abdominal Cavity. B. M. Rickets, Cincinnati.
- 27 Tuberculosis. P. C. Curry, Milford, Ohio.
- 28 When Prostatotomy Instead of Prostatectomy Is Indicated. C. E. Barnett, Ft. Wayne, Ind.
- 29 Migraine—Hemiparesis—Sick Headache. E. L. Mather, Akron.
- 30 President's Address, Delivered Before the Ohio Valley Medical Association, at Henderson, Ky. J. W. Stone, Henderson.

St. Louis Medical Review.

February 24.

- 31 Silver Therapy. S. S. Cohen, Philadelphia.
- 32 Rapid Cure of Eczema of Face and Head. G. Richter, St. Louis.
- 33 Further Examples of Corrupt Medical Nomenclature. A. Rose, New York.

Surgery, Gynecology and Obstetrics, Chicago.

January.

- 34 Common-duct Cholelithiasis; Its Symptoms, Complications and Treatment. A. W. M. Robson, London, England.
- 35 Lexer's Operation for Removing the Gasserian Ganglion. W. Van Hook, Chicago.
- 36 Acute Postoperative Dilatation of the Stomach. A. E. Halstead, Chicago.
- 37 Treatment of Placenta Prævia. E. P. Davis, Philadelphia.
- 38 Incisions of the Forearms at Cook County Hospital, Chicago. C. E. Reed, Chicago.
- 39 Diagnosis of Surgical Lesions of the Kidney. C. D. Lockwood, Los Angeles.
- 40 A Third Ovary. W. P. Mantou, Detroit.
- 41 Tumors of the Parotid in Children. C. G. Grulee, Chicago.
- 42 Tuberculosis of the Cervical Lymph-Nodes. D. N. Eisen-drath, Chicago.
- 43 Calcification in Gynecology. F. T. Andrews, Chicago.
- 44 *Modification of Kronlein's Trigeminal Operation. E. Lexer, Königsberg, Prussia.
- 45 Joseph Bacon's Dumb-bell Intestinal Anastomosis. B. Robinson, Chicago.
- 46 Progress of Liver Hemostasis. W. E. Schroeder, Chicago.
- 47 Treatment of Fractures of the Femur at the Cook County Hospital. C. Davison, Chicago.
- 48 *Retropertoneal Hernia. L. L. McArthur, Chicago.
- 49 Cesarean Section, with Questionable Indication. P. Findley, Chicago.
- 50 Technic of the Surgical Department of Cook County Hospital. C. P. Phenister, Chicago.
- 51 Obstetric Technic in the Cook County Hospital. H. F. Lewis, Chicago.
- 52 *Technic of the Longitudinal Wire Suture in the Closure of the Abdomen and in the Radical Operation for Hernia. M. L. Harris, Chicago.
- 53 Technic of Removal of the Breast and Axillary Glands. J. R. Murphy, Chicago.
- 54 Technic of the Andrews Operation for Hernia. E. W. Andrews, Chicago.
- 55 *Technic of Closure of Wounds by Removable Continuous Suture. C. Davison, Chicago.

42. **Tuberculosis of Cervical Lymphnodes.**—Eisendrath believes that sufficient attention has not been paid heretofore to the primary infection at the tuberculous cervical lymphadenitis. He makes it a practice to have every patient examined, if possible, before operation by a specialist as to the existence of diseased faucial tonsils, complicated or not by the presence of acenoids. Practical experience has convinced Eisendrath that there are cases of tuberculous cervical lymphadenitis which run a very acute course, so that cessation occurs within two or three weeks after the onset of the disease. He thinks that the majority of these cases are the result of an influenzal inflammation of the lymphnodes. He describes in detail the operative technic employed by him in these cases.

44. **Modification of Kronlein's Trigeminal Operation.**—In the method devised by Lexer, the cutaneous incision passes along the upper margin of the zygoma through the skin and temporal fascia. It begins anteriorly at the upper anterior zygomatic angle, close to the posterior margin of the fronto-sphenoidal process, ending posteriorly immediately in front of the temporal artery. It is necessary to cut this. In order to cut the zygoma the posterior angle of the wound is pulled and a needle armed with a chain-saw is passed around the zygomatic process of the temporal bone. The bone is sawed obliquely in a posterior and outward direction. Next a chisel—not too wide—is applied to the upper margin of the zygoma, close to the base of the fronto-sphenoidal process, and the zygoma is severed, with preservation of all soft parts—entirely subcutaneously—in a forward and downward direction.

On retracting the mobilized zygoma, inclusive of the margin of the wound downward, the temporal muscle is brought into view. The posterior margin of the muscle is detached bluntly from the bone and forcibly pulled forward by a blunt hook. In case of small facial bones or strongly developed muscle, nicking of the margin of the muscle is advisable. The retraction

tion of the muscle renders the infra-temporal crest accessible. This is located with a blunt instrument (to avoid contact with the finger), and the periosteum is cut exactly on top of the crest. If, by mistake, the insertions of the pterygoid muscles are attacked, the further course of the operation becomes a bloody and difficult one. A blunt hook about 2 cm. in width is applied to the periosteal wound, running at right angles to the infratemporal crest. Employing the hook as periosteal levator, the periosteum and the pterygoid muscles are detached from the bone. This accomplished, the detached muscles, with the zygoma, are retracted downward and somewhat forward by the hook previously attached to the wound. This exposes at once the infratemporal fossa (zygomatic fossa), and in its posterior portion the foramen ovale with the third branch. It is not difficult to pull this forward with a small curved hook in order to grasp it by forceps for the purpose of evulsion. The foramen and the vicinity is closely scrutinized for any remaining branches.

If the nerve is grasped close to the foramen ovale, injury of the middle meningeal artery may be avoided. The artery is covered by the condyloid process of the inferior maxilla, and is seen in anatomic specimens in looking downward and backward from the anterior portion of the wound. The incision serves likewise for removal of the second branch, if this becomes necessary. All that is necessary is to place the head in such a position that one can view the field from the posterior margin of the wound in a downward and upward direction. The nerve is located at the entrance of the sphenomaxillary fissure surrounded by loose adipose tissue. From this the nerve is picked up by a hook, separated from the fatty tissue by small sponges and tissue forceps. When absolutely certain that the entire nerve is separated, it is grasped and evulsed.

48. Retroperitoneal Hernia.—McArthur cites a case of hernia in the fossa of Treitz consisting of an incarcerated loop of jejunum of which an accurate diagnosis could not be made before laparotomy, and then only after a most exhaustive search through the abdomen. After a careful study of the history of the case it appeared probable that there existed an acute intestinal obstruction, which might be due either to a mechanical or to an infective inflammatory cause. In favor of the mechanical nature of the obstruction was the somewhat gradual onset of the obstructive symptoms, without high fever, and with the appearance of blood and mucus in the stools; the blood count, while elevated, not being high enough to be convincing as to the presence of pus. Because of the tenderness over the whole abdomen, the sudden sharp exacerbation of the pains on the second day, and some rise in temperature, attention was directed to the appendix, but without other corroborative signs. Following the eviscerations in the endeavor to find the point of obstruction, almost the entire small intestine was removed from the abdomen before a small loop was found which led to the discovery of the cause of the trouble. The patient made an uneventful recovery.

52. Use of Longitudinal Wire Suture.—The wire used by Harris is aluminum bronze, Nos. 26 and 27, for ordinary purposes. The advantages of this wire over silver wire are its greater tensile strength, consequently a smaller wire can be used, and the fact that it does not kink so readily. The wire can be easily, quickly and certainly sterilized by simply placing it in boiling water with the instruments. In closing a median incision through the abdominal wall, three wire sutures are used, one closing the peritoneum, one in the sheath of the rectus muscle, and one in the skin.

The sutures are introduced in the following manner: A No. 27 aluminum bronze wire is threaded directly in a nearly full-curved round needle with a specially constructed eye for carrying wire so that it will not slip in the eye. The needle is made to enter the skin in the midline, 1 to 3 cm. from the angle of the incision, and penetrates obliquely all the tissues down to the peritoneum, where it should appear at the angle of the peritoneal incision. The peritoneum is now taken up with the needle, parallel with and quite near to its edge, first on one side and then on the other, constantly in an advancing manner until the entire length of the incision has been traversed. The grasp of the needle should not be more than a

centimeter in length, and the point of entrance of one grasp should be opposite the point of exit of the last grasp. The suture is then brought obliquely to the surface about the same distance from the cutaneous angle as at its point of entrance.

The second suture, wire, No. 26, enters in the midline, but a little nearer the angle of the incision. It penetrates as far as the sheath of the rectus muscle, where the edges of this fascia are taken up longitudinally in exactly the same manner as has just been described for the peritoneum. No sutures are applied to the recti muscles. At no point in the midline do the recti muscles lie in contact with one another; hence, in closing a median incision, it is unnecessary to suture together the recti muscles with the expectation of obtaining union between them. The dense, thick, conjoined fascia of the linea alba in the upper part of the abdomen or the firm anterior layer of the muscle sheath below Douglas' fold is the all-important layer to be sutured. This is the layer in which the most perfect apposition, edge to edge, should be secured. The third suture is the usual subcutaneous or subcuticular suture. The wire enters and leaves at the angles of the incision, running along in the corium, in and out, in the same manner as has been described for the other two. It does not appear on the skin at any point, except where it enters and leaves. After the wires are introduced they are drawn back and forth until they are perfectly straight and move easily through the tissues.

The wound may now be dressed in any manner one chooses. The method Harris uses is to seal the line of union with silver foil, after the method of Halstead. On this he places a compress of a few layers of plain sterile gauze, over which are folded the ends of the wires, which should be left long. On these is placed another similar compress, followed by the usual dressing of plain sterile gauze and cotton. The wires are usually allowed to remain two weeks. To remove the wires, they should be drawn back and forth gently until loosened in the tissue, then one at a time cut close to the skin and withdrawn. They are easily removed with scarcely any pain. Care should be taken not to break the wires by pulling suddenly before loosening them. In closing the muscle-splitting incision in interval operations for appendicitis, one wire parallels the fibers of the internal oblique and transversalis, entering and leaving the skin some distance from the cutaneous incision, and crossing it almost at right angles. Another wire parallels the fibers of the external oblique, and a third forms the subcuticular suture. The method which Harris uses in operating on inguinal hernia is described in detail.

55. Removable Continuous Sutures.—All laparotomy wounds that are not drained, Davison closes by applying each layer with removable continuous longitudinal silkworm gut sutures. The suture in the fascia of the abdominal wall is fastened by terminal bowknots on the upper surface of the fascia, and the free ends of the suture are allowed to protrude from the wound. The bowknots are untied by traction on the exposed ends, and the suture removed at the completion of the process of healing. The technic of the suture of the wound in a median laparotomy is as follows: All hemorrhage in the wound in the abdominal wall is stopped by sponge pressure, by forcipressure or by torsion; no catgut whatever is used. The edges of the peritoneum are caught with forceps, and are held up, away from the intestine, by an assistant, and the peritoneum is approximated by a continuous ringbone suture. The suture is lightly shirred to take up all the slack, and the ends are left hanging out of the angles of the wound, temporarily held out of the way by snap forceps. In a median laparotomy the linea alba is the strong layer of the abdominal wall, and if this layer be fastened securely there can be no spreading of the wound. The edges must be accurately approximated. The fat must be cleaned away, so that there shall be no interposition of tissue between the edges of the fascia, as that would weaken the line of union and predispose to ventral hernia. For this suture a perfect strand of silkworm gut, soft and pliable from recent boiling, is selected. A small reverse bowknot is loosely tied 10 or 12 cm. from the end of the strand. The edges of the fascia are caught with forceps and held by an assistant. The suture is introduced in a firm place in the fascia back from the angle of the wound and drawn up to the knot, and the fascia

is approximated by a continuous herring-bone suture. The needle perforations in the fascia are placed about $\frac{1}{2}$ cm. from the edge and 1 cm. apart.

At the last stitch the suture is shirred up tightly, grasped by a smooth (serrations filed off) dissecting forceps at its exit from the fascia, held by an assistant, and another reverse bow-knot tied below the point of the forceps. In tying the knot around the forceps the strand must pass under the forceps, and the loop must pass up from below, or no knot will result. The greatest care must be used not to crush or fray the silkworm gut with the forceps at the knot, for such a defect might cause the strand to break at that point at the time of removal. As the bowknot is intended only to form a body to obstruct the passage of the sutures through the fascia, it should be tied loosely, to make a larger obstruction, and to facilitate its untying at the time of removal. The ends of the tied suture must not be held out of the way by snap forceps, as their weight might untie the knots. The linea alba, being securely fastened, takes all the tension from the other layers, and the unfastened sutures in the other layers do not tend to pull loose.

The skin is closed by the Halstead subcutaneous stitch. If the patient is very fat, an extra running suture can be placed to approximate the fat and to avoid a dead space. If the wound is too long to close with a single silkworm gut strand, it is closed in sections, by repeating each suture. Lateral celiotomies are closed by suturing each layer of fascia with a tied strand of silkworm gut, not allowing muscle or fat to be included in the suture.

Texas State Journal of Medicine, Fort Worth.

February.

- 56 Sentiment and Science. F. E. Daniel, Austin.
- 57 Local Anesthesia in Major Surgery. W. Keller, Galveston.
- 58 Special Trophylaxis of Criminals and Degenerates. J. N. Meadenhall, Plano.
- 59 *Multilevel Ovarian Tumor Weighing 328 Pounds. A. E. Spohn, Corpus Christi.

59. Multicystic Ovarian Tumor.—Spohn reports this case because of the enormous size of the tumor. The abdomen was so much enlarged that it came almost up to the patient's chin and extended midway between her feet and knees. When she lay on her side on a three-quarter bed the abdomen had to be supported on two chairs. The patient could not reach her navel with her hands by one and one-half feet. When her family wished to move her they rolled the tumor and she went with it. Spohn reduced the size of the tumor gradually by tapping, then opened the abdomen and removed the cyst sac, which weighed forty pounds. The total weight of the tumor was 328 pounds. The patient made a good recovery.

California Medical and Surgical Reporter, Los Angeles.

February.

- 60 Prognosis and Treatment of Acute and Chronic Nephritis. R. W. Wernick, Los Angeles.
- 61 *Treatment of Malignant Tumors. A. Soiland, Los Angeles.
- 62 *An Unusual Case of Pregnancy. J. F. Spencer, Gardena.
- 63 *Rare Case of Hematoma. C. Freedman, Los Angeles.
- 64 *Metastatic Melanosarcoma. C. A. Smalley, Los Angeles.
- 65 Echinoecocyst Cyst Occurring the Pyloric End of the Stomach. H. P. Barton, Los Angeles.

61. Treatment of Malignant Tumors.—Soiland favors the employment of the Roentgen ray in conjunction with surgery in attacking malignant disease. The raying should be begun immediately after the surgeon has removed the growth, or as much of it as possible. A little over a year ago he made an application of powerful x-rays directly into the wound immediately following the extirpation of a large mammary cancer which was accompanied by a great deal of necrotic glandular involvement and pus. The wound healed quickly, without secondary infection, and there has been no sign of recurrence. Two other patients were treated similarly and with equally good results.

62. Unusual Case of Pregnancy.—Spencer relates the case of a woman aged 44, a multipara, who had a very severe hemorrhage at seven and a half months. Four weeks from the date of this hemorrhage there was a slight flow, lasting the usual number of days. Three weeks later there was another flow, which was followed by a third. The latter was accompanied by great bearing-down pain. The os was dilated to admit three fingers, and with but little aid the fetus and placenta

were delivered. The head of the fetus presented a flattened shape; there was neither odor nor blood from the surface of the placenta. The time from the supposed conception until the delivery of the fetus was fully ten months. The interesting feature of this case was the fact that the woman had two normal periods of menstruation, neither of which caused a miscarriage.

63. Rare Case of Hematoma.—On examining a woman who was the victim of delayed labor, Freedman noticed a large globular mass, about the size of a fist, completely occluding the vagina. It was attached to the anterior vaginal wall, and its color and general characteristics pointed to its being a large hematoma. By careful manipulation it was possible to deliver the child, but another child was then discovered in the uterus, and in order to permit of its evacuation Freedman was compelled to incise the hematoma and turn out the clot. The child was delivered successfully with high forceps. All went well and the patient made a perfect recovery.

64. Metastatic Melanosarcoma.—The primary tumor in this case was located in the right anterior occipital convolution and was the size of a walnut. Another tumor was located in the right anterior central convolution near the left Rolandic fissure. Numerous metastatic tumors were found in all parts of the body. Some of the features of interest in the case were the apparent involvement of all the structures in the internal capsule without total and permanent hemiplegia and sensory disturbances; the involvement of the right Rolandic fissure without motor symptoms referable to the left side; the mild subjective symptoms; the non-disturbance of special senses and the very slight mental disturbances; the almost complete amelioration of symptoms at times; the absence of metastases in the lungs, liver, heart, spleen and pancreas.

Journal of Cutaneous Diseases, New York.

February.

- 66 Evolution of American Medical Education.—Recognition of Dermatology in the Curriculum—Need of Clinical Concentration. W. T. Corlett, Cleveland.
- 67 Cases of Epidermolysis Bullosa, with Remarks on the Congenital Absence of Elastic Tissue. M. F. Engman and W. H. Nook, St. Louis.
- 68 *Prodromal Erythema of Varicella. H. G. Anthony, Chicago.

68. Prodromal Erythema of Varicella.—Anthony has observed two cases which he believes were analogous to the prodromal erythema of variola. A child, perfectly healthy, suddenly, without prodromal symptoms or any disorder of the throat or stomach, broke out with an erythematous rash which was not scarlet-fever like, but which was something special, because of the watery discharge from the eye. The eruption was accompanied by a few chicken-pox lesions. The variella eruption developed fully and in forty-eight hours the temperature fell to normal. In the case of the second patient the eruption was not accompanied by chicken-pox and the temperature fell to normal in twenty-four hours. Anthony is convinced that these were instances of prodromal eruptions.

California State Journal of Medicine, San Francisco.

February.

- 69 *Asphyxia Neonatorum; A New Method of Resuscitation. W. Himmelsbach, San Francisco.
- 70 *Tuberculosis of Mesenteric Lymph Glands, Symptoms of Intussusception Necessitating Resection of the Intestine. H. M. Sherman, San Francisco.
- 71 The Value of Kryoscopic Investigations for Pathology and Diagnosis. A. E. Taylor, San Francisco.
- 72 Conservative Treatment of Severe Ocular Injuries. F. Allport, Chicago.
- 73 Report of Committee on Vital Statistics. W. J. G. Dawson, Eldridge, Cal.
- 74 Preliminary Report on Pilethiosclerosis. J. B. Frankenhelm, San Francisco.
- 75 Semi-Annual Address of President of Santa Clara County Medical Society. J. L. Asay, San Jose.
- 76 Propriety of Cholecystectomy as an Initial Procedure in Gall-Bladder Surgery. T. W. Huntington, San Francisco.
- 77 Recent Complete Tears of the Perineum. G. B. Somers, San Francisco.
- 78 Mercurial Injections in Syphilis. H. Morrow, San Francisco.
- 79 Undrawn Poultry and Fish. F. G. Fay, Sacramento.

69. Resuscitation in Asphyxia Neonatorum.—The method proposed by Himmelsbach was first used by him in March, 1900, since when he has applied it in 20 cases with uniform success. The method consists of a hypodermic injection of 1/1500 grain of sulphate of strychnia and 1/2000 grain of sulphate of atropin.

70. Tuberculosis of Mesenteric Lymph Glands.—Sherman cites the case of a girl, 8 years old, who was brought to him with presumably pseudohypertrophic muscular paralysis. Subsequently she developed pain, vomiting, and obstipation, which was complete at first and resisted cathartics, but later yielded to enemata. From that time there was diarrhea, small mucosanguinolent stools being voided two, three or four times a day. Furthermore, a rounded mass, about 8 cm. in diameter, was felt in the abdomen just below the umbilicus. A diagnosis of probable intussusception was made and operation was advised. The operation disclosed a large gland in the mesentery of the ileum and close enough to the spine to press on the mesenteric veins and partially occlude them. The intestine served by these obstructed veins was congested and edematous. As it was impossible to remove the gland without either rupture or injury to the veins, and as, if it was left, it soon must itself break and pour its contents into the peritoneum producing tuberculous peritonitis, the gland, mesentery and intestine, to the extent of 53 cm., were removed and anastomosis was made with a Murphy button. The child had a stormy convalescence, but eventually recovered.

Journal of the Michigan State Medical Society, Detroit.

February.

- 80 Significance of Itching and an Analysis of Methods Suggested for Its Relief. A. T. Biddle, Detroit.
- 81 The Building of a Physician. C. H. Lewis, Jackson.
- 82 Puerperal Sepsis. W. F. Metcalf, Detroit.
- 83 Inflammation. I. N. Brainard, Alma.
- 84 Disorders from Erythraemia. O. A. Griffin, Ann Arbor.
- 85 Ectopic Pregnancy. E. C. Taylor, Jackson.

84.—This article appeared in THE JOURNAL, Jan. 6, 1906, page 32.

New Orleans Medical and Surgical Journal.

February.

- 86 Treatment of Blackwater Fever. E. M. Dupaquier, New Orleans.
- 87 Two Cases of Ovarian Cyst, with Twisted Pedicle. E. L. McGehee, New Orleans.
- 88 Pneumonia in Childhood. E. D. Fenner, New Orleans.
- 89 Perilobar Neuritis. J. L. Cazenavette, New Orleans.
- 90 Simple Urethritis Complicated with Satyrio-Erotomania. C. M. Menville.
- 91 Treatment of Syphilis. W. E. Parker.

Medical Standard, Chicago.

February.

- 92 Visceral Fixation in Splanchnoptosis. B. Robinson, Chicago.
- 93 Cancer of the Rectum. C. J. Drueck, Chicago.
- 94 Tuberculin and Anti-Tuberculous Sera. R. C. Whitman, Chicago.

American Journal of Surgery, New York.

February.

- 95 Technic of Urethral Dilatations. F. C. Valentine and T. M. Townsend, New York.
- 96 Wandering, Parasitic, or Aberrant Retroperitoneal Fibromata of Uterus. I. S. Stone, Washington, D. C.
- 97 Ectrophy of the Bladder; Operation; Result. R. Gutierrez, New York.
- 98 Office Treatment of Rectal Diseases and Its Limitations. J. P. Tuttle, New York.
- 99 Plaster of Paris, and How to Use It. (Continued.) M. W. Ware, New York.
- 100 Abscess of the Liver. L. Sexton, New Orleans.
- 101 A Case of Siderosis Bulbi. W. C. McKeely, Syracuse, N. Y.

American Journal of Urology, New York.

February.

- 102 Treatment of Stricture of the Urethra; Measures and Precautions Necessary to Obtain Success in Cases Requiring a Cutting Operation. G. McGowan, Los Angeles.
- 103 Surgical Interference in Medical Nephritis. R. Harrison, London, England.
- 104 Diagnosis of Large Neoplasms in the Left Hypochondrium. E. Glauffer.
- 105 History of Prostatic Surgery in Connecticut. O. C. Smith, Hartford, Conn.

Journal of the Mississippi State Medical Association,

Vicksburg.

February.

- 106 Atypic Hematuria. W. P. Barton, Hattiesburg.
- 107 Toxicenteric Fever. W. D. Wilson, Schlatter.
- 108 Address to the Scott County Medical Society. I. Edwards, Morton.
- 109 Puerperal Eclampsia. W. D. McCall, Cleveland.
- 110 Medical Organization. E. F. Arnold, Reelfoot, Ind.
- 111 Septicemia of the Puerperium. L. D. Dickerson, McComb.

Louisville Monthly Journal of Medicine and Surgery.

February.

- 112 Uteral Valves. B. Robinson, Chicago.
- 113 What Is the Best Way to Preserve the Sphincter Ani Muscles in Operating for Fistula-in-Ano? J. M. Mathews, Louisville.

- 114 Temporary Glycosuria. F. C. Simpson, Louisville.
- 115 Clinical Report of Chronic Suppuration of Nasal Accessory Sinuses. J. A. Stucky, Lexington, Ky.

Medicine, Detroit, Mich.

February.

- 116 Tumors and Cancer among the Bush Natives of Angola. F. C. Wellman, Benguela, West Africa.
- 117 Elementary Principles of Metabolism. J. McFarland, Philadelphia.
- 118 Erotic Symbolism. H. Ellis, Cornwall, England.
- 119 Medical Aspects of Dying Declarations. J. G. Kiernan, Chicago.
- 120 Tuberculosis of the Male Genitourinary System. J. A. Patton, Chicago.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.

February.

- 121 Alcohol a Depreciating Factor of Efficiency. G. A. Laug, S. N.
- 122 Observations Concerning the Controlling of Epidemics. E. C. Carter, U. S. A.
- 123 Efficiency of the Enlisted Man in the Hospital Corps, with Particular Reference to the National Guard. G. M. Coates, Philadelphia.
- 124 Treatment of Inguinal Adenitis. G. Rothzanger, U. S. N.
- 125 Case of Peritoneal Wound. W. H. Wilson, U. S. A.
- 126 Virulent Outbreak of Tuberculosis in a Gurkha Regiment. H. Hamilton, Lahore District.

Bulletin Johns Hopkins Hospital, Baltimore, Md.

February.

- 127 A Glass Model of the Spinal Cord. I. Hardesty, San Francisco.
- 128 Reverend Gershom Bulkeley of Connecticut, an Eminent Clerical Physician. W. R. Earleson, Seattle.
- 129 Sketch of the Lives of a German and an American Master of Surgery. M. B. Tinker, Ithaca, N. Y.

Ohio State Medical Journal, Columbus.

February 15.

- 130 Head Pains and Eye Symptoms Caused by Inflammation of the Accessory Sinuses of the Nose. C. R. Holmes, Cincinnati.
- 131 Question of Ethics in the Art of Prescribing. D. R. Silver, Sidney.
- 132 What Subjects and How Much Work in Each Should Be Required of a Graduate of a Literary College to Gain a Year's Advanced Standing in a Medical College of this State. C. P. Clark, Columbus.
- 133 Anesthetics. C. P. King, Newark.
- 134 Therapeutics. E. A. Wolf, Dennison.
- 135 Prostatic Hypertrophy. E. M. Gilliam, Columbus.

Northwest Medicine, Seattle, Wash.

February.

- 136 Treatment of Acute Lobar Pneumonia. B. O'Connor, Mackay, Idaho.
- 137 Chronic and Subacute Appendicitis as a Cause of Disorders of Digestion. W. R. Earleson, Seattle.
- 138 Appendicitis, Theories of Causation of Pain and Accompanying Digestive Disturbances. W. S. Durand, Everett, Wash.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

February 10.

- 1 *Relation of Angina Pectoris to an Arterio-Cardiac Reflex of Abdominal Origin. W. Russell.
- 2 *Food Fever in Children. E. Smith.
- 3 *Drug Idiosyncrasies in Relation to Official Dosage. C. O. Hawthorne.
- 4 Industrial Lead Poisoning. J. S. Clayton.
- 5 *Hereditary Syphilis and Enteric Fever. J. D. Rolleston.
- 6 Clinical Features of Mediterranean Fever. P. W. Bassett-Smith.
- 7 Hemoglobinuric Fever in Syria. E. W. G. Masterman.
- 8 *Case of Measles in the Puerperium. M. Campbell.
- 9 *Case of Adhesive Mediastino-Pericarditis. J. M. Bennison.
- 10 Unusual Variations of the Erythematous Syphilide. A. Cooper.

1. Angina Pectoris and an Arterial Reflex of Abdominal Origin.—Russell records his observations regarding an arterial reflex having its origin in the abdomen, the importance of which he thinks has not been fully appreciated. While the active processes of digestion are going on, there is an influx of blood into the splanchnic area. This drainage into the abdominal vessels is balanced in the general circulation by a systemic arterial contraction, evidently a reflex phenomenon originating in the splanchnic system, passing to the vasomotor center in the medulla and then transmitted to the systemic arteries. The changes in the systemic arteries are a reduction in size and an apparent thickening of the arterial wall. The degree of these changes depends on the kind of meal which has been taken. In the big eater and the wine drinker the arterial contraction is associated with a rise of blood pressure and a true increase of

arterial tension. This reflex varies in delicacy in different persons. It exists in all. Russell is convinced that there is a relation between this phenomenon and angina pectoris, and cites several instances in support of his contention. He shows that this hypersensitiveness of the vasomotor center, even in grave angina pectoris, can be reduced, controlled or even removed by dietetic measures, with the result that the anginous seizures are removed or greatly modified. In cases where the arterial spasm is associated with great anatomic change, either in the myocardium or in the coronary vessels, absolute cure can hardly be looked for, says Russell, but in all cases the symptoms of angina pectoris may be much ameliorated by conducting the treatment in accordance with what they indicate. Owing to the varying degree of intensity of the symptoms, Russell suggests that in classifying the cases the simplest distinction might be found in the terms angina pectoris major and angina pectoris minor, the former being confined to those cases in which there is believed to be permanent anatomic change in the heart or its vessels.

2. **Food Fever.**—Under this term Smith describes an affection consisting of an attack of fever which comes on suddenly, being accompanied by signs, more or less pronounced, of digestive disturbance, lasting in its acute form for several days and lingering on in a modified degree for some weeks. If the attacks occur frequently—once a month or so—their effect on the nutrition of the patient is highly injurious. The subjects of the complaint are usually neurotic children of either sex between the ages of 3 and 12 years. The attack begins with headache, accompanied sometimes by vomiting, sometimes by looseness of the bowels, but always by signs of some kind of digestive upset. The temperature ranges from 101 to 105. The stomach resonance reaches higher than normal, and the edge of the liver can be felt one or two finger-breadths below the costal margin. The urine is high colored, thick and acid. If the patient is left alone, or not treated properly, the temperature remains for some days continuously higher than the normal level. It generally rises a little after taking food and in the evening. At the end of a few days it subsides, either suddenly after a profuse sweat, or gradually, but is often moderately elevated for a week or even longer. To prevent and cut short the attacks, a careful diet is of the utmost importance. Steps must also be taken to prevent any fresh attack of catarrh which would keep up the derangement of the digestive organs. Hygiene is also of importance.

3. **Drug Idiosyncrasies and Official Dosage.**—Hawthorne says that an official dosage must be recognized as a possible danger to free and responsible personal prescribing, unless its functions and purpose are strictly limited and defined. The personal factor provided by the individual patient should regulate the dosage of any drug which it may be necessary to give him. The careful adaptation of remedies, both qualitative and quantitative, to the wants and idiosyncrasies of the individual patient is an essential part of good practice. Conformity to a stereotyped scale of doses is out of harmony with the liberty and power of scientific prescribing.

5. **Hereditary Syphilis and Enteric Fever.**—Rolleston cites a case which illustrates how a disease hitherto latent may be roused into fresh activity by an acute illness, though the latter is not etiologically connected with it. His patient, aged 19, had a typical attack of typhoid, the diagnosis being confirmed by all known tests. On the forty-eighth day, when convalescence appeared to be firmly established, the patient complained of pain in the lower jaw, which was accompanied by swelling. Under fifteen-grain doses of potassium iodid, three times daily, the condition speedily disappeared. On careful examination of the patient evidences of hereditary syphilis were found.

8. **Measles in the Puerperium.**—Campbell's patient, a young primipara, and her brother, a boy 6 years of age, were at a place of public amusement at a time when measles were rather prevalent. The following day both showed signs of having caught cold, but the symptoms disappeared in about thirty-six hours. Three days afterward the woman had a perfectly normal labor and gave birth to a living, healthy child. On the seventh day of her puerperium, her brother showed marked catarrhal symptoms, and on the next day the patient's tem-

perature was almost 100. A typical measles rash appeared, followed by some ear symptoms and a general acial edema. Both patients made perfect recoveries. As soon as the mother became ill the baby was put in charge of a nurse and isolated. Seven days afterward the infant began to be fretful and restless. There was some vomiting, aversion to food and a slight temperature. Within forty-eight hours there was a most typical measles rash, well marked all over the body. The infant recovered. Campbell directs attention to the following points of interest. Though exposed at the same time, the symptoms manifested themselves twenty-four hours sooner in the healthy boy than in the pregnant or parturient woman. The attack was more severe in the former than in the latter, and was least severe in the case of the infant.

9. **Adhesive Mediastino Pericarditis.**—Bennion regards the pericarditis in this instance as probably of rheumatic origin. At the autopsy it was found that the pericardial sac was quite obliterated and that there were large calcareous deposits in the pericardium all around the base, especially over the inferior vena cava. The heart valves were all competent. The heart muscle was hypertrophied. The patient, a girl aged 13, had measles when a baby, but had never had rheumatic fever or any other illness of importance. She died about four months after the first symptoms were noted.

The Lancet, London.

February 10.

- 11 Aphasia. B. Bramwell.
- 12 Ethics of the Medical Profession in Relation to Syphilis and Gonorrhea. C. Williams.
- 13 Observations on the Etiology of Oblique Inguinal Hernia. R. W. Murray.
- 14 Fatal Rupture of a Prosalpinx During Labor. J. W. Robb.
- 15 Hematologic and Chemical Observations in a Case of Splenomedullary Leukemia Under X-Ray Treatment. J. C. G. Ledingham.
- 16 Bilharzia Infection of the Vermiform Appendix. J. Burfield.
- 17 Torsion of the Testicle. R. M. Going.

13. **Etiology of Oblique Inguinal Hernia.**—Murray has been struck by the marked resemblance as regards the shape, general appearance and relationship of the sac in operating for oblique inguinal hernia in infants, older children and adults. From this he infers that the hernias of the old and the young have a common origin, and that in all ordinary inguinal and femoral hernie the sac is performed and of congenital origin. He suggests that the occurrence or not of hernia depends on two factors—the size of the opening at the internal abdominal ring and the strength of the muscles guarding it. If in the case of patency of the processus vaginalis the opening at the internal abdominal ring be small and the muscles guarding it powerful, then the probabilities of a hernia occurring are slight. If, on the other hand, the opening is large and the inguinal sphincter weak, the probabilities of a hernia occurring are considerable. The frequent occurrence of inguinal hernia in infants would thus be explained.

16. **Bilharzia Infection of Appendix.**—The patient whose case is reported by Burfield had an attack of appendicitis which eventually left him with a sinus leading to an abscess cavity in close connection with the proximal part of his appendix. This sinus was the means of entry of the bilharzia while the patient was bathing. The bilharzia ova were found in the appendix. There was nothing in the history of this patient to suggest bilharzia infection of the genitourinary tract or of the rectum. The patient never had a diarrhea and no blood or mucus was ever found in the stools.

17. **Torsion of Testicle.**—This patient, aged 17 years, appeared to be suffering from an acute orchitis. The symptoms finally demanded operation. On opening the tunica vaginalis, Going found a dark purplish mass in front, which afterward proved to be the globus major of the epididymis, and behind it was the testicle of a fairly normal color and not much enlarged. Going dissected the tunica vaginalis from the surrounding parts, ligated the cord with fine silk close to the external abdominal ring and excised it. A small drainage tube was placed in the lower end of the scrotum through a small incision. The original wound was closed with silkworm-gut sutures and dressed with cyanid gauze. The drainage tube was removed in forty-eight hours. The patient was allowed up on the fourteenth day.

Journal of Tropical Medicine, London.
February 1.

- 18 Notes from Angola. (Concluded.) F. C. Wellman.
19 Outline of Plague as Met in British East Africa. J. A. Haran.
20 *Outbreak of Acute Contagious Conjunctivitis in Ceylon. A. Perry and A. Castellani.

20. Acute Contagious Conjunctivitis.—Perry and Castellani made microscopic and bacteriologic examinations of the conjunctival secretions of six patients. In each of these cases the Koch-Weeks bacillus was found. In one case it was associated with a bacillus of the xerosis group. Animal experiments showed that the Koch-Weeks bacillus is non-pathogenic for the lower animals.

Bulletin de l'Acad. de Médecine, Paris.

- 21 (Year I.XX, Nos. 4-5.) The Spleen Has No Influence on Secretion of Bile.—La rate n'a pas d'influence sur la sécrétion de la bile. Pavesio and Lancereux.
22 Smallpox and Vaccination (Under Napoleon I.—Napoléon I. promulgator probable de la vaccine obligatoire. Kelsch.
23 La mortalité par tuberculose en France et en Allemagne (in Germany). A. Robin.
24 Cas de mycétome d'origine aspergillaire observé en Tunisie. Nicolle and Blanchard.

Revue de Chirurgie, Paris.

Last indexed, page 76.

- 25 (XXV, No. 10.) *Pancreatitis et lithase biliaire. E. Quenu.
26 Les kystes hydatiques de la paroi abdominale (wall). C. Lenormant.
27 Du Périhépatome. P. Vianard and G. Mouriquand.
28 *Mémoires des kystes tordus du Povaire (torsion of ovarian cysts). C. Daniel.
29 *Cure radicale des hernies inguinales. L. Gratschoff.

25. Pancreatitis and Biliary Lithiasis.—Quénu and Duval have operated on 4 patients with pancreatitis occurring in the course of a gallstone affection. They have been able to find reports of other cases, bringing the total to 118. All varieties of pancreatitis have been encountered, and Kehr remarked recently that the oftener he operated the more frequently he found lesions in the pancreas. The pancreatitis was chronic in about half the cases on record, and almost always localized in the head of the gland. When the gallstone affection is accompanied by pancreatitis the biliary attack is not typical; there are always certain abnormal details. The location and the nature of the pain are a little different. It may be referred to the stomach or to the region between the sternum and the umbilicus, and the greatest tenderness may be in the center of the epigastrium. The pain may radiate into the back, between the shoulders or toward the left shoulder. Vomiting is more frequent than in simple lithiasis. In one personal case the vomiting was almost uncontrollable. The syndrome is that of pancreatic colic superposed on the gallstone colic. In only 10 cases was a tumor to be palpated, and in some it was supposed to be an invagination. In 2 cases the tumor was palpated under the false ribs on the left. Functional tests of the pancreas are more instructive than the other findings. The urine or the feces, or both, can be examined. In 21 of the cases of acute pancreatitis an operation was undertaken, with 13 deaths. None of the 5 patients with hemorrhagic pancreatitis operated on survived. The cases with suppuration or necrosis terminated fatally in 45 per cent. All but 8 recovered in the 62 patients with chronic pancreatitis treated by operation and ample drainage. The particulars of the total material are summarized and the 4 personal cases are described in detail.

28. Hemorrhage After Torsion of Ovarian Cysts.—The conclusions of this study of hemorrhagic cysts of the ovary are that hemorrhage is frequent in a twisted ovarian cyst, occurring in about half the cases. Treatment should be by prompt laparotomy, even during pregnancy or the puerperium. Pinard's experience has been that premature delivery may be warded off by systematic subcutaneous injection of morphin during the days following the operation. Forty cases of hemorrhage after torsion are collected from the literature, with the history of 2 others from Daniel's personal experience.

29. Radical Treatment of Inguinal Hernia.—Gratschoff writes from Finland to describe a method of closing the inguinal canal which he thinks offers a number of advantages. He uses a piece of steel wire about 13 cm. long, terminating in a small perforated ball at each end. Two small hooks to hold the silk thread are soldered to the wire, which is drawn up into the shape of a bow after it has been introduced into the

inguinal canal. After the hernia has been taken care of, one end of the wire is introduced through the incision and a stout silk thread is fastened to one of the hooks and passed through the end of the wire bow and then around the internal and then the external pillar, and again around them, until enough stitches have been taken. The needle is brought out through the skin and the silk is drawn taut and fastened to the other end of the wire bow. Both wire and sutures are removed by the end of the week. He has thus treated 44 patients with gratifying results.

Revue de Gynécologie, Paris.

Last indexed, XLV, page 181.

- 30 (IX, No. 6.) *La leucoplasie de la vulve, du vagin et de l'utérus. F. Jayle and X. Bender.
31 *Le sarcome primitif du vagin chez l'adulte. Diagnostic et traitement des tumeurs solides primitives du vagin. M. Rollin.

30. Leucoplasia of Vulva and Vagina.—Jayle and Bender describe the clinical and anatomic findings in 2 cases of vulvo-vaginal leucoplasia, reviewing at the same time 31 cases reported in the literature. The vagina was invaded in only 4 out of the 33 cases. Treatment, they state, should be by ample excision, with a plastic operation if desired. If asepsis is perfect, the scar is soft, supple and not painful. If the patient refuses an operation, the case should be supervised and great care should be taken to ward off all irritation and inflammation from saprophytic infection. The leucoplasia may, and frequently does, lead to cancer. This established fact imposes the greater necessity for total removal of the patch wherever it may be located. In the collected cases the leucoplasia was confined to the vulva in 14 cases, and epitheliomatous degeneration was manifest in 10. Only 2 cases are known of leucoplasia of the vagina only, 5 of leucoplasia of the cervix and 5 of the body of the uterus. The patients were usually in the fifties, but one woman was 30, two were 61 and one was 74. The list includes some cases published in this country, among them Weir's case, published under the heading of chronic pruritus and ichthyosis of the vulva complicated with epithelioma.

31. Sarcoma of the Vagina.—Rollin traces the history, diagnosis and treatment of these growths in the adult. He had occasion to remove a sarcoma the size of a nut from the vagina of a woman of 35. The lump had been noticed for five months, but caused no disturbance. It suddenly began to increase in size, with pain, temperature and swelling. The tumor readily shelled out and microscopic examination showed that it was a spindle-celled sarcoma. Only 18 similar cases are on record, he says. He summarizes them in turn. The patients were generally in the fifties, but one was a girl of 15. The tumor recurred rapidly in this case after extirpation of the primary pedunculated growth, and the patient soon succumbed. In another fatal case the patient was a primipara of 25; in another a ii-para of 30; in another a ii-para of 23; in another a primipara of 38, and in another a married woman, 19 years old, with hemorrhages for seven weeks. A small tumor on the posterior vaginal wall was removed. Fatal recurrence soon followed. The patients were cured by the operation in 6 of the cases, including a iv-para, who noticed the tumor a year before the operation. It was the size of a walnut and was located on the anterior wall of the vagina, but had caused no disturbances. In another instance the tumor in the vagina had caused no disturbance for three years, when it began to grow, ulcerate, bleed and discharge. These symptoms had persisted for three months when the tumor was removed; there has been no further trouble during the ten years since. In Menzel's case the patient, a multipara of 39, presented a large tumor on the anterior wall of the vagina. It had been noticed for three months and was removed without interfering with a seven-months' pregnancy. The growth was a round or spindle-celled sarcoma in each of these cases.

Semaine Médicale, Paris.

- 32 (XXVI, No. 4.) L'albuminurie orthostatique "essentielle." C. Aubertin.
33 (No. 5.) Sur la paratitide chronique muco-purulente. E. Remouchamps.

Berliner klinische Wochenschrift.

- 34 (XLII, No. 52.) *Zur Klinik der Pankreas-Entzündungen (Inflammation). T. Brugsch and F. König.
35 *Ueber Pankreas-Erkrankungen Während des Diabetes. F. Hirschfeld.

- 36 Scharlachtherapie und Scharlach-Propylaxe (serum treatment of scarlet fever). Campe.
- 37 Coloidal Nitrogenous Substances in Urine.—Zur Kenntnis der Alkoholumfälligen bzw. kolloidalen Stickstoffsubstanzen im Harn. E. Salkowski. (Concluded).
- 38 *Epidemiologie des Abdominaltyphus. Kutscher. (XLIII, No. 1.) Ueber die traumatische Entzündung des Kniegelenkes (inflammatory affection of knee). Hoffa.
- 40 Ueber die Gewinnung von Dysenterietoxin. H. Lüdke.
- 41 Ueber die Lagerung der Spirochäte pallida im Gewebe. A. Buschke und W. Fischer.
- 42 *Enterogene Wachen bzw. Hysterien von van den Bergh and A. Gruterink (Rotterdam).
- 43 *Ueber tiefe Alkohol-Cocain oder Alkohol-Stovain-Injektionen bei Trigemismus und anderen Neuralgien. F. Ostwald.
- 44 Die Bedeutung der Röntgenstrahlen für die Behandlung der lymphatischen Sarkome. M. Cohn.
- 45 Antikomplemente. J. Bordet (Brussels).
- 46 Pneumothorax und Recurrens-Lähmung (paralysis). Lath. Hnski.
- 47 Zur Therapie der habituellen Obstipation. de la Camp.

34. Abscess in the Pancreas.—A young butcher was suddenly affected with colic in the upper abdomen for twenty-four hours, which returned a week later. The colic then vanished, but discomfort persisted in the region and he felt ill. The bowels moved only after an enema, but the physician did not notice anything unusual in the stools. Chemical examination, however, revealed that the absorption of fat was very much disturbed. After a test meal of 1,000 gm. milk, 25 gm. butter and 100 gm. white bread, representing 49 gm. of fat (preceded by carmin to mark the test stools), the stools contained 192 gm. of moist and 63 gm. of solid substances, with 29.23 gm. of fat. Only 19.7 per cent. of the fat ingested had been assimilated. A lesion in the pancreas was assumed and the assumption was confirmed by the operation. The patient recovered after evacuation of the abscess found in the pancreas, although the absorption of fat still remained somewhat below normal. When the abdomen is opened in case of a pancreatic lesion the fatty necrosis usually attracts attention. In one of the 3 patients operated on by Brugsch and König this necrosis extended into the omentum and mesentery. It resembles melted fat, but may be absent even in case of pronounced pancreatitis, exudation taking its place. The fluid is sometimes reddish. Still more striking is the exudation into the tissues, the mesentery, colon and omentum being gorged with fluid. The engorgement is most marked in the mesenteric glands or in the glands on the mesocolon, which looked like sausages in one of their cases. Some of the engorged parts of the omentum clumped together to form apparent tumors, which were misleading until their true nature was revealed by the laparotomy. The distribution of the pancreatic effusion is also instructive, as is explained in detail.

35. Affections of the Pancreas in Course of Diabetes.—Hirschfeld has been studying the catarrhal affection of the pancreas which is liable to develop in diabetes, having had occasion to observe 14 such cases. The catarrhal affection of the pancreas induces an acute exacerbation of the diabetic disturbances in the metabolism; it also causes local symptoms and is further distinguished by a tendency to recurrence. He presents evidence to show that in many cases of diabetic coma some acute affection of the pancreas is probably the principal factor. He has observed coma develop in diabetes after overexertion, influenza or an operation, but in other cases, when the coma is supposedly spontaneous and has been preceded for some time by gastrointestinal disturbances, he is convinced that it is in reality due to the extension of the gastrointestinal catarrh to the pancreas. The severer the diabetes the greater the liability that the development of pancreatic colic may usher in diabetic coma, especially when the colic is exceptionally severe. This occurred in 2 out of his 14 cases. The pancreatic colic may be slight and may be confused with gallstone colic or a stomach affection, or with angina pectoris. The characteristic feature is that the glycosuria becomes aggravated during or immediately after the attacks. When other causes for the aggravation can be excluded, it is safe to assume some affection of the pancreas. He thinks that such affections are more common in all forms of diabetes than is generally recognized. The most important sign of an affection of the pancreas in a diabetic is the disturbance in circulation evidenced by the absence of polyuria after copious ingestion of water. He tested 3 of his patients in this way and found that the amount of urine was increased only from 80 to 120 c.c. after ingestion of 400 c.c. of water under conditions in which normal individuals always showed

an increase of from 130 to 300 c.c. The fact that an affection of the pancreas can influence the circulation is demonstrated by the appearance of edema during pancreatic affections. He is convinced that the pancreas is probably involved in every case of diabetes.

38. The Latest Views of Typhoid Infection.—Kutscher reviews the recent evidence which shows that persons may harbor the typhoid bacilli in their bodies for years after an attack of typhoid fever and thus prove a source of contagion for others at any time. The bacilli seem to lurk in the gall bladder after they have vanished from all other points in the body. No means have yet been discovered of annihilating the lurking bacilli. Women seem to predominate among these chronic "bacilli-bearers." Contact infection is assuming more and more importance, and the principles of successful prophylaxis must be the same as for cholera and malaria. The chronic bacilli-bearers should be excluded from such occupations as are liable to spread infection, especially in dairies.

42. Enterogenous Cyanosis.—Since this subject was discussed editorially in THE JOURNAL, July 8, 1905, van den Bergh has encountered 3 more cases and describes them here at length. One patient, a boy of 9, presented sulpho-hemoglobinemia; the others were men of 31 and 51, presenting methemoglobinemia. Three other patients, women suffering from chronic obstipation, exhibited the same tendency to intense cyanosis, especially noticeable in the lips. Their blood also gave the typical spectrum for sulpho-hemoglobin. The child had stenosis of the anus, with a fistula between the urethra and the rectum. The men had suffered for years from chronic enteritis. The attacks resembled cholera in the older man, who had never been in the tropics. The younger man had served for nine years as a soldier in India. In these patients the cyanosis could be produced and banished at will by putting them on a mixed diet or by restricting them exclusively to milk. Chemical tests demonstrated that the formation of nitrites in the intestine and their absorption by the injured walls were the factors causing the transformation of the hemoglobin into methemoglobin. The nitrites could be recovered from the blood—the first time, with one exception, van den Bergh says, that substances formed in the intestinal canal have been positively demonstrated in the blood.

43. Deep Injections of Alcohol for Relief of Neuralgia.—Ostwald's communications on this subject have been recently reviewed in these columns, page 390. He here reports 45 cases of severe chronic facial neuralgia cured by this simple means. He adds a little of some local anesthetic to the alcohol, and slowly injects it for what he calls the "temporary Gasserectomy." After from five to seven days he repeats the injection, if necessary, but once is usually sufficient. He follows Schlässer's technic closely and has found the procedure effectual, even for treatment of certain cases of spasmodic contracture and for sciatica.

44. Lymphatic Sarcoma Cured by Roentgen Rays.—Cohn has applied Roentgen treatment in 5 cases of malignant lymphoma or lymphatic sarcoma, with a complete cure in 3 cases; another patient is still under treatment and the fifth was dismissed, as the growth was too extensive for the prospect of a cure. To protect the skin as much as possible, he incloses the Crookes' tube in an impermeable cover with a small opening on one side, to which is fitted a short metal tube, likewise impermeable to the rays. They are thus conducted through the tube to the growth, and pressure from the end of the tube on the skin expels the blood. The end of the tube is applied to a different spot on the skin each time, to avoid cumulative action. He has found this tube arrangement useful also to conduct the rays through the mouth to the tonsils or base of the skull in other Roentgen-ray work. He noticed in some of his patients that the spleen became temporarily enlarged while the malignant lymphoma in the neck was being treated.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

- 49 (XXXI, No. 1.) Ueber die Milcharterculose. H. Ribbert.
- 49 Behandlung der Lähmungen (paralysis). R. Stützing.
- 50 *Syphilitische und hysterische Pseudo-Osteomalacie. H. Schlesinger.
- 51 *Die Leistungen und Grenzen der Lokalanästhesie. Braun.
- 52 *Ueber die Wirkung von Cholin-Injektionen auf die Leukocytenzahl des Kaninchensblutes. K. Werner and A. Lichtenberg.

- 53 *Die Quecksilberbehandlung bei Augenkrankheiten. Schmidt-Jung.
 54 Results of Compulsory Insurance Against Sickness.—Die Erfolge der Invalidenversicherung in der Heil-Behandlung von Krankheiten. M. Wagner.
 55 (No. 2.) Subcutane Milzruptur (rupture of spleen). E. Friedheim.
 56 Ein Verfahren zum Nachweis der Typhus-erzger im Blut (bacteriologic test of blood). H. Conradi.
 57 Influence of Malaria on Childbearing.—Einfluss des Malaria-lebers auf die Schwangerschaft, die Geburt und das Wochenbett. C. Loures.
 58 Zur Radiumbehandlung des Trachoms. E. Jacoby.
 59 Ältere und neuere Balsamika. H. Vieth and O. Ehrmann.
 60 Fall von Vergiftung mit Beta Eucalin (Intoxication). J. Kraus.

50. Syphilitic and Hysterical Pseudo-Osteomalacia.—Schlesinger reports the case of a merchant of 41, syphilitic for seven years, who began to develop symptoms suggesting osteomalacia, with painful paresis of the left, then of the right leg and then of the arms. Abrupt abduction of the legs caused severe pain. The tendon reflexes were exaggerated, but there were no objective disturbances on the part of the sensory apparatus of the spine. The symptoms closely resembled those which he observed in osteomalacia in two other men, except that the pains grew worse at night. Antisyphilitic medication soon cleared up the diagnosis and cured the patient. The asymmetry of the phenomena and the skipping of the trunk were important points for differentiation. His experience with another case of pseudo-osteomalacia shows that it may develop on the basis of hysteria alone. Although the symptoms of osteomalacia were typical, yet his attention was attracted by the remarkable variations shown in brief periods of time, in the interference with function and in the pains. The attention of the patient and the influence of suggestion also caused the symptoms to vary abruptly from time to time. Differentiation was completed by the discovery of hysteric stigmata and the lack of any influence from phosphorus.

51. Local Anesthesia.—Braun remarks in the course of this clinical lecture that spinal analgesia is probably destined to supplant more local anesthesia for operations on the bladder and urethra. But operations on the anus and lower part of the rectum can be admirably performed under local anesthesia alone, with the exception of evacuation of periproctitic abscesses. Complete insensibility can easily be induced by injecting the anesthetic throughout the region in the shape of a cone. Children and adults who behave like children are not good subjects for local anesthesia.

52. Action of Injections of Cholin on Rabbit Blood.—Werner reported last year that injection of radioactivated leithin had the same effect on rabbits as exposure to radium. He now states that injection of cholin, one of the products of the decomposition of leithin, has a similar effect.

53. Mercurial Treatment of Eye Affections.—Schmidt-Rimpler advocates intramuscular injections of mercury, not only for syphilitic ocular affections, but also for certain non-syphilitic ones, such as optic neuritis, suppurative infectious processes, sympathetic ophthalmia and certain forms of detachment of the retina, especially when accompanied by evidences of choroiditis. He relates examples of his experience to illustrate the advantages of mercurial treatment in such cases.

55. Subcutaneous Rupture of Spleen.—Friedheim reports 2 patients cured by prompt splenectomy after the spleen had been ruptured by a kick from a horse or other accident. One was a boy of 4. There had been much internal hemorrhage in both cases, but the blood had quite recuperated by the end of the week in the adult, while four weeks elapsed before the blood returned to normal in the child.

56. To Detect Typhoid Germs in the Blood.—Conradi calls attention to the fact that the bactericidal property of the blood is due in part to its coagulation. By preventing the coagulation the bacteria in the blood are not interfered with, and it is possible to cultivate them. He has found that bile checks coagulation. He draws blood from the ear of the patient directly into some beef gall, to which 10 per cent. of peptone and 10 per cent. of glycerin have been added, and the whole is sterilized with steam. He generally gets from .5 to 2 c.c. of blood and distributes it in test tubes containing the gall mixture in the proportion of 1 to 3. The tubes are then set in the incubator

for from ten to sixteen hours and the contents are then spread on agar plates. He was able to affirm the existence of typhoid in from twenty-six to thirty hours. In 28 cases of typhoid, the typhoid bacilli were grown from the blood in 22 cases and paratyphoid bacilli in the others. In several cases before other tests were positive.

58. Radium Treatment of Trachoma.—Jacoby's experience has demonstrated that radium has an unmistakable therapeutic action in trachoma, but that it is far below the results of ordinary treatment.

60. Intoxication with Beta Eucain.—Kraus relates that a patient requiring internal urethrotomy was injected beforehand with 10 c.c. of a 2 per cent. solution of beta eucain. He was a robust, phlegmatic man of 40. The injection was repeated the next day when he came to have the cut stricture stretched. Almost at once he felt faint and became partly unconscious, with increasing dyspnea, distress and chills, while the breathing grew shallower and shallower. The condition lasted in all for an hour or an hour and a half. The patient was able to eat then, but did not sleep much that night and found that he was somewhat forgetful for a day or so afterward. There was no actual collapse. Treatment was with wine and camphor, faradization of the phrenic nerves in the neck and inhalation of oxygen. Kraus remarks that it is the first time that any mishap has been observed from the use of beta eucain at the clinic (Lewin's Urologic Polyclinic), although it is in daily use there. He refers casually to the 2 cases of intoxication from beta eucain reported by Marcinowski. In one case the patient had a transient syncope, but he says that she was subject to fainting. In the other case, after injection of 1.5 c.c. of a 10 per cent. solution the patient exhibited tonic and clonic spasms, which gradually subsided after fifteen minutes, but were followed by stupor and weakness, the symptoms all passing away by the end of six hours. Dolbeau, he adds, has reported a similar case of intoxication after intravenous injection of beta eucain, and Simon has mentioned transient headache and vomiting in a man whose bladder had been filled with 80 c.c. of a 4 per cent. solution for a Bottini operation.

Münchener med. Wochenschrift, Munich.

- 61 (Vol. LII, No. 50.) *Ueber die Nachweis des Röntgen-Leukotoxins im Blute bei lymphatischer Leukämie. H. Curschmann and O. Gamp.
 62 *Sahl's Desmoid Stomach Test.—Desmoidreaktion. A. Kühn.
 63 *Ueber sekundäre Ovarialtumoren. J. A. Amann.
 64 *Zur Behandlung entzündlicher Adnex-Tumoren. Steffek.
 65 What Does the Tonometer Record?—Was messen wir mit dem Tonometer von Gärner? L. Raab.
 66 *Convulsions Accompanying Hemorrhage in Pancreas.—Ueber ein ungewöhnliches Symptom bei tödlich verlaufender akuter Hämorrhagie des Pankreas. Tomaschny.
 67 Thesen für die etiologische Statistik des Krebses (of cancer). W. Weinberg. See news item, page 52.
 68 Urinal for Boys After Operations.—Urinfänger für Kinder. E. Grossmann.
 69 Mental Disturbances Directly Connected with Concussion of the Brain.—Ueber Geistesstörungen im unmittelbaren Anschluss an Hirnerschütterung. K. Heilbronner. (Concluded.)
 70 Surgery of Heart.—Die Chirurgie des Herzens und des Herzbefehls. H. Lindner. (Concluded.)
 71 (No. 51.) Ueber die Hebectomie. A. Baureisen.
 72 *Zur Ätiologie der Eklampsie. W. Liepmann.
 73 Ueber Röntgenbehandlung des Oesophagus-Krebses (cancer). W. Wenzel.
 74 Zur Kenntnis der Blutungen bei Polyneuritis alcoholica (hemorrhages). E. Neisser.
 75 Nature of Electric Phenomena on the Skin.—Die Natur der elektrischen Vorgänge an der Haut, besonders der Finger. Sommer.
 76 Der Percy-Simmondsche Telefon-Desinfektor. Müller.
 77 Der Arzt als Begutachter Unfallverletzter (certificates in case of accident). Stroux.
 78 *Ueber die chirurgische Behandlung der Taöes. Schüssler.

61. Leucotoxin in Leukemic Blood.—Under the influence of Roentgen exposures and the consequent destruction of leucocytes, a specific leucotoxin is found circulating in the blood which is able to destroy the leucocytes in animals and normal human leucocytes in the test tube. The patient taking Roentgen treatment, whose blood was examined, was a man of 60, with typical lymphatic leukemia. Under the influence of seven exposures the leucocytes dropped in sixteen days from 150,000 to 44,000.

62. Sahl's "Desmoid" Test of Chemistry of Stomach.—Sahl's test was given a thorough trial by Kühn, as also by Mehler, recently, and both found it extremely reliable and a

valuable acquisition to the means of obtaining information in regard to the chemistry of the stomach under natural conditions, without inflicting on the patient the discomfort of the stomach tube. (The Sahli test was described in these columns on page 1819 of vol. xlv.) He has the patient swallow a little iodoform or methylene blue wrapped in a tiny square of fine rubber tissue tied with a piece of raw catgut. If the chemical functions of the stomach are normal, the catgut is soon dissolved in the gastric secretions, and the appearance of the blue in the urine or of the iodine in the urine and saliva testifies to the normal digesting power of the stomach juices. The little bag is swallowed after a meal and the absence of any reaction is proof that the bag was either passed along before the gastric juice could act on it or that the secretory functions of the stomach are defective. Kühn gives the findings in 54 cases of various stomach affections, comparing them with those of other tests. The "desmoid" test proved invariably an accurate and delicate criterion of the presence of free hydrochloric acid in the stomach contents. The cancer cases always gave a negative response, as also severe cases of achylia.

63. **Secondary Tumors in the Ovaries.**—Amann distinguishes three varieties of secondary ovarian tumors: the edematous fibroma, the knobby carcinoma and the cystoma with fibro-carcinomatous deposits. He reviews the literature on the subject and warns that the ovary forms a peculiarly favorable soil for the development of secondary tumors in case of cancer of the stomach, breast, intestine, uterus, biliary passages or skin. The route of the metastasis is usually by dissemination of carcinomatous elements in the abdominal cavity, the peritoneum not taking up the scattered elements as readily as the ovary. The lymph and blood routes are also responsible in some cases. The metastatic ovarian cancers frequently form very large growths, entirely filling the abdomen, especially in case of young women. In all cases of neoplasms in the ovary, the stomach should be carefully examined before operating and be tested chemically. During the operation all the abdominal organs should be scrupulously investigated. The primary tumor is frequently so small that it may be easily overlooked. He has encountered 22 cases of metastatic tumors in the ovaries. In the last series of 4, the ovarian tumor was secondary to cancer in the stomach in 3 and to cancer in the colon in the other.

64. **Treatment of Inflamed Uterine Adnexa.**—Steffeck makes a principle of treating inflammatory and swollen conditions in the adnexa with conservative measures at first, rest in bed, superheated air, etc., but if operation becomes necessary he makes a vaginal incision, supplementing it by removal of the adnexa in case of chronic lumefaction. In the severest cases he removes the uterus. He has had a mortality of only 2 in 145 cases treated in this way. Omitting the cases in which a laparotomy was impossible, his mortality was only .7 per cent.

66. **Convulsions Accompanying Hemorrhage in Pancreas.**—The fatal hemorrhage in the pancreas in the case described was not diagnosed during life. The onset was accompanied by convulsions. The patient was a corpulent woman in senile dementia.

72. **Etiology and Treatment of Eclampsia.**—Liepmann has continued his researches on the placenta of eclamptic women, his latest series including 67. He found evidence in all of them of the presence of a toxin which is not encountered in normal placenta. It must be identical with the eclampsia toxin, as the more of the toxin that is found in the placenta the less serious the maternal eclampsia, while when there is little of the toxin in the placenta a larger amount is circulating in the maternal blood. He is convinced that the chorionic villi are concerned in its production, and that the placenta, therefore, is the place of its production. The toxin displays marked affinity for the brain cells, which are paralyzed by its action and which neutralize it. The toxin also acts most injuriously on the kidney parenchyma and next on the liver. The injury to the liver is always secondary to the intoxication. An existing albuminuria is increased by the effect of the toxin. He urges that immediate delivery, therefore, should be the rule for all cases of eclampsia. He gives diagrams comparing the mortality in the expectant and rapid-delivery methods of treatment. The expectant treatment

at certain clinics gave a mortality of 30 per cent., while the mortality at others has been only 8, .8 and 1.8 per cent. since the rule has been followed of delivering all eclamptic parturients without delay. Saline infusion and venesection have sometimes proved useful, and also artificial respiration, according to Sylvester's method, kept up for hours when the patients were very comatose and respiration was shallow. At Bummi's clinic the lowest mortality of all, 1.8 per cent., is reported in 79 cases since April, 1904. None of the women with less than five attacks died. Others were saved who had had ten and thirteen attacks. Experiments are now under way in the effort to produce a serum for the treatment of eclampsia. (See editorial.)

78. **Surgical Treatment of Tabes.**—Schüssler advocates surgical stretching of the nerves after incision as the most rational and effectual of all surgical measures applicable to tabes. He states that tabes is always accompanied by a perineuritic or neuritic process at the periphery, and nerve-stretching is indicated. Its chief effect is in inducing hyperemia, he thinks, and he applies it at the earliest possible moment, insisting that the anatomic findings refer to the periphery the beginning of the lesion in tabes. He has thus treated 44 patients, performing 82 of these nerve-stretching operations on them after an incision. The conditions were most deplorable in a number of the cases, and one patient, much debilitated by mercury and iodid treatment, succumbed to pulmonary embolism.

Hospitalstidende, Copenhagen.

Last indexed XLV, page 161.

- 79 (XLVIII No. 33.) Appendicitisfaldet 125 Aar paa Kommunehospitalet i Copenhagen. C. Wesscl.
- 80 (Nos. 34-35.) *Behandling af Larynx-Tuberkulose. V. S. Stehn.
- 81 En Rhinoplastik. L. G. Digmann.
- 82 (Nos. 36-38.) Om den kvindelige Pseudodermafroditisme. J. Fibiger.
- 83 Menigitis efter Parotitis. L. Bentzen. One case.
- 84 (Nos. 39-43.) *Om Tuberculosis conjunctivae (Isaer Lupus conjunctivae) og dens Behandling. K. Lundsgaard.
- 85 Splenectomi vedlidet i Milten af et syfilittisk Paster (in spleen of syphilitic Infant). A. Brønnum and V. Ellermann.
- 86 Attitude of Physicians to Use and Abuse of Alcohol.—F. Dr. Stilling som Læger til Brug og Misbrug af Alkohol. P. V. Koch.
- 87 *Prostatahypertrofiens Behandling. T. Røysing.
- 88 *Throat Troubles from Excessive Use of Speaking Voice.—Om Behandlingen af Forstyrrelsen af Halsledet fremkaldte ved professional Brug af Talestemmen. Th. Myrdal.
89. Modified Vaginal and Aspirating Tube.—En lille Modifikation af de almindelige Vaginal-litor og Saarspidser. O. Iloern.
- 90 (No. 44.) Appendicitis og dens Behandling paa Aarhus Kommunehospital. E. Müller.
- 91 Små terapeutiske Meddelelser. K. Lundsgaard.
- 92 *Sterilization af Lamlarja. J. Kuhn.
- 93 (Nos. 45-47.) Action of Light Bath on Blood Pressure, etc.—Det kemiske Lysbads Virkninger paa Blodtryk og Kredsløfsforholdene. K. A. Hasselbath.
- 94 Congenital Deformities.—Om nogle medfødte Misdannelser af Extremiteterne. P. N. Hansen.
- 95 Elendomme i Celler i Spinalvæsken ved et Tilfælde af Polymyositis acuta (peculiar cells in spinal fluid). V. Ellermann.
- 96 (No. 48.) *Studier over den kroniske Gastritis: Achylia gastrica ved Lungetifelse. K. Faber.
- 97 Work Done by the Female Patients.—Kvindelige Patienters Arbejde paa Hjeltev Sanatorium. O. Helms.

80. **La yngeal Tuberculosis.**—Stein encountered 170 patients in 474 with tuberculosis of the lungs who presented symptoms of tuberculous involvement of the larynx. The most frequent symptom was hoarseness. About 77 of the patients complained of local pain and 72 of difficulty in swallowing from the first. He was able to improve the condition in 68, so that all pain and difficulty in swallowing passed away, and 8 patients were clinically cured. A number of other patients were materially relieved, although there could be no question of much improvement in their cases. When the diagnosis is assured he institutes general as well as local treatment for the tuberculosis. He commences with prolonged inhalations of menthol twice a day. This frequently proves sufficient to relieve the pain and other symptoms. It is very important to refrain from using the voice; he requires his patients to write all they have to say and not to speak at all. As a last resort he occasionally finds it necessary to use local anesthesia in the form of cocaine or some similar preparation in olive oil.

84. **Tuberculosis of the Conjunctiva.**—Lundsgaard declares that when the tuberculous process in the conjunctiva is not too large for radical extirpation it should be excised into sound tissue. If the process is too large for this, but has not yet in-

vaded the bulbar conjunctiva, then it should be treated with phototherapy. If this is impossible on account of the extension of the process, then tuberculin treatment is justified. The actual cautery, cauterizing, etc., may be useful adjuncts, but can not be relied on for the whole treatment. The anatomic findings alone are not always sufficient for differentiation; reaction to a test injection of tuberculin is confirmatory of the tuberculous nature of the process, or inoculation of rabbits' eyes may prove decisive. His experience includes 15 cases, which he describes in detail. A number of these patients were treated at Finsen's Light Institute. In several of the cases various methods of treatment had been tried, but without results, until the process was finally arrested and the patients cured by excision into sound tissue. The results of this were always so good that he urges its general adoption as the standard procedure.

87. Treatment of Hypertrophied Prostate.—This article was read by Rovsing at the recent International Surgical Congress as the introduction to the discussion on this subject. He preaches that the hypertrophied prostate in itself does not require any treatment; further, that treatment is not required in more than 16 per cent. of the cases in which the enlarged prostate interferes with the free emptying of the bladder. He insists that even when hypertrophied the prostate is a useful and important organ which should not be sacrificed without compelling reasons. Systematic catheterization, he states, should always be given a thorough trial first. It is liable to improve conditions to such an extent as to amount to an actual cure. The question whether to condemn the patient to the catheter perpetually or to remove the necessity for it by an operation is a question that can be decided only by the condition of the bladder muscle. The best way to estimate the condition of the bladder muscle is by the force of the stream of urine when the catheter is introduced. If the bladder is completely paralyzed it is better to cling to the catheter, but if the bladder muscle is still functionally sufficient, vasectomy or prostatectomy should be done, according to the indications. He thinks that vasectomy deserves a better reputation than it now enjoys. He performs vasectomy in every case of soft, diffuse, parenchymatous hypertrophy of the prostate causing trouble. It is contraindicated in case of hard, fibrous hypertrophy and retention from enlargement and protrusion of the median lobe into the bladder. He has cured his patients in 60 per cent. of the 70 cases treated by vasectomy, and materially improved 30 per cent., failing to relieve in only 10 per cent. The mortality is zero, he states; the operation is performed with local anesthesia alone. He is convinced that prostatectomy is done too frequently. Too little attention is paid to the seriousness of this operation, which, he says, puts an end to all sexual life, as well as to the power of procreating. He restricts partial prostatectomy to cases of retention from enlargement of the middle lobe, without pronounced infection of the bladder, and when the patient is resistant enough. He always performs the operation by suprapubic route, which avoids injury of the urethra and rectum and exposes better the field of operation. Total prostatectomy should be reserved for cases in which there is suspicion of cancerous degeneration of the hypertrophied prostate or when there is recurring hemorrhage or abscesses. He prefers Freyer's technic. Suprapubic cystostomy should be reserved for cases in which vasectomy has proved a failure, or when there is retention with threatening infection requiring immediate intervention, or for elderly or much debilitated men, or when the bladder is paralyzed and the systematic, prolonged use of the catheter is difficult or impossible for any reason.

88. Treatment of Throat Affections from Overuse of Speaking Voice.—Myling describes a series of exercises to strengthen the muscles and to teach the patients to use their voices properly, insuring ample respiration by expanding the chest and lowering the diaphragm. He does not use any local treatment except, possibly, some astringent spray, but continues the course of exercises from six to eight weeks, with five or six lessons of half an hour each every week at first and later three or four lessons. The results have been very good and permanent. He thinks that similar training should be given to every one who is planning to take up a life-work which will require much use of the speaking voice, especially teachers. He has recently had ten young women teachers take a prophylactic course of

these exercises with him, and the results have been very encouraging.

92. Sterilization of Laminaria Tents.—Kuhn describes experiences and tests which have demonstrated that laminaria tents can be thoroughly sterilized by heating them to 115 C. for ten minutes.

96. Achylia Gastrica with Pulmonary Phthisis.—Faber describes the anatomic findings in 5 cases of gastric achylia in consumptives. His research on the subject of gastric achylia has demonstrated that the assumption of a purely nervous origin is untenable, as he has found evidences of chronic gastritis in all the patients who presented the symptoms of gastric achylia during life. This applies to the tuberculous as well as to the non-tuberculous cases. The causes of the gastritis may be various.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

LIST OF THE FELLOWS, MEMBERS, EXTRA-LICENTIATES of the Royal College of Physicians of London and of Holders of the Diploma in Public Health. Granted Jointly by the Royal Colleges of Physicians and Surgeons. Paper. Pp. 516.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION, Vol. XXIII. Edited by Richard H. Harte, M.D., Recorder of the Association. Cloth. Pp. 392. Printed for the Association, for sale by William J. Doran, Philadelphia, 1905.

TRANSACTIONS OF THE LUZERN COUNTY (PA.) MEDICAL SOCIETY for the Year Ending December 31, 1905. Vol. XIII. Organized March 1, 1861. Paper. Pp. 278. Wilkesbarre, Pa.: E. B. Vordy Co., 1905.

UNCONSCIOUS THERAPEUTICS, or the Personality of the Physician. By A. T. Schofield, M.D., M.R.C.S. Second edition. Cloth. Pp. 317. Price, \$1.50. Philadelphia: P. Blakiston's Son & Co., 1906.

DIE KOSMETISCHE UND THERAPEUTISCHE BEDEUTUNG DER SEIFE By S. Jessner, M.D., Zweite verbesserte Auflage. Paper. 1p. 58. Price, mark .90. Würzburg: A. Stuber's Verlag, 1906.

STUDIES FROM THE ROCKEFELLER INSTITUTE for Medical Research. Reprints. Vol. IV. 1905. Paper. New York: The Rockefeller Institute for Medical Research.

A SPECIAL CATALOGUE OF GALVANIC, FARADIC AND SINUSOIDAL APPARATUS. 32 Pages. Illustrated. For free distribution. Chicago. R. V. Wagner Company.

NEW PATENTS.

Recent patents of interest to physicians, etc.

- 810548. Surgical table. Emma B. Dill and S. F. Du Bois, Chillicothe, Ohio.
- 810549. Abdominal supporter. Nuna Grose, St. Louis.
- 810533. Valve mechanism for sterilizers. J. Everett Hall, Erie, Pa.
- 810655. Casker. A. Bertsell Ireland, Greene, N. Y.
- 810538. Spatula and cork-extractor. Edwin B. Jells, Oultman, Ga.
- 810769. Inhaler. Edwin C. Jones, Woodstock, Canada.
- 810772. Druggists' prescription file. Robert C. King, Beaumont, N. C.
- 810791. Druggists' label holder. Newton W. McCourt and T. N. Burnsall, 2nd, Bradford, Pa.
- 810784. Stomach for ice-bags, helmets and the like. C. W. Melnick, Jersey City Heights, N. J.
- 810675. Dilator. Gustav F. Richter, New York.
- 810676. Poison bottle stopper. L. N. Ritten, Estherville, Iowa.
- 810685. Massage applicator. Edward S. Salzman, Chicago.
- 810689. Supporting apparatus for pathologic conditions requiring a sitting position. Douglas G. Storms, Hamilton, Canada.
- 810820. Surgical table. James L. Suddarth, Washington, D. C.
- 811364. Ozone-generator. Charles F. Birtman, Chicago.
- 811492. Cot for invalids. Milton Q. Fair, St. Padoque.
- 811167. Protector for backs and chests. M. L. Paddock, Lyons, N. Y.
- 811111. Syringe. George C. Weeferath, Baltimore.
- 811112. Catamenial bandage. Edward S. Dix, New York.
- 812031. Truss. George M. Farleigh, Rossland, B. C.
- 811713. Invalid bedstead. L. J. Gronde, Chicago.
- 812133. Surgical table. T. J. James, R. McAllister and W. S. Byram, Missoula, Mont.
- 812559.60. Clinical thermometer. W. F. Fruehauf, Plainfield, N. J.
- 812275. Artificial limb. Wm. M. Keshpol, Duluth, Minn.
- 812240. Obstetric instrument. Frank Jedecroft, Greenfield, Iowa.
- 812507. Surgical operating engine. Wm. H. Ludwig, Rock Island, Ill.
- 812358. Apparatus for use in hospitals, sick-rooms, and like places. Frederick M. Oliver, Pendleton, Ore.
- 811806. Mirror for surgical, dental and like uses. Robert Walker, Newark, N. J.
- 812768-69. Medicated tampon. Edmund M. Pond, Rutland, Vt.
- 812679. Suction appliance. Mathias Reimanns, Valkenburg, Netherlands.
- 812240. Operating table. Joseph Schoettl, C. Jaeger and P. Walsleben, New York.
- 812686. Syringe. Henry T. Schork and F. A. Stahl, New York.
- 812706. Respirator. Joseph Warhase, Newton, N. J.

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Original Articles

TWO POSSIBLE CAUSES OF EMACIATION NOT GENERALLY RECOGNIZED.*

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BOSTON.

Some physicians and many laymen are in the habit of thinking and speaking as if the bulk of the human body could be increased or diminished as simply as we load and unload a vessel: Pour in the cargo and the displacement increases; hoist it out and she rides light on the water. But to feed a patient up or to starve him down is not nearly so simple.

Our state of nutrition depends on the number, the contents and the activities of our body cells; but these cells are not buckets to be filled or emptied at our pleasure. They multiply or atrophy, take up food or reject it, burn fuel or refuse to do so according to their own laws. Without food they can no more do their work than a miner can dig coal or a composer produce sonatas. But no one supposes that you can get good music simply by supplying good food, and it is equally irrational to imagine that good food means good nutrition, independent of the creative and constructive talent of the individual cells. Good food, properly utilized, makes the composers and the cells able to do their work, provided they are otherwise fit for it.

These considerations can be expressed as follows:

SOME FACTORS IN NUTRITION.

- A. Ingestion of Food (in quantity and quality suited to individual needs).
- B. Utilization of Food (digestion, absorption, metabolism, excretion).
- C. Cell growth: as influenced by:

- I. AGE: FILLING OUT IN YOUTH; ATROPHY WITH AGE (ARTERIAL?).
- II. SEXUAL FACTORS (CASTRATION, PARTURITION, MENOPAUSE).
- III. INTERNAL SECRETIONS (ACROMEGALY, PAGET'S DISEASE, MYXEDEMA, GRAVES' DISEASE).
- IV. SLEEP AND OTHER FORMS OF REST (RECREATION, CHANGE, ETC.).
- V. EXERCISE AND OTHER FORMS OF ACTIVITY (WORK).
- VI. HEREDITARY, INDIVIDUAL AND PSYCHIC FACTORS.

The rest of my paper is a discussion of some of these items.

I pass hastily over the factors grouped under A and B. Food requirements exemplify very well that individual factor in hygiene to which I have recently called attention.¹ For example, a corpulent person is not always one who eats more and exercises less than his lean neighbor. *He is one who eats more and exercises less than his individual constitution demands.*

But food in the intestinal canal is still outside the cells. Faults in digestion, absorption, metabolism (e. g., diabetes mellitus) or excretion (nephritis) may render food not merely useless, but actually poisonous to the body cells. Hence, if these activities are themselves out of working order, "good food and plenty of it" may destroy instead of build up the body.

It is, however, to the factors influencing nutrition grouped under C that I wish to direct attention, and my text is this: Cell growth, cell multiplication and cell nutrition are profoundly influenced by age, by sexual influences, by internal secretions, by sleep and exercise, and by a multiplicity of hereditary, individual and psychical factors not yet clearly distinguished.

I. AGE.

In the process of growing up, there is a period when a youth has reached his full height, but has not yet "filled out," as we say. He eats voraciously and seems to "take care of his food" perfectly, but for the thickening up of his body the time has not yet come. A year or two later his cells take on a new type of activity, a new pace, and, without any change in the amount or kind of food taken, his body changes its habit, his nose and jaws grow, and his tailor has to cut his clothes so as to allow for a good deal more beam, though his length over all is the same.

After a time, and without any corresponding change in diet, this furious new production of cells slackens. Growth is complete, or nearly so. The cells again change their type of activity, and now maintain, without notably increasing, their number and their size.

A long period of stability and conservation follows, lasting through the prime of life. Then comes one of the changes in the mode of cell activity, in which I am just now especially interested. I mean the emaciation that develops with increasing age and often without any corresponding change in diet. It is a familiar fact that most elderly persons are thin—thinner than they were in the prime of life. Occasionally this loss of flesh may occur within a relatively short time and may give rise to grave but unfounded apprehension or to a mistake in diagnosis.

On Oct. 1, 1904, I saw, in consultation, a sea captain, aged 49, who had lost 90 pounds of flesh in thirteen months (original weight 265, present weight 175). His health was not bad, his appetite and sleep were excellent, his diet was unchanged, but he and his family physician were not unnaturally alarmed by this loss of weight. To what was it due? I made as thorough an investigation of his organs and functions as I knew how to make and found nothing but a marked beading and lateral motion of the brachial and radial arteries. With some hesitation, therefore, I gave the opinion that he was simply undergoing rather faster than the average the atrophy of old age. The subsequent course of his case has apparently confirmed this opinion. At any

* Read before the San Francisco County Medical Society.

1. "Individual Factors on Hygiene," Boston Medical and Surgical Journal, June 15, 1905.

rate no known disease has developed since that time. His weight continued gradually to fall until it reached 155 about Jan. 1, 1905; since then it has remained practically stationary and he feels as well as ever. No treatment was given.

But we believe that "a man is as old as his arteries." Is it not likely that this emaciation of old age is connected in some way with arteriosclerosis? Since this idea occurred to me I have been noting the recent variations in weight of arteriosclerosis patients seen in my clinic at the Massachusetts General Hospital. Table 1 shows that 85 per cent. of these cases have lost markedly in weight (13 to 60 pounds) within the period in which it is reasonable to suppose that they acquired the arterial degenerations now existing.

TABLE 1.—EMACIATION IN TWENTY CASES OF ARTERIOSCLEROSIS (NOT SELECTED)

| Number. | Hospital Number. | Loss of Weight. | Age. |
|---------|------------------|---------------------------|-----------|
| 1. | 7365 | 60 pounds in 5 years | 65 years. |
| 2. | 4560 | 60 " 6 " | 70 " |
| 3. | 32117 | 53 " 20 " | 70 " |
| 4. | 46330 | 39 " 2 " | 60 " |
| 5. | 46150 | 36 " 31 " | 57 " |
| 6. | 45583 | 35 " 10 " | 70 " |
| 7. | 23868 | 34.5 " 19 " | 69 " |
| 8. | 36507 | 32 " 20 " | 68 " |
| 9. | 32773 | 32 " 48 " | 72 " |
| 10. | 45011 | 24 " 2 " | 86 " |
| 11. | 42686 | 23.5 " 3 " | 58 " |
| 12. | 19863 | 21.5 " 16 " | 53 " |
| 13. | 30572 | 20.5 " 20 " | 82 " |
| 14. | 45691 | 20 " 2 " | 65 " |
| 15. | 5127 | 19.5 " 15 " | 65 " |
| 16. | 47654 | 15.75 " 7 " | 52 " |
| 17. | 32514 | 13 " 35 " | 82 " |
| 18. | 46031 | 9 " 7 weeks | 52 " |
| 19. | 46507 | 5 " 46 years | 66 " |
| 20. | 26943 | Gained weight (3 pounds.) | 59 " |

Average loss in 19 cases, 29.5 pounds.

It is, I suppose, the usual experience to find most arteriosclerosis patients thin. It is not merely that emaciation makes it easier to feel the degenerated arteries. The fat arteriosclerotic is, I believe, really less common, although I have not yet collected statistics sufficient to prove this. It may very well be that both the emaciation and the arteriosclerosis are due to a common cause and are not related to each other as cause and effect. All that I am concerned to show is that during the years in which arteriosclerosis is prone to develop the individual is apt to lose weight, usually little by little, sometimes with rather alarming rapidity.

II. SEXUAL FACTORS.

I shall merely allude to certain well-known facts which should make us realize better than we often do how powerful are the mysterious energies of sex in their influence on nutrition and how completely subordinate a rôle is played in certain cases by the more simple and obvious factors, like the amount and kind of food. We are all familiar with the marked changes in build and nutrition which are produced when by castration we turn a bull into an ox, but we do not always stop to notice that this change is relatively independent of any variation in diet. In some animals it has been shown that castration makes no difference in metabolism and that any increase in weight which occurs must be referred to the change in the animal's habits. I know of no direct investigation of this matter in human beings.

The increase in flesh so familiar in women after parturition and at the menopause seems in all probability to be guided by sexual influences. I believe that I have noticed in engaged couples a loss of flesh not accounted for by any variation in diet, sleep or exercise. This is, however, a more doubtful point.

III. INTERNAL SECRETIONS.

Myxedema patients certainly gain weight and exophthalmic goiter patients certainly lose weight without any corresponding observable change in diet, digestion, absorption or excretion. The metabolic processes are influenced profoundly. For example, it has been estimated that exophthalmic goiter patients require from 10 per cent. to 20 per cent. more food to maintain weight than normal individuals.² Otherwise they will emaciate progressively, despite normal appetite, digestion and absorption.

That acromegaly and Paget's disease are due to faulty internal secretions is not by any means proved, but for the purpose of this article no harm is done by so regarding them. What we see in these diseases is that certain tissues suddenly take a start and grow independently of any known changes in the amount or kind of food furnished to the individual. A group of cells takes on a new habit of growth and reproduction and rushes ahead under the guidance of forces wholly outside the pale or the ordinary intake and digestion of food.

IV. SLEEP.

Two years ago my attention was called by the following case to the possibility that emaciation might be due to loss of sleep. A plumber, aged 56, consulted his physician for substernal pain suggesting aneurism, but there were no pressure symptoms and no other physical signs except a well-marked shadow shown up by radioscopic examination and corresponding precisely to that which might be produced by a small aneurism. A remarkable feature about the case, however, was this: In the four months during which he had noticed the pain, he had lost 38 pounds of flesh (183 to 145), although his appetite and digestion had remained excellent throughout. His urine was normal and no other cause for the emaciation could be found. On account of this inexplicable loss of flesh and the absence of any signs of aneurism except the pain and the radiographic shadow, his physician was inclined to think that there was malignant disease in the mediastinum. After seeing this case in consultation and noting that throughout his illness his sleep had been considerably disturbed by pain, I looked up the records of 22 other aneurism cases recently seen in my clinic and in the other departments of the Massachusetts General Hospital and found that all but two of them had lost very markedly in weight and in sleep, though in most cases their appetite was unimpaired.

I have been unable to think of any sufficient reason for the loss of flesh in these aneurism cases unless it is true that loss of sleep (due to pain) prevented the normal processes of tissue repair on which the maintenance of nutrition, in part, depends. This theory is not proof, and will need, I suppose, a great deal of experiment to prove it, but meanwhile I have noticed one or two straws pointing in that direction. First, the haggard look so often seen in the faces of those who have passed a sleepless night. This must be due, I think, to an actual emaciation in the facial tissues. It certainly has all the appearances of local emaciation. Secondly, I have noticed that in some cancer cases, with good appetite and digestion, nutrition did not begin to fail until the pain was sharp enough to prevent a proper allowance of sleep. Thirdly, the loss of weight of some athletes as a crucial contest approaches seems to me perhaps best explained in this way.

TABLE 2.—EMACIATION IN CASES OF THORACIC ANEURISM.

| Name. | Hospital Reference. | Loss of Weight. | Remarks. |
|----------------|--------------------------|----------------------------------|----------------------------------|
| Mahon. . . . | Priv. Rec. B. 2, p. 237. | 38 lbs. in 6 weeks. | Appetite and digestion good. |
| Smith. . . . | 594-74 | 32 lbs. in 16 mos. | |
| Allerson. . . | 594-12 | 40 lbs. in 7 years. | Symptoms for 7 years. |
| McCaflerty. . | 490-124 | 25 lbs. in 4 months. | |
| Shannon. . . | 520-154 | 20 lbs. in 1 year. | |
| Nicholas. . . | 595-33 | 17 lbs. in 2 months. | Appetite good. |
| Stone. . . . | 540-102 | 35 lbs. in 4 months. | Digestion poor. |
| Winslow. . . | 553-162 | 50 lbs. in 10 years. | |
| Wheelwright. . | 559-70 | 25 lbs. in 16 years. | Appetite good, no distress. |
| Duffy. . . . | 532-20 | 30 lbs. in 1 year. | No gastric symptoms. |
| Bernard. . . . | 427-12 | 25 lbs. in 1 year. | Digestion good, poor appetite. |
| Ebern. . . . | 527-138 | 21 lbs. in 1 year. | |
| Jenkins. . . . | 531-102 | 45 lbs. in 6 months | Appetite and digestion good. |
| Gilkey. . . . | 541-56 | 20 lbs. in 2 years. | Appetite and digestion good. |
| Kinsman. . . | 490-16 | 13 lbs. in 2 months. | Poor appetite. |
| Peck. . . . | 541-60 | 23 lbs. . . . | No digestive symptoms. |
| Too-a. . . . | 526-96 | 60 lbs. in 2 years. | Appetite good, slight dyspepsia. |
| Murray. . . . | 526-170 | 44 lbs. in 1 year. | Appetite good, no dyspepsia. |
| Cassini. . . . | 515-88 | 20 lbs. in 4 months. | |
| .. . . | 1726* | 8 lbs. in 1 year | |
| .. . . | 1736* | 35 lbs. in 5 months. | |
| .. . . | 456* | 20 lbs. in 1 year. | |
| Taylor. . . . | 594-96 | "Several pounds in a few weeks." | |
| Winters. . . . | 565-42 | Great emaciation. | |
| Johnson. . . | 485-18 | "Progressive loss of flesh." | |
| Forsyth. . . . | 858-58 | "Very little loss." | |
| Annebale. . . | 275-23 | No loss of weight. | |

* Out-patient department. Average loss in 22 cases, 29.4 pounds.

I repeat that I do not consider that I have given proof of the truth of this suggestion that insomnia is a cause of emaciation. I mention it chiefly because I wish to get the opinion of other men on the point and to find out whether any observations besides those quoted have already been recorded.

V. EXERCISE.

On the well-worn topic of the relation of bodily exercise to nutrition I wish merely to emphasize two points:

1. In "building up" a patient by rest and forced feeding it is fat and not muscle that we build. There is no evidence to show that muscle can be increased except (a) by the natural growth of the body, (b) by the adaptation of the mature body to a gradual increase of muscular work, (c) by the extraordinary regenerative processes that occur in convalescence from wasting diseases.³

2. Exercise increases weight when it increases muscle and decreases weight only when the gain in muscle is overbalanced by a greater loss of fat. This explains why some athletes gain and others lose in weight in the earlier part of the football season before any of the other influences which affect them later in the season have become operative (insomnia, "staleness," neurasthenia).

VI. HEREDITARY, INDIVIDUAL AND PSYCHIC FACTORS.

Inextricably mingled in their operation are some of the individual peculiarities (inherited or acquired, physical or psychical) which affect nutrition. There are some persons whose tissues are so repellent that it seems as if no amount of stuffing with food of any kind would fill out their lean shanks. Others seem fatally predestined to obesity after a certain age and, despite a restriction of diet which would keep an ordinary per-

son emaciated, they take on fat at an extraordinary rate.

Trainers are accustomed to say that nervousness and "overtraining" have a controlling influence in the loss of weight which is observable in many athletes when a "big game" gets near. Aspirants for political office and business men in crises lose weight under the conditions of anxiety and excitement which increase as the critical day approaches. Whether these physical influences affect us through their direct influence on metabolism or indirectly through loss of proper sleep (proper in quality as well as in quantity) I do not know. The subject is one of practical importance as well as of scientific interest and deserves careful study.

SUMMARY AND CONCLUSIONS.

1. Loss of weight (gradual or fairly rapid) is often observed as a part of the aging process in persons past middle life.

2. This emaciation is often associated with arteriosclerosis, possibly as a result of it, possibly as the concomitant effect of some third (unknown) factor.

3. The rapid gain in weight often seen in growing children and in the convalescence from wasting diseases is not directly a result of abundant food and may occur even when the food supply is far below normal. The gain must be referred to an extraordinarily rapid cell production due primarily to heightened growth-energy in the cells themselves.

4. That influences connected with the organs of sex may exert a controlling force on nutrition is strongly suggested by the changes in flesh and figure following parturition and the menopause.

5. The importance of internal secretions in the maintenance or perversion of nutrition is exemplified in the emaciation of Graves' disease, the increased weight of the myxedematous, and perhaps in the more local hypertrophies of acromegaly and Paget's disease.

6. The possibly decisive influence of insomnia on weight is suggested by the rapid emaciation sometimes occurring in cases of aneurism when sleep is prevented by pain, though appetite remains excellent.

THE GENERAL CONDITIONS ASSOCIATED WITH INSANITY.

THEIR CONNOTATIONS AND CERTAIN DEDUCTIONS AS TO THEIR SIGNIFICANCE.*

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The thesis to be defended in this paper is formulated in the following statement: There can not be special change in an organ without general disease in the rest of the organism, and in the study and treatment of the special condition the general involvement and its extent are the most important.

There are two assumptions in this connection which may be made concerning the human organism, based on what is known of its cytology and what has been demonstrated as to the processes of its functional activity. First, that the primary functions are those of vegetation, and that all others are related and in sequence to some form of activity involved in the processes of nutrition; second, that the nervous system is the last in the order of

3. Investigations of the metabolism of convalescents have shown that they gain weight and muscle even if their supply of food is so restricted that a normal person would lose weight on it. When the cells are thus aroused it is impossible to check their magnificent regenerative energy, even by semistarvation.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

development and the most complex in its structure; also, the complexity of the structure and functions of the nervous system has increased in a direct ratio with the demands on the general organism, resulting from changes in and the increasing complexity of its environment. It may be further assumed that the functional cell, wherever found, has a limited potentiality, also a normal plane of response to the incident forces constituted in its environment. This plane of response will, naturally, vary with the individual, and, other things being equal, will depend for the level of its development on the combined capacities of the parents at the time of conception, the competence of the mother during the period of gestation, and the suitability of the individual environment during the period of development. It follows, as the corollary of this statement, that if for any reason the potentiality of the functional cell is abnormally limited, or on account of untoward or disastrous conditions in the environment of the organism is manifested excessively, the limit of capacity in the area or organ will be prematurely reached and the process of degeneration begin. That this is true, arrested and defective development, instability in the nervous system, as well as the different tendencies toward degenerative processes in the vegetative organs abundantly prove. It follows then that in the study of the processes of disease we are concerned first with the capacity of the general organism, then with the evidence of functional incompetence or defective structure in the organ or part involved; and, finally, with the relation of the function of the organ involved to the nutritive or eliminative processes in the general organism. In other words, while the morbid histology in the organ may be special, and the symptomatology resulting from its involvement specific, the pathology is general and the disturbance of the functional activity in the different organs will be in proportion with the intimacy of their relation in function with the organ involved.

During the past twenty-five years many efforts have been made to put the study of insanity on a scientific basis, but so far none of the methods presented have met with universal acceptance. Men doing special work in medicine see in mental aberration a complication or the apparent result of disease conditions which come under their observation and with which they are familiar. Each one has tried to explain the manifestations of insanity from the standpoint of his special field. The gynecologist sees the cause of insanity in women in disease conditions in the pelvis, which may be associated with the insanity, the ophthalmologist in the motor and visual mechanism of the eyes, the general surgeon in the results of cranial traumata or the complications of operative procedure. Among neurologists the effort is being made to explain the perversion of mental activity in terms of disease in the cerebrospinal sensory and motor apparatus, and they see the cause of the insanity in the morphologic change in the structure of the cortical cell. The medical men in hospitals for the insane are still hampered by the inertia of custom and tradition and the persistence of the metaphysical conception of insanity, so that they continue to erect the phases and alternations in the manifestations of mental aberration into entities, to which they apply the terminology of metaphysics. It is unfortunate that the terms used to express facts and describe phenomena do not have the same significance to all who use them, and this laxity of definition is more marked in the terminology of psychiatry than in any other branch of medicine, because, in adapting the language of metaphysics, the nomen-

clature has not been used etymologically. Consequently, terms purely metaphysical in their significance are used to describe conditions or express conceptions based almost solely on the data supplied by the study of development, the formulation of physiologic experiment and the revelations of morbid anatomy and histology. Besides, the manifestations connoted by this metaphysical terminology imply the creation from the phases and alternations in mental aberration of conditions that are *sui generis*, independent of the heredity of the individual affected, his experience or influences in his environment. Whereas, we have only to study the conduct of the individual who is insane to know that the phases of his insanity represent reversions, the alternations, exaggerations and perversions of the normal cycle of mental activity, while the extent of the reversion, the rapidity and extremity of the alternations, will be determined by the degree of loss of mental capacity. Consequently there has been the failure to recognize the inherent inconsistency between the conception suggested by the metaphysical term used to define it and the nature of the data on which it is based. Therefore, the fact that the conditions with which we have to do in the definition of insanity are purely physical is lost sight of or ignored, with the resulting failure to recognize that mental aberration, in its clinical and pathologic aspects, has to do primarily with the potentiality of the nervous organization of the individual, and secondarily, with the perverted or defective processes of metabolism, as they affect the nutrition of the nervous system. In other words, we have to recognize that the degenerative process which makes mental aberration apparent is primarily a general one, affecting the vegetative functions.

The following statistical studies are concerned with all of the patients admitted to the hospital in St. Peter during the past nine years. The object of this method of study was to present all of the facts obtained from the careful examination of the individual patient when admitted, together with a record of the information obtained as to his condition before coming to the hospital.

So far as possible we have avoided arbitrary arrangement and have followed what seems to us to be the natural sequence in the description of the conditions found. The only arbitrary arrangement has been the division of the patients into four classes, representing the different degrees of defect present and the form in which the degeneration is manifested. We have classed as "unstable" all of those individuals, without regard to age, who have become insane and apparently completely recovered. Under the heading "primary degeneration" we have classed all those individuals who have become insane during the period of adolescence and who have not recovered. We class as "consecutive" those who have become insane during the period of adult life as the result of physical disease, mental or physical strain or overwork and who do not recover. Under the head of "senile degeneration" we class all those who become insane after fifty-five years of age and lapse into dementia.

Although this classification is apparently arbitrary, it really is not, except as to the assumption that all who become insane represent some degree of instability or defect.

Under "heredity" are classed those constitutional conditions usually described as diathetic, and which have been found to exist in the parents or near relatives of the patient.

Under "concurrence" is recorded the presence of diathetic conditions in other members of the family in the same generation.

Under "mental state" we designate the manifestations of mental aberration present at the time of admission, and in such terms as seem to us most primary and least liable to misinterpretation.

Under "form of sense perversion" we enumerate the manifestations of perversion in the special senses as we have been able to detect them. The same plan has been followed in the two other subheads of the second table. The statement of the manifestations of intellectual impairment as we have observed them, and the nature of the delusion that they represent.

In the third table is recorded our observation of the physical defects found and the affections of the general nervous system.

The other tables cover the result of physical examination and need no explanation.

These tables, and the methods of study involved in their preparation, have been in use long enough for us to formulate some conclusions as to their value as a means of record and their significance with relation to

proximately 13 per cent., were classed as senile degenerates.

In this study the term heredity is used to indicate any diathetic condition in the parents or grandparents that, on account of its interference with vitality, might result in the production of defective offspring.

One hundred and sixty-six men and 119 women had a neurotic heredity; 269 men and 212 women had a heredity of insanity; 135 men and 76 women had a heredity of alcoholism; 199 men and 170 women had a heredity of phthisis; 59 men and 70 women had a heredity of rheumatism; 72 men and 266 women had a heredity of cancer. Concerning 504 men and 416 women we could not obtain definite information, but what evidence there was, coupled with the history of their mental status, would have classed them relatively among the different subdivisions here given.

In the families of 126 men and 120 women there was a concurrence of insanity; in the families of 89 men and 50 women phthisis; in the families of 7 men and 13

TABLE 1.—GENERAL MANIFESTATIONS OF ABERRATION (MEN).

| Degree of Defect. | Heredity. | | | | | | | Concurrence. | | | Mental State. | | | Form of Sense Perversion. | | | | | | | Form of Intellectual Perversion. | | | Nature of Delusion. | | | | | | | | | | | |
|-----------------------|-----------|-----------|-------------|-----------|-------------|---------|-----------------|--------------|-----------|---------|---------------|-------------|-------------|---------------------------|-----------|------------|-----------|------------|---------|-----------|----------------------------------|----------|-------------------------|---------------------|--------------------|---------------|------------------|---------------------|--------------------|------------|--------------|---------------|-----------|------------|---------------|
| Form of Degeneration. | Neurotic. | Insanity. | Alcoholism. | Phthisis. | Rheumatism. | Cancer. | No Information. | Insanity. | Phthisis. | Cancer. | Epilepsy. | Rheumatism. | Excitement. | Depression. | Delirium. | Stupidity. | Dementia. | Olfactory. | Visual. | Auditory. | Gustatory. | Tactile. | Visceral Consciousness. | Sexual Excitement. | Sexual Perversion. | Not Apparent. | Grandiose Ideas. | Depreciatory Ideas. | Persecutory Ideas. | Confusion. | Religiosity. | Systematized. | Variable. | Undefined. | Not Apparent. |
| Unstable | 24 | 29 | 25 | 25 | 1 | 59 | 12 | 10 | 10 | 1 | 1 | 72 | 83 | 31 | 79 | 31 | 31 | 31 | 79 | 31 | 79 | 31 | 79 | 31 | 79 | 31 | 79 | 31 | 79 | 31 | 79 | 31 | 79 | 31 | 79 |
| Primary | 70 | 97 | 46 | 75 | 19 | 32 | 115 | 32 | 25 | 1 | 1 | 111 | 213 | 48 | 163 | 48 | 48 | 48 | 163 | 48 | 163 | 48 | 163 | 48 | 163 | 48 | 163 | 48 | 163 | 48 | 163 | 48 | 163 | 48 | 163 |
| Consecutive . . | 54 | 106 | 41 | 75 | 19 | 31 | 231 | 68 | 47 | 1 | 1 | 195 | 391 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | |
| Senile | 18 | 37 | 19 | 20 | 4 | 3 | 99 | 14 | 7 | 1 | 1 | 61 | 91 | 9 | 8 | 8 | 8 | 9 | 29 | 77 | 77 | 17 | 21 | 4 | 2 | 87 | 17 | 9 | 103 | 89 | 16 | 7 | 39 | 104 | 53 |
| Totals | 166 | 269 | 135 | 199 | 59 | 72 | 504 | 126 | 89 | 7 | 3 | 14 | 442 | 678 | 42 | 77 | 723 | 10 | 193 | 608 | 36 | 151 | 115 | 109 | 78 | 491 | 176 | 104 | 585 | 612 | 175 | 38 | 258 | 663 | 370 |

TABLE 1.—GENERAL MANIFESTATION OF ABERRATION (WOMEN).

| Degree of Defect. | Heredity. | | | | | | Concurrence. | | Mental State. | | Form of Sense Perversion. | | | | | | | Form of Intellectual Perversion. | | | Nature of Delusion. | | | | | | | | | | | | | | |
|-----------------------|-----------|-----------|-------------|-----------|-------------|------------|--------------|-----------|---------------|-----------|---------------------------|-------------|-----------|------------|-----------|------------|---------|----------------------------------|------------|----------|-------------------------|--------------------|--------------------|---------------|------------------|---------------------|--------------------|------------|--------------|---------------|-----------|------------|---------------|-----|-----|
| Form of Degeneration. | Neurotic. | Insanity. | Alcoholism. | Phthisis. | Rheumatism. | No Cancer. | Insanity. | Phthisis. | Cancer. | Epilepsy. | Excitement. | Depression. | Delirium. | Stupidity. | Dementia. | Olfactory. | Visual. | Auditory. | Gustatory. | Tactile. | Visceral Consciousness. | Sexual Excitement. | Sexual Perversion. | Not Apparent. | Grandiose Ideas. | Depreciatory Ideas. | Persecutory Ideas. | Confusion. | Religiosity. | Systematized. | Variable. | Undefined. | Not Apparent. | | |
| Unstable | 26 | 53 | 19 | 39 | 20 | 13 | 73 | 11 | 6 | 6 | 4 | 75 | 121 | 28 | 12 | 33 | 1 | 36 | 27 | 4 | 10 | 12 | 11 | 76 | 19 | 44 | 104 | 88 | 40 | 7 | 26 | 110 | 38 | | |
| Primary | 44 | 67 | 23 | 51 | 24 | 73 | 90 | 33 | 23 | 9 | 1 | 5 | 167 | 7 | 39 | 140 | 19 | 29 | 107 | 6 | 10 | 13 | 47 | 15 | 101 | 9 | 36 | 134 | 136 | 35 | 7 | 32 | 111 | 39 | |
| Consecutive . . . | 41 | 78 | 31 | 68 | 18 | 115 | 164 | 24 | 6 | 12 | 1 | 96 | 94 | 13 | 37 | 12 | 9 | 74 | 229 | 20 | 21 | 30 | 25 | 11 | 121 | 31 | 82 | 249 | 161 | 80 | 7 | 28 | 111 | 39 | |
| Senile | 8 | 14 | 3 | 12 | 3 | 65 | 89 | 16 | 6 | 1 | 1 | 40 | 72 | 3 | 4 | 21 | 105 | 12 | 21 | 53 | 20 | 6 | 12 | 5 | 1 | 58 | 11 | 22 | 79 | 61 | 15 | 6 | 20 | 60 | 37 |
| Totals | 119 | 212 | 76 | 170 | 65 | 263 | 416 | 120 | 50 | 13 | 10 | 11 | 266 | 454 | 50 | 109 | 516 | 17 | 160 | 416 | 38 | 47 | 67 | 88 | 35 | 356 | 70 | 194 | 566 | 449 | 170 | 42 | 156 | 486 | 232 |

insanity and its manifestations. The result of this method of study has been to determine the relation of the performance of the vegetative functions to mental activity in the insane, and the influence of disease conditions, or impaired functional activity in the body organs, in the production and maintenance of perverted mental activity, as well as the relation between chronic degenerative changes in these organs and similar changes in the brain.

From Jan. 1, 1894, to Jan. 1, 1904, there were admitted for the first time 2,366 persons; 1,429 men and 937 women. Out of this total, 165 men, approximately 12 per cent., and 181 women, approximately 20 per cent., were classed as unstable; 476 men, approximately 33 per cent., and 246 women, approximately 26 per cent., were classed as primary degenerates; 582 men, approximately 41 per cent., and 388 women, approximately 41 per cent., were classed as consecutive degenerates; 206 men, approximately 14 per cent., and 122 women, ap-

proximately 13 per cent., were classed as senile degenerates. It is interesting to note that in both heredity and concurrence, insanity and phthisis occurred with the greatest relative frequency. The association of cancer with the heredity and concurrence of so many of the women is also significant.

We note that 422 men and 266 women were excited; 678 men and 454 women were depressed; 42 men and 50 women were delirious; 77 men and 109 women were stupid; 442 men and 546 women were demented.

All of the patients who were depressed at the time of admission became excited in some degree before they recovered or lapsed into dementia, while all of the patients who were excited at the time of admission became depressed. Besides, those patients who were depressed at the time of admission, who recovered, and were again admitted, were excited in the beginning of the second attack, while those among them who were admitted for

the third time were again depressed. The converse of this alternation occurred in those who were primarily excited. Furthermore, in the small number of cases where it was possible to trace with a fair degree of accuracy the life history of the patient, it was found that there had been alternating periods of exaltation and depression from the period of puberty, increasing in intensity and becoming more prolonged as the individual grew older and the conditions in his environment more exacting. The final outbreak, which made the mental aberration apparent to his family, followed physical deterioration or the operation of some untoward experi-

piration and cardiac uneasiness arising from gastrointestinal distension, gives rise to ideas of poisoning, as does the fetid breath arising from nasopharyngeal disease, or the disagreeable gustatory sensations associated with a foully coated tongue; while the formations and paresis associated with neurasthenia and vasomotor disturbance suggest personal defilement or the passage of the electric current. Under the influence of physical states resulting in auto-intoxication, delirium or stupor develops, according to the degree of exhaustion in the nervous system. It was also noted that delirium was most common in those patients that were classed as un-

TABLE 2.—PHYSICAL DEFECTS AND AFFECTIONS OF THE NERVOUS SYSTEM (MEN).

| | External Defects. | | Reflexes. | | | | | | | | | | | | Gross Diseases of the Nervous System. | | | | | General Nervous Disturbance. | | | | | | | | | | | |
|-----------------------|-------------------|-------|--------------|-------------|--------------------|--------------|--------------|---------|------------|-------------|----------|------------------|--------------------|--------|---------------------------------------|-----------|------------|---------|-----------|------------------------------|-----------------|--------|------------|--------|-----------------|---------|--------|----------|----|----|---|
| | | | Asymmetry. | | General Deformity. | | Superficial. | | Knee Jerk. | | Pupils. | | | | Paresis. | | Paralysis. | | Tremor. | | | | | Spasm. | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Head. | Face. | Exaggerated. | Diminished. | Absent. | Exaggerated. | Diminished. | Absent. | Dilated. | Contracted. | Unequal. | Response Absent. | Response Impaired. | Local. | General. | Cerebral. | Bulbar. | Spinal. | Epilepsy. | Tongue. | Facial Muscles. | Limbs. | Intention. | Rest. | Incoordination. | Clonus. | Local. | General. | | | |
| Unstable | 7 | 60 | 2 | 10 | 20 | 47 | 80 | 21 | 9 | 39 | 1 | 17 | 19 | 23 | 104 | 4 | 5 | 1 | 34 | 149 | 31 | 125 | 106 | 15 | 55 | 33 | 10 | 14 | 25 | 3 | |
| Primary | 31 | 161 | 3 | 26 | 10 | 62 | 64 | 56 | 19 | 103 | 3 | 23 | 49 | 19 | 43 | 120 | 63 | 16 | 7 | 9 | 16 | 250 | 90 | 263 | 223 | 83 | 139 | 39 | 39 | 39 | 3 |
| Consecutive | 46 | 95 | 3 | 26 | 10 | 66 | 66 | 28 | 18 | 27 | 12 | 15 | 8 | 53 | 49 | 54 | 7 | 5 | 7 | 7 | 63 | 29 | 89 | 71 | 33 | 94 | 10 | 8 | 8 | 3 | |
| Senile | 7 | 67 | 4 | 5 | 5 | 86 | 66 | 66 | 28 | 18 | 27 | 12 | 15 | 8 | 53 | 49 | 54 | 7 | 5 | 7 | 7 | 63 | 29 | 89 | 71 | 33 | 94 | 10 | 8 | 3 | |
| Totals | 91 | 383 | 17 | 63 | 61 | 361 | 480 | 171 | 95 | 316 | 38 | 106 | 32 | 210 | 317 | 126 | 25 | 14 | 17 | 58 | 549 | 178 | 546 | 468 | 179 | 320 | 92 | 90 | 6 | 6 | |

(WOMEN.)

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|-----|-----|----|----|----|-----|-----|-----|----|-----|----|----|----|-----|-----|----|----|---|----|-----|----|-----|-----|-----|-----|----|-----|----|--|--|--|
| Unstable | 29 | 119 | 19 | 10 | 9 | 76 | 81 | 39 | 10 | 93 | 7 | 17 | 2 | 43 | 72 | 12 | 2 | 2 | 4 | 64 | 16 | 64 | 70 | 15 | 61 | 6 | 20 | 3 | | | |
| Primary | 52 | 153 | 27 | 5 | 15 | 73 | 112 | 33 | 15 | 110 | 1 | 25 | 4 | 60 | 105 | 3 | 1 | 1 | 25 | 90 | 21 | 75 | 75 | 34 | 61 | 9 | 36 | 18 | | | |
| Consecutive | 55 | 242 | 20 | 9 | 23 | 79 | 186 | 67 | 25 | 166 | 6 | 32 | 7 | 109 | 168 | 25 | 3 | 4 | 11 | 142 | 35 | 158 | 164 | 74 | 122 | 10 | 55 | 6 | | | |
| Senile | 13 | 80 | 18 | 3 | 3 | 76 | 53 | 26 | 10 | 32 | 11 | 14 | 7 | 57 | 52 | 19 | 6 | 2 | 5 | 47 | 17 | 47 | 55 | 18 | 60 | 11 | 17 | 15 | | | |
| Totals | 149 | 594 | 84 | 27 | 51 | 304 | 435 | 155 | 60 | 401 | 25 | 88 | 20 | 269 | 397 | 59 | 12 | 8 | 45 | 343 | 89 | 344 | 364 | 141 | 307 | 36 | 128 | 42 | | | |

ence, so that there was sufficient loss of mental capacity to deprive him of self-control.

We describe as demented only those patients in whom the mental reduction has gone so far as to make the loss of mental capacity the most conspicuous element in the insanity.

Ten men and 17 women had olfactory hallucination; 193 men and 160 women visual hallucination; 608 men and 416 women auditory hallucination; 36 men and 38 women gustatory hallucination; 151 men and 48 women tactile hallucination; 115 men and 67 women visceral consciousness; 109 men and 88 women sexual excitement; 78 men and 35 women sexual perversion; while in 491 men and 356 women the form of sense perversion was not apparent.

One hundred and seventy-six men and 70 women had grandiose ideas; 104 men and 194 women depreciatory ideas; 585 men and 566 women persecutory ideas; 612 men and 449 women were confused; 175 men and 170 women were the victims of religiosity.

We do not describe a patient as confused unless the confusion is the predominant element.

Forty men and 42 women had systematized beliefs; in 258 men and 156 women the beliefs were variable; in 663 men and 486 women the beliefs were undefined; in 370 men and 232 women the nature of the delusion was not apparent.

The mental state of the patient was always dependent on the form of sense perversion and the nature of the delusion. That is, those who heard or saw what was pleasing or gratifying were exalted; while those who heard, saw or felt what was disagreeable, or that suggested danger or misfortune, were depressed or excited. Sensations from diseased viscera, the embarrassed res-

table, and that the delirium was always preceded by a period of restlessness, insomnia and refusal of food, with the physical evidence of exhaustion.

In 91 men and 150 women there was asymmetry of the head; in 447 men and 594 women there was asymmetry of the face; in 17 men and 84 women there was general deformity.

TABLE 3.—PHYSICAL DISTURBANCES FOUND ON EXAMINATION (MEN.)

| | Impaired Nutrition. | | Renal Inadequacy. | | Insomnia. | | Acute Disease in One or More of the Vegetative Organs. | | Chronic Disease in One or More of the Vegetative Organs. | | Acute Contagious or Infectious Disease. | | Acute Alcoholism. | | Chronic Alcoholism. | | Narcotic Habit. | | Organic Structural Changes in the Nervous System. | | Consecutive Deterioration or General Organic Changes in the Nervous System. | | Active Changes in the Nervous System. | |
|-----------------------|---------------------|------|-------------------|-----|-----------|-----|--|-----|--|----|---|-----|-------------------|--|---------------------|--|-----------------|--|---|--|---|--|---------------------------------------|--|
| Unstable | 33 | 119 | 40 | 108 | 18 | 25 | 7 | 57 | 57 | 5 | 1 | 6 | 62 | | | | | | | | | | | |
| Primary | 176 | 317 | 69 | 193 | 47 | 61 | 6 | 5 | 5 | 1 | 6 | 68 | | | | | | | | | | | | |
| Consecutive | 263 | 445 | 80 | 334 | 109 | 116 | 10 | 76 | 76 | 8 | 15 | 262 | | | | | | | | | | | | |
| Senile | 117 | 154 | 4 | 112 | 63 | 84 | 11 | 24 | 21 | 1 | 2 | 147 | | | | | | | | | | | | |
| Totals | 609 | 1035 | 198 | 747 | 243 | 286 | 34 | 162 | 162 | 15 | 27 | 539 | | | | | | | | | | | | |

(WOMEN.)

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|-----|-----|----|-----|-----|-----|----|----|----|---|----|-----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Unstable | 106 | 167 | 24 | 134 | 33 | 42 | 8 | 10 | 10 | 6 | 12 | 49 | 6 | | | | | | | | | | | | | | |
| Primary | 117 | 210 | 10 | 165 | 30 | 26 | 9 | 10 | 10 | 6 | 15 | 26 | 1 | | | | | | | | | | | | | | |
| Consecutive | 237 | 326 | 41 | 260 | 69 | 94 | 23 | 6 | 6 | 3 | 31 | 164 | 6 | | | | | | | | | | | | | | |
| Senile | 89 | 167 | 11 | 94 | 25 | 47 | 18 | 5 | 3 | 1 | 10 | 109 | 3 | | | | | | | | | | | | | | |
| Totals | 549 | 810 | 86 | 650 | 157 | 209 | 57 | 19 | 19 | 9 | 69 | 348 | 16 | | | | | | | | | | | | | | |

In 63 men and 27 women the superficial reflexes were exaggerated; in 61 men and 51 women they were diminished; in 361 men and 304 women they were absent. The knee jerk was exaggerated in 480 men and 435

women; in 171 men and 165 women it was diminished; while in 85 men and 60 women it was absent.

In 317 men and 297 women there was local paresis; in 126 men and 59 women general paresis; in 25 men and 12 women there was cerebral paralysis; in 14 men and 8 women bulbar, and in 17 men spinal paralysis; 58 men and 45 women had epilepsy.

In 549 men and 343 women there was a tremor of the tongue; in 178 men and 89 women there was tremor of the facial muscles; in 546 men and 344 women there was tremor of the limbs; in 468 men and 364 women the tremor was with intention; while in 179 men and 141 women it was a rest tremor.

In 320 men and 307 women there was inco-ordination; in 92 men and 36 women clonus was present; in 90 men and 128 women there was some degree of local spasm; while in 6 men and 42 women the spasm was general.

was subinvolution. There were 333 cases of laceration of the cervix and 424 of laceration of the perineum. In 238 cases there was cystocele and in 229 rectocele. There were also a great variety of minor ailments present, as is shown in the tables. Severe pelvic trauma or extreme septic involvement were very uncommon. There were only 79 cases of disease of the ovaries, and none of destructive involvement of the pelvic viscera.

Even where pelvic disorder of some apparent severity was present no complaint was made by the patient, nor was there any evidence from the history accompanying her, that pelvic disease had been complained of or suspected by the family physician.

Treatment, both palliative and operative, however, was always efficient in improving the physical condition of the patient, and, to the extent that a source of irritation was removed, quieting her as well.

TABLE 4.—URINE ANALYSIS (MEN).

| | Chemistry. | | | | | | | | | | | | | | | | | | | | Microscopy. | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|-------------------|-------------------|-----------------|-----------------|---------------------|---------------------|----------------------------|----------------------------|----------------------|----------------------|------------------|--------------------|--------------------------|--------|----------|----------|------------------|------------------|----------|-----------|------------------|------|----------------------------|---------------------------|---------------|---------------------|----------------------|-----------------|--------------------|------------------|------------------|------------------|--------------|-------------|-------------------|----------------------|---------------|-------------|---------------|-----------|--------------|----|----|
| | Sp. G. Increased. | Sp. G. Decreased. | Urea Increased. | Urea Decreased. | Chlorids Increased. | Chlorids Decreased. | Phosphoric Acid Increased. | Phosphoric Acid Decreased. | Sulphates Increased. | Sulphates Decreased. | Indican Present. | Indican Increased. | Biliary Coloring Matter. | Sugar. | Acetone. | Albumen. | Primary Albumen. | Deutero Albumen. | Peptone. | Globulin. | Mucin Increased. | Pus. | Triple Phosphate Crystals. | Calcium Oxalate Crystals. | Sodium Urate. | Uric Acid Crystals. | Amorphous Uric Acid. | Granular Casts. | Epi-thelial Casts. | Leucocyte Casts. | Uric Acid Casts. | Bacterial Casts. | Fatty Casts. | Cylindrads. | Renal Epithelium. | Granular Epithelium. | Fibrin Bands. | Leucocytes. | Erythrocytes. | Sporozoa. | Aspergillus. | | |
| Unstable . . . | 111 | 15 | 10 | 100 | 32 | 18 | 9 | 7 | 4 | 11 | 25 | 61 | 53 | 43 | 21 | 69 | 10 | 10 | 10 | 4 | 38 | 4 | 32 | 1 | 4 | 142 | 4 | 14 | 14 | 1 | 1 | 1 | 1 | 10 | 1 | 1 | 11 | 18 | 3 | 3 | 1 | | |
| Primary . . . | 238 | 24 | 24 | 116 | 324 | 16 | 14 | 12 | 88 | 17 | 24 | 123 | 91 | 83 | 29 | 116 | 9 | 12 | 21 | 4 | 90 | 4 | 12 | 12 | 12 | 4 | 14 | 14 | 14 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| Consecutive . . . | 305 | 50 | 50 | 324 | 334 | 34 | 34 | 3 | 17 | 170 | 87 | 222 | 211 | 116 | 28 | 170 | 13 | 32 | 3 | 1 | 154 | 12 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | |
| Seuile . . . | 78 | 16 | 18 | 177 | 31 | 32 | 3 | 3 | 4 | 36 | 8 | 24 | 79 | 63 | 24 | 25 | 71 | 11 | 6 | 3 | 4 | 43 | 5 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 |
| Totals . . . | 792 | 105 | 120 | 614 | 264 | 147 | 70 | 49 | 338 | 28 | 154 | 185 | 420 | 266 | 153 | 436 | 52 | 27 | 30 | 16 | 320 | 18 | 34 | 32 | 52 | 83 | 63 | 74 | 13 | 28 | 22 | 3 | 3 | 154 | 24 | 18 | 55 | 138 | 15 | 19 | 4 | | |

TABLE 4.—URINE ANALYSIS (WOMEN).

| | Chemistry. | | | | | | | | | | | | | | | | | | | | Microscopy. | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|-------------------|-------------------|-----------------|-----------------|---------------------|---------------------|----------------------------|----------------------------|----------------------|----------------------|--------------------|--------------------------|--------|----------|----------|-------------------|-------------------|----------|-----------|------------------|-------------|----------------------------|---------------------|-----------------|---------------|----------------------|-----------------|--------------------|------------------|------------------|--------------|---------------|-------------------|----------------------|--------------------|---------------|-------------|---------------|--------------|--------------------|-------------|----|----|----|----|----|----|----|
| | Sp. G. Increased. | Sp. G. Decreased. | Urea Increased. | Urea Decreased. | Chlorids Increased. | Chlorids Decreased. | Phosphoric Acid Increased. | Phosphoric Acid Decreased. | Sulphates Increased. | Sulphates Decreased. | Indican Increased. | Biliary Coloring Matter. | Sugar. | Acetone. | Albumen. | Primary Albumose. | Deutero Albumose. | Peptone. | Globulin. | Mucin Increased. | Pus. | Triple Phosphate Crystals. | Uric Acid Crystals. | Calcium Oxalate | Sodium Urate. | Amorphous Uric Acid. | Granular Casts. | Epi-thelial Casts. | Leucocyte Casts. | Uric Acid Casts. | Fatty Casts. | Cylindricals. | Renal Epithelium. | Granular Epithelium. | Pelvic Epithelium. | Fibrin Bands. | Leucocytes. | Erythrocytes. | Aspergillus. | Tubercle Bacillus. | Monococcus. | | | | | | | |
| Unstable... | 85 | 42 | 32 | 80 | 29 | 33 | 10 | 21 | 27 | 6 | 39 | 36 | 36 | 28 | 84 | 13 | 19 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | | |
| Primary... | 94 | 56 | 12 | 137 | 17 | 33 | 6 | 17 | 53 | 7 | 32 | 45 | 34 | 21 | 102 | 10 | 9 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | |
| Consecutive... | 186 | 65 | 28 | 156 | 31 | 90 | 75 | 18 | 58 | 7 | 85 | 33 | 59 | 59 | 40 | 159 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 |
| Seuile... | 41 | 38 | 4 | 62 | 17 | 15 | 11 | 16 | 12 | 8 | 22 | 32 | 17 | 13 | 39 | 6 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | |
| Totals... | 406 | 201 | 66 | 435 | 94 | 178 | 102 | 72 | 118 | 30 | 158 | 232 | 146 | 102 | 404 | 66 | 57 | 104 | 20 | 213 | 9 | 29 | 10 | 61 | 1 | 8 | 99 | 66 | 47 | 4 | 33 | 17 | 138 | 70 | 35 | 20 | 50 | 190 | 13 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | |

With only occasional exceptions the manifestations of disturbance in the sensory and motor parts of the nervous system were what are usually described as functional, because they disappeared as the physical health of the patient was restored. However, the mimesis of focal and system disease in the general nervous system is very close sometimes, and the recovery from paralysis and contracture, after long periods, is apparently marvelous. This is especially true of those motor manifestations which are associated with the different forms of vasomotor disturbance occurring during the progress of chronic degenerative disease in the kidneys.

Among the 937 women, 233 suffered from some form of menstrual disorder; 443 had leucorrhea, but in the majority of these cases the discharge stopped promptly on the establishment of local cleanliness. In 408 women there was some displacement of the uterus, and in 222 of these cases there were adhesions. In 29 women there

Reference to the tables concerned with the physical conditions present at the time of admission will show that practically all of these patients were suffering from some kind of physical disease, most commonly malnutrition, perversion in the digestive processes and interference with the processes of elimination. The clinical histories in all of the cases included in this study also show that improvement in the mental condition of the patient was dependent on the elimination of these evidences of perverted metabolism, while in those cases where physical examination disclosed the presence of progressive organic degenerative processes, particularly those involving circulation and elimination, the prospect for mental regeneration was equally as hopeless as that for physical restoration; and in those cases where the degree of defect was so marked that dementia was coincident with adolescence, the evidence of arrested development or limited potentiality in other parts of

the organism was equally obvious, as shown in the statistical records concerned with primary degeneration.

In all of the cases there was some degree of mental reduction; and in those cases where excitement was present on admission, it had been preceded by a period of confusion and depression, while in those who were depressed there was antecedent confusion and irritability. The absence of intelligent observation on the part of the relatives of the patient precludes the obtaining of accurate information as to when the mental aberration first manifested itself; but so far as we have been able to determine from repeated and persistent cross-examination, it is safe to say that there had been periods of confusion, suspicion and dread for at least a year before the untoward conduct or overt acts of the individual made the nature of his condition manifest to his friends; because the degree of mental reduction had become so great that, under some special strain, inhibition was no longer possible, and the impulses, centrifugally generated, could no longer be controlled. For obvious reasons, the degree of defect in the nervous organization would determine the extent and permanence of the mental reduction and the order in reversion, as well as the rapidity of the progress of degeneration.

In the progress of degeneration some form of special sense perversion is always apparent. Most frequently auditory, next visual, then tactual and gustatory; and the two latter are most common in those cases where chronic disease involving the digestive tract or the eliminatory organs has been present for some time. The delusions which result grow out of the experiences of the individual which have been disagreeable, mortifying or disastrous, which his confusion and failing mental capacity lead him to associate with his immediate environment; and into consonance with which he interprets the language and conduct of his friends and associates. Introspection and morbid self-consciousness magnify and intensify all self-relations, while the neurasthenia, which results from the effort to overcome the constantly increasing confusion, develops an erethism which registers all impressions in a staccato key, and turns the every-day experiences and trials, heretofore borne with equanimity, into calamities; while the conduct of his friends and the attitude of those about him becomes pregnant with suggestion of accusation, denunciation or threat, and the resulting belief concerns that which has been anticipated and dreaded. Or else, as the result of that eesthesia which follows some forms of intoxication, grandiose ideas develop, which may degenerate into the phantasmagoria of acute exaltation, either material or beatific. Again, a dyesthesia may be present instead, accompanied by painful sensations, dread, fear, agitation or stupor.

The clinical significance of this method of study rests on the assumption that the mind, so called, is not an entity, and can not be treated directly. Also on the fact that the nervous system supplies nothing toward its own nutrition, and is not concerned in the elimination of the waste materials of its own functional activity, but is, on the contrary, dependent on the vegetative organs for its maintenance. It may also be assumed, in consonance with current hypotheses concerning the rôle of auto-intoxication in the production of disease of the nervous system, that the failure in the functional activity of those organs, which have to do with the elimination of waste materials from the general organism, would have a more important bearing on the development and persistence of insanity than would a similar failure in the functional activity of those organs having to do with the preparation of food materials for assimilation. In

| Unstable | Primary | Consecutive | Stable | Totals | |
|----------|---------|-------------|--------|--------|--------------------------------|
| 30 | 12 | 12 | 60 | 120 | Amenorrhœa. |
| 37 | 18 | 17 | 72 | 132 | Dysmenorrhœa. |
| 16 | 36 | 4 | 56 | 110 | Menorrhagia. |
| 1 | 1 | 1 | 3 | 3 | Metrorrhagia. |
| 1 | 1 | 1 | 3 | 3 | Irregular Menstruation. |
| 1 | 1 | 1 | 3 | 3 | Hymen Destroyed. |
| 1 | 1 | 1 | 3 | 3 | Hymen Intact. |
| 1 | 1 | 1 | 3 | 3 | Leucorrhœa. |
| 1 | 1 | 1 | 3 | 3 | Uterus Large. |
| 1 | 1 | 1 | 3 | 3 | Uterus Small. |
| 1 | 1 | 1 | 3 | 3 | Uterus Displaced. |
| 1 | 1 | 1 | 3 | 3 | Adhesions. |
| 1 | 1 | 1 | 3 | 3 | Uterine Fibroid. |
| 1 | 1 | 1 | 3 | 3 | Uterus Removed. |
| 1 | 1 | 1 | 3 | 3 | Uterine Cancer. |
| 1 | 1 | 1 | 3 | 3 | Subinvolution. |
| 1 | 1 | 1 | 3 | 3 | Ovaries Removed. |
| 1 | 1 | 1 | 3 | 3 | Pregnant. |
| 1 | 1 | 1 | 3 | 3 | Laceration of Cervix. |
| 1 | 1 | 1 | 3 | 3 | Erosion of Cervix. |
| 1 | 1 | 1 | 3 | 3 | Cystic Degeneration of Cervix. |
| 1 | 1 | 1 | 3 | 3 | Elongated Cervix. |
| 1 | 1 | 1 | 3 | 3 | Infantile Cervix. |
| 1 | 1 | 1 | 3 | 3 | Constriction of Inner Os. |
| 1 | 1 | 1 | 3 | 3 | Diseased Ovaries and Tubes. |
| 1 | 1 | 1 | 3 | 3 | Vaginitis. |
| 1 | 1 | 1 | 3 | 3 | Hypertrophy of Labia Minora. |
| 1 | 1 | 1 | 3 | 3 | Constricted Vagina. |
| 1 | 1 | 1 | 3 | 3 | Labia Minora Absent. |
| 1 | 1 | 1 | 3 | 3 | Laceration of Perineum. |
| 1 | 1 | 1 | 3 | 3 | Cystocele. |
| 1 | 1 | 1 | 3 | 3 | Rectocele. |
| 1 | 1 | 1 | 3 | 3 | Cyst of Bartholin's Gland. |
| 1 | 1 | 1 | 3 | 3 | Urethral Polypus. |
| 1 | 1 | 1 | 3 | 3 | Urethral Caruncle. |
| 1 | 1 | 1 | 3 | 3 | Cervical Polypus. |
| 1 | 1 | 1 | 3 | 3 | Fibroid of Cervix. |
| 1 | 1 | 1 | 3 | 3 | Cervical Fistula. |
| 1 | 1 | 1 | 3 | 3 | Perineal Fistula. |
| 1 | 1 | 1 | 3 | 3 | Recto Vaginal Fistula. |
| 1 | 1 | 1 | 3 | 3 | Anal Fistula. |
| 1 | 1 | 1 | 3 | 3 | Anal Fissure. |
| 1 | 1 | 1 | 3 | 3 | Ulcer of Meatus. |
| 1 | 1 | 1 | 3 | 3 | Hemorrhoids. |
| 1 | 1 | 1 | 3 | 3 | Prolapse of Rectum. |
| 1 | 1 | 1 | 3 | 3 | Hernia (Labial). |
| 1 | 1 | 1 | 3 | 3 | Retention of Urine. |
| 1 | 1 | 1 | 3 | 3 | Cystitis. |
| 1 | 1 | 1 | 3 | 3 | Protritis. |
| 1 | 1 | 1 | 3 | 3 | Contracted Pelvis. |
| 1 | 1 | 1 | 3 | 3 | Doulerin's. |
| 1 | 1 | 1 | 3 | 3 | Proteus. |
| 1 | 1 | 1 | 3 | 3 | Colon. |
| 1 | 1 | 1 | 3 | 3 | Pyocyaneus. |
| 1 | 1 | 1 | 3 | 3 | Subtilis. |
| 1 | 1 | 1 | 3 | 3 | Tubercle. |
| 1 | 1 | 1 | 3 | 3 | Syphilis. |
| 1 | 1 | 1 | 3 | 3 | Influenza. |
| 1 | 1 | 1 | 3 | 3 | Pneumococci. |
| 1 | 1 | 1 | 3 | 3 | Gonococci. |
| 1 | 1 | 1 | 3 | 3 | Branched Leptothrix. |
| 1 | 1 | 1 | 3 | 3 | Yeast Cells. |
| 1 | 1 | 1 | 3 | 3 | Molds, Common. |
| 1 | 1 | 1 | 3 | 3 | Blastomycetes. |
| 1 | 1 | 1 | 3 | 3 | Small Sp. Rillium. |
| 1 | 1 | 1 | 3 | 3 | Pyogenes Albus. |
| 1 | 1 | 1 | 3 | 3 | Pyogenes Aureus. |
| 1 | 1 | 1 | 3 | 3 | Streptococci. |
| 1 | 1 | 1 | 3 | 3 | Pneumococci. |
| 1 | 1 | 1 | 3 | 3 | Saccharomycetes Acidi Lactici. |
| 1 | 1 | 1 | 3 | 3 | Micrococcus Roseus. |

TABLE 5.—GYNECOLOGY.

Pelvic Disorders.

Bacteriology of Vaginal Discharge.

Bacilli.

Staphylococci.

this connection it should also be recognized that, as it is the principal function of the general nervous system to direct the activities of the rest of the organism, a failure in dirigent function would, of necessity, interfere with the normal activity of the vegetative organs, thus reducing their capacity for work, lowering the general vitality and further decreasing the capacity of the general organism for adaptation to external relations, by involving the retention, not only of the waste products of its activity, but also the generation of toxic substances from the food materials taken into the digestive tract. Finally, we have to consider that, while these conditions affect the majority of individuals in some degree, only a very small percentage of those affected ever become the victims of mental aberration or degenerative brain disease.

Our experience has taught us that, while the extent or degree of the mental disturbance is not necessarily in proportion with the amount and nature of the disease or functional failure in the vegetative organs, in those cases where the degenerative change in the general nervous system is going on, with progressive mental reduction, there is a similar process, developing *pari passu* in the rest of the organism, slowly and unequally in ordinary dementia, rapidly and comparatively uniformly in general paresis, insular sclerosis and hereditary chorea. From these observations it seems obvious that there must be involved in the development of insanity, not only the directly acting cause furnished by the environment of the individual, but also instability or defect in the development of the general nervous system, resulting in a limitation of its potentiality to a varying degree. Furthermore, the groups into which the various manifestations of insanity would naturally fall, would be made up of those individuals in whom there was the same relative degree of defect, and the variations among individuals in the different groups would be the obvious result of difference in experience and environment. In other words, mental activity must necessarily be correlated with all of the organic processes, of which it is the synchronous expression.

Primarily, then, we have to deal with the cerebral potentiality of the individual, as influenced by the conditions in his environment which exhaust this potentiality directly by overtaxation, or indirectly by the influence of impaired vitality in the general organism in further reducing the mental capacity of the individual. Next in importance comes the recognition of the fact that in any given environment the general conditions are practically uniform for all who are included; consequently, if these conditions are harmful to some of those who live under them, there must be some inherent weakness in the individual which unfits him to adapt himself to them, so as to conserve his own welfare. When this inability is in the direction of physical activities the result is apparent to every one; but, strangely enough, it has not been recognized as equally obvious that the lack of mental capacity which shows itself in imperfect control and incapacity for persistent effort, are evidences of instability and defect, and therefore the expression of a limited cerebral potentiality. A careful study of the natural history of insanity will show, also, that the mental aberration exists for a long time before it is manifested in the conduct of the individual, and it is a well-known fact that it may be present during his whole life, without materially interfering with his relations with those about him. What is it, then, which makes manifest the insanity? It is the loss of control of the activities that are manifested in conduct! And this loss of control

always follows in the wake of mental reduction; that is, the process of dementia. It is for this reason that those who are not familiar with insanity, from constant association with the insane, can not comprehend the existence of mental aberration unless it is manifested in bizarre conduct, or appreciate mental alienation that is not shown by criminal acts or imbecility. It is, for this reason, too, that degeneration is thought of as a result instead of as a process and dementia as a terminal condition only, instead of as a loss of mental capacity, which may be slight and transient or extreme and progressive. may be slight or transient or extreme and progressive.

Postmortem, in acute insanity, there is nothing distinctive; and the periencephalitis and encephalitis which may be present does not differ from inflammation in the brain and its membranes in those who are not insane. In a few cases, where a large trephine opening in the anterior portion of the skull has enabled us to study the appearance of the membranes and brain surface during life, the distended arachnoid space, flattened convolutions and the white streaks along the vessels did not differ materially from the postmortem appearance in dementia, except that after death the fluid is most commonly gelatinous. The most conspicuous change in the condition and appearance of the coverings of the brain results from the thickening and adhesion of the dura and pia along the median fissure. These adhesions and the fibrous increase interfere with the emptying of the pial veins, and narrow and lumen of the longitudinal sinus. While it is probable that some pial adhesion occurs in almost every one after 35 years of age, these adhesions are at the vertex. It is the progress of this adhesion forward and its extension laterally that is the most constant concomitant of progressive degeneration of the brain in the intellectual sphere. The peculiar arrangement of the lymph channels in the brain also adds to the difficulty, when the circulation is interfered with, so that autointoxication in the brain may be apparent and persistent, when there is no evidence that it is general; and the arrangement of the cortical blood vessels shows how stasis may be present when the general circulation in the brain is not interfered with. The thickening of the pia and the progressive occlusion of its vessels in certain areas explains how easily the nutrition of the cortex may be interfered with permanently, while the resulting lymph and venous stasis mechanically accelerates the progress of atrophy. So that, postmortem, we find flattened convolutions and shallow fissures. These changes are, however, general, not specific, nor peculiar to the insane, although always present in cases of terminal dementia.

In cases of dementia the frontal lobes, anterior to the precentral fissure, are always atrophied, and the extent of the atrophy is in definite proportion with the degree of dementia. This is the only constant macroscopic change in the brain in our experience, but there is usually associated with this shrinkage in the frontal lobes atrophy in the convolutions surrounding the insula, and this atrophy is usually most marked in the convolutions of the operculum. Next in order of frequency is dimpling over the angular gyrus and the superior parietal lobule.

The morbid histology of the brain, in those dying insane, is not only not distinctive, but, as I have shown,¹ similar changes can be produced in the lower animals by starvation and exhaustion. In terminal dementia the

1. "The Pathology of Delirium," American Journal of Insanity, October, 1903.

changes found are similar to those present in senility, only differing in degree and in the number of elements involved.

That which distinguishes the human being from other animals is his ability to appreciate the relation of self to environment, and that which distinguishes human beings from each other, is the extent to which this appreciation is developed, as shown by their conduct. In the light of current knowledge, both physiologic and pathologic, it is obvious that the mind, so called, is not an entity, but, on the contrary, is constituted in the cognition and relation of the impressions which come to the brain through the special senses, and is manifested in the direction of the resulting activities that are concerned with the maintenance of the individual. The recognition and re-relation of the impressions that result from these activities is a more complicated process, and is best described by the term *intellection*, because it has to do with the correlation of recent and pre-existing impressions as they affect the welfare of the individual.

The intellectual horizon of the individual is necessarily limited by his mental capacity, while its extent will be determined by his environment and the nature of his experiences. The same response would not be expected from the individual of limited capacity and no culture as from the keen intellect highly cultivated; nor would the definition of their experiences be equally valuable with relation to their individual welfare. Mental activity is not persistent indefinitely on the same plane any more than is physical activity. That is, there is a cycle consisting of the normal plane of activity, out of which develops a period of exalted activity, to be followed by a more or less gradual fall to the subnormal and the return to the normal. These variations are most apparent and extreme during adolescence, most conspicuous in the unstable, and they may be aberrant in the order of their recurrence. The persistence of the normal plane of activity is also dependent on the physical condition of the individual. Vigor will prolong the exaltation of capacity, while lowered vitality will intensify the depression from the normal plane. Besides, under certain conditions representing strain or exhaustion in the nervous system, a rapid variation in the complements of the cycle may occur, with entire disappearance of the normal plane of activity. Therefore, there is represented in the phases and alternations in the mental activity of the ordinary individual all of those manifestations which, when extreme, are described as the evidences of insanity. That is why confusion is the first manifestation of insanity, to be followed by aberration of relation, which results in special sense perversion, that, in its turn, forms the substantive basis for delusion, and the centrifugally generated impulses by which it is manifested. The emotional manifestations are the obvious sequence and the natural result of the character of the ideas generated, the form of the belief and its definition with relation to the welfare of the individual. However, it is only when the mental reduction has gone so far, and the confusion has become so great, that the individual ceases to be able to recognize and re-relate the impressions coming through the senses from his environment, and properly co-ordinate the activities involved, that he loses control of himself to the extent that his condition becomes apparent to those about him.

All manifestations of motion in the human organism, outside of those automatically generated to meet the demands of the vegetative processes and avoid obvious sources of danger, are in response to the impressions re-

ceived from the conduct of others, and their relation with similar pre-existing impressions, as they have generated and been manifested in our own conduct. Mental activity, then, as ordinarily understood, is manifested in the cognition and relation of the impressions received from our environment of the conduct of others in comparison with our own. The capacity to do this evidences our power of attention, while the ability to persist must necessarily be dependent on the vitality of the general organism. Any failure in this process would mean confusion and inco-ordination from incomplete relation, just as is shown in the motor sphere in locomotor ataxia, chorea or athetosis.

Just as the ordinary processes included in the manifestations of consciousness in the same involve, first, the impression through one of the senses, to be followed by impression through one or more of the others; then the picture formed by the process of relation, the fitting in and combining with analogous pre-existing impressions, the persistence of the picture, its proof by comparison with others, as well as its consonance with like processes in other individuals. So, in the insane, there are like processes going on in the same regular sequence, the result differing because of the perversion of the elements of the cognition, while the aberrant functioning of the brain in the re-representative processes leads to incongruous arrangement and confusion. The sequence is complete in the belief which results from the persistence of the confusion and inco-ordination.

The natural history of insanity shows that mental perversion and aberration are concerned with the first and simplest of these processes, while mental reduction implies loss of capacity to carry out the more complex processes. In other words, mental perversion and aberration are always related with those forms of activity which have for their function the cognition of the purely animal relations; that is, they are concerned with the simplest forms of impression through the senses, while the loss of mental capacity affects the processes of intellection. In the lower types of mental development there is a more or less complete absence of intellection, so that the individual is easily confused by mental effort, sensual hallucination is very common, and is manifested in superstition, taking the form of religiosity, the seeing of ghosts, infliction by witchcraft, the administration of poison, etc.

All of us hear sounds, see objects, perceive odors and tastes which we attribute to something else than their real origin. We are subject to disagreeable tactual sensations and to visceral consciousness. Again, under the influence of fatigue, mental or physical, there is the tendency to lapse into self-consciousness and introspection, with the resulting doubt and suspicion, which is the characteristic of the child and the imbecile. The actions of others, heretofore a matter of indifference, take on a new meaning and significance. And, if the circumstances which determined the morbid introspection were mortifying or distressful, we become furtively suspicious and resentful. However, experience and the evidence of demonstration correct our false impressions. But, in the presence of limited cerebral potentiality, under these same conditions, the transition from temporary to persistent confusion would be easy, and the aberration resulting so marked as to materially interfere with the welfare of the individual and his relations with those about him.

The following conclusions seem to be warranted by the data presented: In dealing with insanity and its manifestations we are concerned with the cerebral po-

tentiality of the individual in considering its nature; with heredity and environment in determining its form and sequence; while the evidence of the involvement of the general organism in the degenerative process must be our guide in anticipating its progress and termination.

DISCUSSION.

DR. G. R. CLARK, Dearborn, Mich., said that, so far as the clinician is concerned, Kraepelin's work has enabled him to classify insanity much better than he could previously. Kraepelin has taken the psychologic view that certain groups of symptoms mean certain things. Take, for example, dementia præcox. The mannerisms are not stereotyped, but the condition includes a liability to impulse simply by the term dementia præcox. It makes no difference what the clinical picture may be. One person may have an impulse to touch the tip on his nose, while another may have an impulse which deters him from doing things, but the underlying cause is the same. Kraepelin calls attention to the fact that the catatonic mannerisms and excitement are two entirely different things from a psychologic point of view. The constitution of the United States declares that every man shall be born free and equal. There never was a bigger lie written, from an embryologic standpoint. Every man that is born has tissue instability, and that we all recognize. Is it not quite possible, aside from assuming instability at the time of his birth, to say that a man is unstable from the very beginning in embryo in certain definite cases? The individual may be brought up with glandular clubfoot. We are only commencing to learn a little about glandular pathology. We know that there is a certain kind of insanity in Addison's disease. We have not seen enough of it, and it has not been studied sufficiently for us to know exactly what the symptomatology is. Dr. Clark thinks that the different tissues in the body are elaborated by distinct secretions. For instance, the thyroid gland has to do with the ideal function of the body. Furthermore, over-exertion of that gland produces exophthalmic goiter. He suggested that the glands of Douglass have something to do with the production of these mental conditions. From the pathologic point of view, some disturbance can be demonstrated in the metabolism, in the perspiration and in the other excretions. We can find indican in the urine and we notice the peculiar odor, and can say it is potassium sulphate or something of that sort, but are we exactly sure that there is not some little volatile product, some animal elimination, present which may have much to do with the symptomatology?

DR. H. G. BRAINARD, Los Angeles, said that insanity is based on two general conditions: First, that of nervous instability, and, second, that of stress. The nervous stability, of course, may be interfered with by any condition, perhaps by heredity, from the embryo, as has been suggested, and, again, by things which come later in life, as acute or chronic diseases, and, still further, by the stress of every-day life and the disturbances of metabolism. One person with a well-balanced nervous system may stand all sorts of stress without any insanity, but the man who starts out in life with an unstable nervous system is easily upset by any disturbance in metabolism.

DR. J. H. McBRIDE, Pasadena, Cal., said that it is fortunate that Thomas Jefferson was not an embryologist. If he had been, he would not have written the Declaration of Independence. He did not mean that all men were equal mentally or morally, but that they were, or should be, equal before the law. Medical literature is much indebted, in its terms and even in its conceptions, to Herbert Spencer, who, among other things, showed how degeneration works in organic beings, how it undoes, step by step, the work of organization. As our mentality has been an evolution, as its physical basis has been built up from the simple to the complex, in ever-increasing intricacy of structure, so insanity, being a degeneration, begins at the highest and last evolved and undoes in reverse order the work of evolution. No classification of insanity is satisfactory. Those of Dercum and Kraepelin are perhaps the best.

DR. H. A. TOMLINSON, St. Peter, Minn., said that unfortu-

nately he had to pass over that part of his paper which gave the reason for the classification used, so that the basis for this method of classification is not apparent. The objection to the classification that is so popular at present in this country is that metaphysical terms are used to describe physical conditions; and not only that, but the phases and alternations in mental activity which, in their ordinary manifestations, are normal, are grouped together and classed as entities. Any one who has lived with the insane and watched them closely knows that every form of mental disturbance included in the classification referred to may be present during the course of the insanity of any given individual. For example, take the terms excitement and depression: Properly used they describe states of feeling, not forms of disease, and they are dependent on some antecedent impression, either from the environment of the individual or centrifugally generated. Excitement or depression, however, can not differ in kind; they can only vary in degree, and in all cases of insanity excitement and depression are the most common manifestations of mental disturbance. Back of the excitement or depression are the confusion and sense perversion that gave rise to them. In Dr. Tomlinson's experience the greatest harm in the metaphysical classification of insanity and the concentration of attention on the manifestations of mental aberration, is its effect on the physician unfamiliar with insanity. He bases his diagnosis on nothing, and in his treatment chases the will-o-the-wisp of mental entity. Again, there is a method of classification that would assign certain forms of mental disturbance as the result of certain forms of physical disease, such as cardiac, renal, septic, etc., losing sight of the fact that among the vast number of people who suffer from these disease conditions only a very few show any evidence of mental disturbance. People become insane, why? Because of defective nervous organization, and not because of the cardiac or renal disease. The physical disease simply upsets the unstable nervous organization. It is the same with degeneration. This condition represents the antitheses to development, and while it may vary in degree, or in the rate of its progress, it does not differ in kind. Besides, no matter what may have been the cause of the process of degeneration, the histologic changes that result will be the same kind, differing only in degree. Dr. Tomlinson has been able to demonstrate that the histologic changes found postmortem in acute insanity manifested in depression or excitement, and in the brains of those who were not insane, but died in the delirium of typhoid fever or septicæmia, were not only the same in kind, but also in degree. He has also produced the same conditions in animals by bringing about death from starvation and exhaustion. It is for these reasons that he advocates a classification of mental aberration that shall be based on the cerebral potentiality of the individual as shown by the degree of instability or defect present; and a method of treatment based on the clinical study of the physical conditions present, and not on the form or nature of the mental disturbance.

DR. WILLIAM HOUSE, Portland, Ore., called attention to a statement made by Dr. Tomlinson in the discussion that there is no such thing as insanity due to heart failure. Dr. House is quite willing to agree that there is no specific form of insanity limited to disease of the heart, and yet he insists that disease of the heart, of the kidneys or of almost any other organ, unquestionably may act as a cause of true insanity. It is unfortunate that this is not more frequently insisted on, for, after all, results must be achieved not so much by therapeutic attention to the purely psychologic details as to the physical causes underlying them, and to the inability to grasp this relationship we owe many of our failures to achieve good results in the treatment of the insane.

Reproduction of Bony Structures by Mammals. At a meeting of the London Zoological Society, according to *Nature*, Mr. Oldfield Thomas exhibited a specimen showing a partial regeneration of the caudal vertebra in a dormouse. Other specimens had been obtained showing similar regeneration and proving apparently that the partial reproduction of bony structures not hitherto observed in mammals, was possible in the dormouse (*Graphiurus*).

AUTOLYSIS.*

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TISSUE DISINTEGRATION.

The most constant property of living matter is disintegration. This precedes every other manifestation of life of the simplest and of the most complex animated organism. The development of a fertilized egg begins with disintegration of its original structure. When the egg is placed under conditions which make the initial disintegration impossible, life remains suspended. Disintegration also is the most lasting property of living matter, for when all other functions are extinct this property is still in evidence, and, if conditions are favorable, the disintegration proceeds until all that could remain of organization or of structure disappears, giving place to a mixture of organic and inorganic substances.

Disintegration of organic matter present in the cells and tissues is also the primary source of that form of vital energy which controls most functions of a living organism. Contraction of muscle, secretion of glands, peristaltic movements of the gastrointestinal tract, growth and reproduction of an organism, are possible only so long as the breaking-down process continues. This has been realized by physiologists at all times. However, the mechanism and the exact nature of the chemical reactions associated with animal functions has never been very clear, and even to-day the question remains a topic of considerable controversy.

Lavoisier was the first to emphasize strongly the similarity between the chemical reactions in the living organism and those in the process of combustion. Ever since that time physiologists have adopted the term combustion in order to signify the chemical reactions in the organism which result in the production of animal energy. Physiologists speak of burning or non-burning in the human or in the animal body of proteid, fat or sugar, of burning of the body tissues and of body cells. Indeed, the ultimate products of the reactions in the body are very similar to those on the burning of carbonaceous material. Carbon dioxide, water and heat are formed in both instances. However, there has always existed an utter lack of information regarding the agents causing the powerful oxidation of organic material in the animal body. The simplest way out of the difficulty seemed to ascribe the power of combustion to a peculiar property of the living cell.

In recent years there has accumulated a great number of observations tending to show that various functions previously regarded as the result of life, as the result of cell assimilation and disintegration by the animal tissues, are actually occasioned by substances which can be isolated from the living cell. An instance illustrative of this statement is found in the work on alcoholic fermentation. Formation of alcohol from grape sugar by the yeast cell was regarded as a chemical reaction brought about by the activity of the cell. Alcohol thus was considered a catabolic product of cell metabolism. Mme. Manassein, and more convincingly Buchner, have demonstrated that from the cell can be obtained one substance which is capable of accomplishing the alcoholic fermentation of sugar in the same manner as the living cell. This startling discovery marks a radical change in our conception of the process of life.

For centuries it was thought that the activity of a complex organism was needed to manufacture spirits out of grape sugar, and the foregoing work demonstrated that the cell may be crushed, its life may be extinct, and one substance soluble in water may be extracted which possesses the power to accomplish the work of the entire cell. True, the substance is of a very subtle nature and needs to be handled with great care. It does not resist the action of heat and other strong chemical and physical agents, but while intact it is capable of inducing chemical reactions into which it apparently does not enter itself, and thus is capable of performing work out of proportion to its own mass. Substances endowed with this power are designated enzymes or ferments. The work of Buchner caused a very intense interest to be directed toward the older and unsystematic work on the enzymotic processes in the cells of the simple and complex organisms.

As already stated, the source of all vital and animal energy lies in tissue disintegration, and the prevailing conception has been that the disintegration was brought about by the power of the living cell to burn its own components. It is the great merit of Salkowski to have shown that a cell or tissue in which all visible signs of life have disappeared still retains the power of self-dissolution, of self-disintegration, of autolysis. True, the phenomenon had not escaped the observation of earlier workers, and in 1871 Hoppe-Seyler wrote:¹ "All organs suffering death within the organism, in the absence of oxygen, undergo softening and dissolution in a manner resembling that of putrefaction. In the course of that process, albuminous matter gives rise to leucin and tyrosin, fat to free acids and soaps. This maceration, identical with the pathologic conception of softening, is accomplished without giving rise to ill odor, and is a process similar to the one resulting from the action of water, acids and digestive enzymes." In 1874 the French chemist, Schutzenberger² observed similar changes in yeast which had been allowed to remain for from 12 to 15 hours in water suspension at a temperature of from 35 to 40 C.

However, before going into the details of the chemical analysis, attention has been called to the structural, morphologic changes which cells and tissues undergo when they are placed in conditions which do not permit continuation of life. It is well known that animal tissues and organs are readily invaded by micro-organisms, causing putrefaction. The application of the recent methods of aseptic surgery allows the removal of organs from the animal body and the preserving of them free from all contamination with micro-organisms. Hauser,³ as well as Rindfleisch and Meissner previous to him, succeeded in preserving tissues for months and years free from infection with any bacteria. In organs kept in absolutely sterile condition Hauser observed general softening, and microscopically he noted the destruction of the most typical structural part of the cell, of the nuclear material, and decay of the mass of the cell, made apparent by the development of changes which are designated by pathologists as fatty degeneration.

Thus the term softening is not merely a figure of speech, but applies to an actual occurrence. This is made evident particularly through the work of Schutz-

1. *Tubinger Med. Chem. Untersuchungen*, 1871, p. 499.

2. *Compt. rend.*, vol. lxxviii, and *Bull. de soc. chimique*, vol. xxi, p. 204.

3. *Arch. f. exper. Path. u. Pharm.*, vol. xx, p. 162, 1886.

* The fourth lecture in the Harvey Society course, delivered at the New York Academy of Medicine.

enberger and the workers who followed him. Normal fresh organs on extraction with boiling hot water give off only a small fraction of their constituents, while those that have undergone the process of softening allow a very considerable part of their substance to pass into the boiling water. Thus, fresh yeast on boiling with hot water leaves a residue consisting of from 20 to 21 per cent. of its original weight, while the residue of yeast kept in water for from 12 to 15 hours does not exceed 13 per cent. However, in the experiment of Hauser, although the tissues were placed in conditions unfavorable for continuation of life, death set in slowly, and the possibility is not excluded that the softening was accomplished by the vital force not yet completely extinct. Also in the experiments of Schutzenberger this possibility was not excluded; besides, yeast always contains bacteria and it is difficult to separate the part of the changes wrought by the action of micro-organisms from that induced by the surviving yeast cell.

Salkowski was the first to preserve the material employed in his experiments under conditions which checked all other functions, leaving unassailed only the one of dissolution, in conditions in which bacterial growth was impossible. This was achieved by the use of chloroform water instead of the pure. Salkowski repeated the experiments of Schutzenberger on yeast and arrived at the same conclusions as the first observer. He extended the work to animal tissues, using the liver and muscle. The results are best seen in the following table:

| From 1,000 grams of liver were extracted by hot water | Autolysed organ. | Control. | Difference. |
|--|---------------------|------------|-------------|
| Organic substance..... | 45.97 gms. | 33.73 gms. | 12.24 gms. |
| Ash..... | 7.95 gms. | 7.21 gms. | 0.74 gms. |
| Phosphoric acid..... | 1.957 gms. | 1.359 gms. | 0.598 gms. |
| Nitrogen in form of nitroge- ous substances..... | 6.239 gms. | 3.152 gms. | 3.087 gms. |

In the main experiment the finely-divided organ was mixed with three times its weight of chloroform water and allowed to stand and at given intervals analyzed. In the control experiment the organ was heated and then further treated in the same manner as in the principal experiment. The table clearly shows that, on standing, substances soluble in hot water have developed in the organ. Very similar changes occur in tissues subjected to the influence of digestive enzymes, either in the digestive tract or outside of the body. Because of this analogy Salkowski introduced the term "self-digestion" in order to designate the process occurring in tissues allowed to stand under antiseptic conditions. For reasons which will be made clear in the course of the discussion, the process later was named by Hofmeister "autolysis."

Thus the researches of Salkowski have established the fact that tissues, placed in conditions which do not allow contamination with live matter, undergo changes resembling those occurring during process of digestion; but they offered no information regarding the rôle played by the process in the economy of the organism, in those transformations of matter which create and maintain life. It was still undecided whether or not the capacity of self-digestion was a universal property of all tissues. The probability was not excluded that the autolysis of an organ was brought about by the action of enzymes absorbed from the gastrointestinal tract and transported to the various organs. The researches following those of Salkowski endeavored to give an answer to those questions. The solution of the first problem was comparatively an easy matter. It required only to repeat his experiments on various other organs. This was accomplished most successfully by the efforts of Hedin and Rowland.⁴ It may be noted here that the last two inves-

tigators employed in their experiments not the entire tissue nor the tissue extracts, but the plasma of the organs. In this manner they made certain that no cellular elements were playing any part in their experiments and that the reactions were caused by a soluble substance present in the plasma. Previously Schwiening,⁵ a pupil of Salkowski, had established the same fact by employing filtered tissue extracts. The work was further extended by Martin Jacoby⁶ and by Stookey and myself.⁷ As a result of all the work it may be regarded as established that the power of self-digestion is shared equally by all organs. The solution of the second problem, namely, of the origin of the autolysing power, required more ingenuity and perhaps more work. Attempts were made to obtain the desired information in various ways. If the digesting power present in the organs is due to a substance derived from the pancreas, the autolysis of organs must be influenced by the same factors in the same manner as pancreatic digestion; further, if that assumption be correct, one would expect to find among the products of autolysis those substances which arise on tryptic digestion.

Matthes sought to solve the question by removing the pancreas from dogs and studying the self-digesting power of their organs. The chemical composition of animal organs is very complex, but the pancreatic gland is capable of disintegrating all the principal tissue constituents, although it resorts to a different mechanism, perhaps to a different substance, for the digestion of the individual substance. The principal components of tissues are albuminous material, carbohydrates and fats. In the course of self-digestion all these components are disintegrated, and it is a matter of convenience to discuss separately the change which each of the components undergoes in the course of autolysis. Of all enzymotic processes that resulting from the breaking up of the proteid molecule has been studied in the greatest detail. For this reason the study of the proteolytic action of organs was employed for the investigations into the origin of the autolytic power of tissues.

Two proteolytic enzymes of distinct individuality have always been known—pepsin, elaborated by the glandular apparatus of the stomach, and trypsin, formed in the pancreatic gland. The principal point of distinction between the two substances is that one requires for its action the presence of acid, while the other is most active in the presence of alkali. Further, it has generally been accepted that pepsin is incapable of producing the same degree of cleavage as trypsin. The formation of crystalline products of amino-acids has been noted only on tryptic digestion. Most typical for the cleavage by the ferment of the pancreatic gland is considered the appearance of a substance giving a peculiar color test with bromin, named tryptophan. In the course of digestion by either of the two enzymes, albumoses and peptones are formed.

Biondi, a student of Salkowski, has noted that the proteolytic action of the liver is facilitated by the presence of acids. This difference in intensity of digestion under the two different conditions is made very conspicuous by the following table:

| Out of 1,000 gms. of liver passed into solution. | Experiment 1. With 0.28 HCl. | Experiment 2. Without HCl. |
|---|---------------------------------|-------------------------------|
| Organic substances..... | 100.10 gms. | 59.6 gms. |
| Ash..... | 26.90 gms. | 11.12 gms. |
| N. in nitrogenous substances.... | 11.76 gms. | 7. gms. |
| Albumose..... | Trace. | Trace. |
| Pepton..... | None. | None. |

5. Virchow's Archiv., xxxvii, 1894.

6. Zetsch. f. phys. Chem., vol. xxi, 1900.

7. Jour. Med. Research, vol. x, 1903.

The conditions influencing the intensity of autolysis were studied in greater detail by Hedin and Rowland,⁴ whose investigations were made on tissue plasma obtained by Buchner's method. It was established by these writers that the self-digestion of the majority of organs is facilitated by the presence of 0.25 per cent. of acetic acid and is depressed by the presence of alkalies, by calcium carbonate and magnesium oxid. The only deviation from this, according to Hedin and Rowland, is in the muscle tissue, where the intensity of digestion is not affected by the presence of alkali or acid. On the other hand, cardiac muscle is subject to the general rule of autolysis. The autolysis of nerve tissue, and of the testes also, is facilitated by the presence of acid, as was demonstrated by Stookey and myself.

These observations are important, for the reason that they make very improbable the supposition that self-digestion of tissues is caused by trypsin deposited in the organs by the blood supply. On the other hand, Salkowski, in his early work on autolysis, has noted the appearance of leucin and tyrosin, and in this respect the proteolytic action of animal tissues resembles tryptic digestion. Contradictory to this seemed the observations of Biondi.⁸ This author could not detect tryptophan in the experiments in which the absence of bacterial growth was made certain. Another peculiarity of the autolytic cleavage noted by Biondi is the comparatively insignificant formation of albumose and of peptone. Jacoby also, in his very exhaustive study on autolysis, invites special attention to the foregoing difference between tryptic and autolytic digestion. On the other hand, Jacoby demonstrated tryptophan among the products of self-digestion of tissues. Thus the chemical process of autolysis bears some resemblance to either form of digestion, peptic and tryptic, and yet is different from each of them. This alone makes it very probable that animal tissues do not borrow their power of disintegration from either gastric or pancreatic gland, and that self-digestion is one of the general properties of living or, rather, surviving organs.

Additional evidence in support of these assumptions was brought forward by Matthes.⁹ It is well known that urine of normal individuals contains a proteolytic enzyme resembling pepsin. Matthes demonstrated that after the removal of the stomach of dogs the enzyme ceases to be eliminated by the urine. It was natural on the basis of this experiment to view the stomach as the source of the urinary pepsin. The same method of investigation was applied by Matthes to the study of the origin of the self-digesting power of organs and tissues. Dogs were deprived of their pancreas and allowed to recover from the operation. The organs were then examined for their proteolytic power. No difference could be detected between the organs of the normal and those of the operated animal. Thus, all evidence seemed unanimously to support the view that self-digestion is a constant property of surviving tissue.

However, for the interpretation of the rôle of this function in the economy of the living organisms, it still remained to be established whether or not the process of self-disintegration takes place also in life. Jacoby⁶ was the first to give experimental trial of the question. For this purpose he performed on dogs the following operations: The hepatic artery and the portal vein were ligated and, after several hours, the liver was extirpated and analyzed for amino-acids. Leucin and tyrosin were found to be present. Further, he

obtained the same results on ligating a part of the liver. These substances were also obtained by Jacoby from organs extirpated aseptically and kept under conditions in which contamination was impossible. It may be remarked that all these methods are open to some objections. More convincing seems to me the analysis of the developing organism. It has been known for some time, through the work of Schulze and his pupils, that in the course of germination and growth of plants, substances appear which arise also on proteolytic digestion of the seeds. I have made a similar observation on the developing egg of fish and of fowl.¹⁰ In the course of development of the egg one can notice the breakdown of the albuminous matter and the appearance of products of the nature of nitrogenous acids.

So, at the present time, there is sufficient evidence for the assumption that disintegration or self-digestion is a constant occurrence in living as well as in surviving tissues. However, there is still a lack of information regarding the rôle of this function in the mechanism of life. In the animal tissue, organ or cell one has to distinguish two different parts, one representing the organized mechanism controlling its function, the other consisting of various organic substances stored up or deposited in the organs, as a supply of fuel material. Blood plasma and lymph, which envelop every part of the organ, are not integral parts of its tissue. They only furnish the material which the organ may or may not use. White of an egg and the greatest part of its yolk are only building material for the developing organism.

In physiology there are two views regarding the production of animal energy. One is that a substance can not be utilized by a living cell unless it has been assimilated and transferred into organized cell substance. Liebig was the author of this theory and Pfüger most vigorously defended it. On the other hand, Carl Voit claimed that in higher organisms the principal supply of fuel material is furnished to the organs by the blood. The albuminous matter carried to the organs was named by Voit "circulating proteid." Opinions on the subject are still divided and it is possible that in a way both views are correct.

Since there was some foundation for the view that the process of autolysis is the one which controls tissue disintegration, it seemed important to make clear whether or not the mechanism is capable of breaking down albuminous matter derived from other sources than that of its own body substance. The first observation in this direction was made by Theobald Smith, who noted that fresh tissues removed from the organism under aseptic conditions were capable of digesting gelatin. On the other hand, Martin Jacoby¹¹ noted that during the process of liver autolysis, of the proteids, only the globulins suffered a disintegration; and in a later work he observed that the self-digesting liver was completely incapable of digesting lung tissue. Thus, on the basis of this work, one would be led to the view that the process of autolysis is incapable of causing the digestion of circulating proteid, and that the two processes are totally independent one of another. However, Hedin⁴ has shown that the spleen possesses the power to digest not only its own proteid material, but also the proteids of the blood. Thus the question still remains an open one.

PRODUCTS OF TISSUE DISINTEGRATION.

The work thus far reviewed possessed primarily theoretical interest only. It aimed to elucidate the mechan-

8. Virchow's Archiv., vol. cxlv, 1906.

9. Archiv. f. exp. Path. u. Pharm., vol. II, 1904.

10. Zeltseh. f. phys. Chem., vol. xxxv, 1902.

11. Zeltseh. f. phys. Chem., vol. xxx, 1900, also vol. xxxIII, 1903.

ism controlling the disintegration of tissue components in the living and in the surviving organs. Nevertheless a detailed knowledge of the products of tissue autolysis is of importance from the standpoint of practical medicine. In the human organism, as well as in that of many animals, all substances which are consumed as food and nourishment, no matter how greatly they differ in their chemical composition, are finally broken down into a few very simple bodies which are rejected by the organism through the kidneys, bile and other excretory mechanisms. Urea and carbonic acid are the two substances into which nearly all foodstuff is transformed. In a complex organism the metamorphosis is a gradual process. Before a nitrogenous substance is transformed into urea it undergoes numerous degradations. Before sugar is oxidized to carbonic acid it suffers numerous changes. Further, it is not improbable that in a very complex organism individual organs are concerned only in one definite phase of the transformation, leaving the other organs to continue and to complete the work. In his recent address on this subject Professor v. Noorden¹² pointed out that the information regarding the nature of intermediate products of metabolism, as well as the seat of their formation, is lacking. Attention of investigators has turned to the study of the products of autolysis of various organs in the hope of filling in the gap in our knowledge of the mechanism of nutrition and of self-preservation of the organism.

However, the study of the substances arising in the course of autolysis was preceded by very active work on the normal composition of tissues and tissue components. Indeed, it was to be expected that within the body tissue constituents would break down into their component parts. Recent years are marked by astonishing progress in the knowledge of the chemical nature of tissues. It was owing to this progress that the study of autolysis was made a comparatively easy matter. As already stated, the principal tissue components are albuminous matter, sugars and fat. The changes which each one of these components undergoes in the course of self-digestion has been the subject of special investigations.

Under the term proteid is generally understood the substance which represents the most important and most characteristic part of living matter. It is colloidal in nature and is composed of various nitrogenous acids. On heating proteid with strong acids or alkalies, the original substance disappears, giving rise to the nitrogenous acids. Of those already known are the following:

| | |
|-----------------------|-------------|
| Glycecoll. | Lysin. |
| Alanin. | Arginin. |
| Aminovalerianic acid. | Histidin. |
| Leucin. | Prolin. |
| Glutamic acid. | Tryptophan. |
| Phenylalanin. | Cystein. |
| Tyrosin. | |

Of the proteids, one group attracts special attention. Its members are present in greatest quantity in the nuclei of all cells, and it has been assumed that the function of the nucleus is closely associated with the presence of these substances. They are named nucleins, nucleoproteids, nucleoalbumins, etc. They are more complex than ordinary proteids, containing in their molecule, besides the usual constituents, a body termed nucleic acid. This acid is composed of substances to

which a considerable rôle in the pathogenesis of disease has been attributed. Its components are as follows:

Phosphoric acid, carbohydrate, thymine, uracil, cytosine, adenine, guanine, hypoxanthine.

Normally, components of simple and complex proteids occur as such in tissues in very insignificant quantities. But it is found that in the course of self-digestion an organ may undergo such deep changes that nothing remains of its original structure, in its place the following substances appearing:

| | Pancreas | Liver | Spleen | Kidney | Testes |
|--------------------------------|----------|-------|--------|--------|--------|
| Glycecoll | + | + | + | + | + |
| Alanin | + | + | + | + | + |
| Aminobutyric acid | + | + | + | + | + |
| Aminovalerianic acid | + | + | + | + | + |
| Leucin | + | + | + | + | + |
| Glutamic acid | + | + | + | + | + |
| Aspartic acid | + | + | + | + | + |
| Pyrolidin carbonic | + | + | + | + | + |
| Tyrosin | + | + | + | + | + |
| Phenylalanin | + | + | + | + | + |

A glance at the table shows clearly that the action of the autolytic process in organs is as powerful as that of strong acids combined with high temperature. Nearly all the products which are obtained on prolonged boiling of proteids with strong mineral acids arise also in the course of autolysis. However, there are noted some differences in the two processes. If it be allowed to name substances appearing on cleavage with mineral acid as primary cleavage products, the distinction may be made that on autolysis the primary products undergo further transformation. It is a matter of convenience to discuss the points of difference according to the three principal groups of substances in which they occur, namely: 1. The nitrogenous acids containing only one nitrogen in their molecule, monoamino-acids. 2. Acids with more than one nitrogen in the molecule. (The substances of this group arising from proteid cleavage were named by Kossel hexon bases. They generally possess basic properties.) 3. Substances resulting from the nuclear degradation, nuclein derivatives or nuclein bases. The most appropriate method for investigation was: First, to study the products obtainable on boiling organs with strong acids; second, to study those arising on autolysis of the same organ, and, finally, to analyze the substances appearing on boiling with strong acids of organs previously subjected to self-digestion.

On acid cleavage all the amino-acids are obtained which are known to appear on the breaking down of proteid material. Among the end-products of self-digestion of the pancreas, Emerson¹³ discovered oxyphenylethylamin, which is not known to be present in the proteid molecule, and which may be regarded as a secondary product derived from tyrosine. Further, on autolysis of various organs the formation of glycecoll was not observed, and prolin could be demonstrated only in a few experiments. It should be remarked that the present methods of analysis of amino-acids are not fully satisfactory and too much weight should not be attached to the results thus far obtained. However, the results of the analysis of the amino-acids obtained from the fresh and from the self-digested glands seem to indicate that in the course of the latter process some destruction of the substances takes place. This may be

seen from a table showing the results of experiments not yet published, although completed:

| | Fresh spleen. 5 pounds. 0.700 | Autolysed spleen. 5 pounds. 0.700 |
|---|-------------------------------------|---|
| Glycerol | 8.6 | 1.7 |
| Alanin | | |
| Aminobutyric and amino valerianic acids | 5.25 | 5.00 |
| Leucin | 14.75 | 12.0 |
| Aspartic acid | 2.54 | 0.8 |
| Glutamic acid | 3.12 | 1.25 |
| Phenylalanin | 1.15 | 1.33 |
| Prolin | Present. | Present (inactive). |

The knowledge of the further phases of amino-acid metamorphosis is rather meager. Stolte¹⁴ has shown that amino-acids exposed to the action of tissue extracts give rise to ammonia, and Magnus-Levy¹⁵ has demonstrated the formation of fatty acids in the course of autolysis. Diamino-acids and other basic substances of the proteid molecule suffer a similar disintegration. Thus, on prolonged autolysis of the pancreatic gland or of the gastric mucosa, the formation of diamins from diamino-acids, a process analogous to the transformation of tyrosin into oxyphenylthylamin, was observed by Lawrow,¹⁶ Langstein¹³ and by myself.¹⁷ It has also been noted that a very considerable part of the diamino-acids suffers a more complete disintegration. Thus five pounds of fresh spleen yield on hydrolysis 3.2 gm. of arginin and 2 gm. of lysin and the same quantity of digested glands only 1.5 gm. of arginin and 1.2 gm. of lysin. The mechanism controlling this degradation was explained by the brilliant discovery of Kossel and Dakin.¹⁸ These authors have demonstrated in various organs the presence of a special enzyme whose function it is to decompose arginin into urea and diaminovalerianic acid. The same enzyme was found by Shiga in the yeast cell.

(To be continued.)

IRRIGATION OF THE ABDOMINAL CAVITY.

FROM A BACTERIOLOGIC STANDPOINT.

J. WALTER VAUGHAN, A.B., M.D.

DETROIT.

The mortality in cases of peritonitis depends on two things—first and foremost, the virulence of the infecting germ; second and of almost equal importance, the area involved. Given the same organism, capable of forming the same toxin and the same amount of toxin, the severity of the disease will depend on the size of the abscess, i. e., the area involved. In an article by Young¹ the opinions of twenty-five of our foremost surgeons were given on the advisability of flushing out the abdominal cavity in cases of acute diffuse suppurative peritonitis; "fifteen were in favor of irrigation, while ten opposed it." Those who support irrigation claim that they wash away toxic material which would otherwise be absorbed, while those who oppose it certainly have a much better mortality record to uphold their method of treatment.

The study of bacteriology until recent years has dealt mainly with the morphology of organisms and their cultural characteristics. During the past few years, however, we have been enabled to study bacteria from the standpoint of their chemical nature, because of the fact that they have been grown and obtained in large amounts at one time. The Roux flask was the first step

toward this end, and the final result, whereby great quantities of a given germ could be harvested, as a farmer harvests his wheat, has been obtained by means of the large tanks of V. C. Vaughan. To obtain a good growth by either of these means the first and essential requirement, after the medium has been rendered sterile, is to spread a thin layer of the germ substance equally over the surface of the medium. This is done by means of water suspensions of the germ—beef-tea cultures.

The peritoneal cavity may be compared to either the Roux flask or the tank. It is a large sterile cavity under ordinary conditions, but when danger threatens in the form of perforation from appendiceal or other causes, it attempts to protect itself by the formation of adhesions, and thus limit the area wherein the germ can grow. The test-tube is formed as compared to the tank. In animal experiments, where the germ is injected directly into the peritoneal cavity, the animal invariably dies, no protecting adhesions are present and there is a general diffuse peritonitis. The peritoneal cavity has not been forewarned; a large amount of a watery suspension of the given germ has been suddenly thrust into it, and the result is inevitable. In the human body also we find many cases in which perforation takes place almost immediately after the first symptoms; the peritoneum has been unable to protect itself, no adhesions are formed, and we have what is termed acute diffuse suppurative peritonitis. Those who advocate irrigation say that they wash this infectious material out of the abdomen. In reality what do they do? They form a watery suspension of the germ present and force it to every part of the abdominal cavity, thereby causing a true general peritonitis. The test-tube or flask has been changed into the tank and the harvest will be proportionately large.

A general peritonitis, and by that I mean a condition in which all parts of the peritoneal cavity are involved, is a rare and, I believe, impossible condition unless brought about by some such method as the above. Anatomically the cavity is too well divided to permit of an infection of its entire surface through even the most rapid of perforations. The area involved will undoubtedly be large, but let us consider the adhesions formed as the advance guard of the defense, and we shall still have the natural anatomic boundaries as the reserve, when the advance has not been able to cope with the invasion. Roughly, from this standpoint, the peritoneal cavity may be divided into at least three compartments. The pelvic, that below the transverse colon, and that above, the latter of which may again be divided into two, one of which we will term the gall-bladder region and the other the perigastric. In the female the pelvic region is happily more distinctly separated from the abdomen than in the male. From the standpoint of extension of infection the sigmoid may here be regarded as the dividing line. The adhesions between the sigmoid and surrounding structures in fully 90 per cent. of cases are means of preventing the infecting process from extending upward and invading the true abdominal cavity. When abscess formation fails in appendiceal or typhoid rupture the transverse colon is the natural barrier to a further extension of the process upward. Why, then, should we bathe that part of the peritoneal cavity above with a fine suspension of fecal matter and infectious material by means of irrigation? In cases of perforation of gall-bladder or perforating ulcer of either pylorus or duodenum the upper strait is involved—that above the transverse colon. No other part of the abdominal cavity has such definite barriers

15. Hofmeister's Beiträge, vol. v, 1904.

16. Ibid., vol. II, 1902.

17. Zeltseh. f. phys. Chem., vol. xxxiii, 1901.

18. Amer. Jour. of Physiol., vol. xii, 1904.

19. Zeltseh. f. phys. Chem., vols. xii and xiii, 1904.

1. THE JOURNAL A. M. A., Aug. 26, 1905.

to the extension of any infectious process as the region of the gall-bladder and pylorus. E. W. Andrews² says:

There is no part of the cavity which has such invariable boundaries as the gallstone surgical field. Unlike most parts, it is not subject to the floating in or intrusion of other viscera. Its surroundings, to a certain extent, shut it off and prevent it from draining into or out of the rest of the cavity. In form it is a triangle, bounded above by the liver and appendages, below by the colon and mesocolon, and to the left by the stomach, gastrohepatic omentum and duodenum. . . . This space can also be conceived as a spherical triangle, or as a pyramid, with its base on the abdominal wall, and its apex in the foramen of Winslow.

Who now would think of carrying infectious pus over these natural bounds and into the surrounding cavity by the aid of irrigation? Yet the same rule holds good for any portion of the abdomen and is equally true of appendiceal rupture and perforations in typhoid.

The reaction caused by such great mortality following flushing of the abdominal cavity in acute diffuse suppurative peritonitis has come in the method of treatment of which Ochsner was the first and foremost advocate—absolute rest with no operative interference—thus allowing Nature to do her best. This after all is what the treatment consists of, and when Nature is undisturbed how does she attempt to contend with the invasion? Pathology teaches us that the local changes are first a serous exudate which later becomes fibrinous in character. This we know is the means by which the infection is walled off and abscess formation occurs. Why, then, should we wash this exudate away and thus prevent, or at least retard, such a result by means of irrigation? In the local exudate, as well as in the entire blood stream, a great increase in the number of leucocytes can always be observed, and while as yet we do not fully understand what part these leucocytes play in the resistance to infectious processes, yet we know that they play a part of much importance in the successful issue of these cases. These also are washed away when irrigation is employed. Outside of this, Nature protects with chemical substances which we term antitoxins, but we look upon these not as a local product to resist infection, but rather as a general one. However, the amount of such a substance required will vary directly with the intensity of the infection, which may be said to be governed partially by the area involved.

It is a common clinical observation that shortly after irrigation of any abdominal abscess there is a noticeable rise in the temperature of the patient. This we ascribe to increased absorption, that is, we have not only washed out the débris of dead cells, but the protecting exudates covering the peritoneal surface have also suffered and new exudates must be formed before the toxic products are again separated from direct contact with the blood stream and lymphatic channels. A given organism will soon die out if kept in the same test-tube, but if new media be constantly added or frequent transplantation take place its life may cover a greatly extended period.

Realizing then that Nature's most efficient safeguard is in the formation of adhesions and that the percentage of cases in which these cause permanent after trouble is very small, let us consider how we can best aid in what Nature has failed to do. From a bacteriologic standpoint irrigation is entirely contraindicated. The surgeon will tell you when the abdomen is opened because of any infective process that drainage is the object sought. A large perforated rubber or glass tube furnishes the best means of obtaining the freest drainage, and this is frequently used and with most satisfac-

tory results. However, always in conjunction with this and sometimes alone, one or more gauze drains are inserted into the abdominal cavity. This is done because clinical experience has taught the surgeon that his patient will do better and that recovery in a greater percentage is assured if the gauze drain be used. Given the choice between gauze and tube drainage and, I venture to say, by far the majority of surgeons would choose the gauze, and their reason would be that clinical experience proves that the mortality is far less when this form of drain is used. Now why should this be so? To my mind the answer is found by reverting again to that second factor in the causation of the mortality, namely, the area involved. At present we have no substance which is so effectual in the stimulation and formation of adhesions as sterile gauze. The gauze drain helps Nature to build up that safeguard which she is called on to supply, and hence helps to limit the area of infection. After three or four days this drain, which has played so useful a part in the limitation of the area involved, may become an absolute menace, for when the exudate has become dried upon its surface it plays the function more of a cork than a drain. But by this time the adhesions are well formed and the tube should be substituted for the gauze, since free drainage is now the essential in order that the pressure within the abscess may be as small as possible, and thus render slight the danger of infecting that portion of the abdomen without the abscess by rupture of the same.

It is my opinion that the habit of irrigation in infectious conditions of the peritoneum is a pernicious one, absolutely without either scientific or clinical endorsement, and one which appears to be as difficult for the general surgeon to give up as anterior suspension or fixation has been for some gynecologists. Many of the leading surgeons have abandoned irrigation in peritonitis from appendiceal trouble, it is true, and their results alone should cause others to follow in their steps. Why should the same principle not be adopted in typhoid perforation, and, indeed, perforations from all other causes? I believe that if such a course were to be adopted the present mortality would be markedly reduced.

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THE CONSERVATIVE SURGERY OF THE TUBES AND OVARIES.*

ANDREW STEWART LOBINGIER, A.B., M.D.

LOS ANGELES.

It is twenty years since Schröder first advocated the preservation of the remnant of normal ovarian substance in excision of small cysts of the ovary. August Martin, about the same time, reported a number of cases in which normal portions of the tube and ovary were preserved and the degenerated portion removed. W. M. Polk a year or two later presented the same subject to the American profession and submitted his brilliant results in the conservation of these structures. Since that time contributions have been made to this field of work by Dudley, Kelley, Morris and others, showing definite results in relieving pain, establishing normal menstrual function, and, in a number of instances, being rewarded by seeing the patient bear children.

There could be slight excuse for calling attention at

* Read before the San Bernardino (Cal.) County Medical Association.

this late day to the many ingenious procedures for the partial restitution and preservation of these structures so vital to the happiness and well-being of women, were it not a fact that these possibilities are still grossly and continually disregarded. There is scarcely a week passes without the painful evidence of some patient suffering a loss, to her irreparable, of either one or both ovaries and tubes, ablated for ovarian neuralgia, hydrosalpinx, obliterating salpingitis, or worse than all possibly, simple ovarian cyst with minor adhesions.

The mental distress which overcomes these unfortunate subjects in the sudden and artificial induction of the menopause, the deprivation of the possibilities of motherhood, the definite belief that they are to become shattered and to lose those delicate and essential elements which distinguish their sex—these realities and fears are sufficient in themselves to cause any surgeon to reflect on his responsibilities. And no one of even moderate experience will question the frequency of the appalling consequences of this crude and wretched work.

The prevalence of long obsolete procedures in surgical technic is no fault of our masters, who have filled the literature of every language with a modern gospel which is free to all of us. The fault is ours and lies stark and accusing at our own threshold. We are not guiltless, if in our apathy we have not harkened to good teaching nor heard the warning for him whose crass ignorance shall cause innocent ones to suffer through long and helpless years.

Improvement in this field of work is to be looked for in a more patient and careful study of the pathology of ovarian and tubal disease. It is necessary to get away from the fads which have misled us and drawn us unthinkingly after false teachers, who would find in the extirpation of a vital and essential organ the relief from a painful symptom. It is necessary to distinguish between surgical procedures which are mutilating and those which are conserving and remedial. Only by thoughtful and studious consideration of the physiology and physiologic chemistry of these structures and the relative degrees of existing pathologic change can one found a judgment which has enduring value.

The wild claims of the advocates of Battery's operation are fresh in the minds of all of us. Many, if not most of us, I daresay, have been blind followers of the blind in this grievously erratic doctrine. We can atone for these errors only by a persistently earnest effort to analyze our cases with greater conscience and precision, and to choose a surgical procedure which will the most perfectly restore the organ to its normal function.

It is beyond the limits of this paper to discuss the multiform influences contributing to disease of the pelvic organs. Outside of the violences of incorrect diet, bathing, clothing, exercise and social dissipation, there is that great trinity—septic metritis, gonorrhea and tuberculosis—which forms the sum total of concrete disease of the tubes and ovaries.

It may well be said at this juncture that any and all of these conditions might be prevented, and that it were more philosophic to deal at length with measures looking to the prevention of these potent infections than to efforts to preserve the shattered remnants of their destructive work. We need have no quarrel with the sanity of this idea, and preventive medicine has no fairer field for its cleverest effort, but the surgeon is still the latest to be called and is confronted by a complicated pathology which admits of but one appeal.

CONSERVATION OF THE OVARIES.

This discussion need not deal with those large ovarian

cysts, now so rarely met, in which all ovarian substance has perished, nor with extensive dermoids, hematomata, parovarian cysts or that extremely rare neoplasm, fibroma of the ovary. Carcinoma, tuberculosis and abscess call for the total extirpation of the affected ovary and, in the first two, frequently of the uterus and adnexa. It is possible, however, to save an ovary partially destroyed by a small abscess. It is just as rational and defensible as to spare the parotid, mammary gland or testicle under like circumstances.

The commonest affection of the ovary calling for surgical relief is the small cyst. These cysts usually occur in numbers and they vary greatly in size. They may be pseudo-retention cysts—unruptured Graffian follicles—or true cystic degenerations of the corpora lutea. In any case they add a preternatural weight and create a tension in the tunica albuginea which results in a dragging burning weight and in so-called ovarian neuralgia. I have seen many cases in which this excessive weight threw the uterus backward out of its normal axis and held it tight against the rectum in the hollow of the sacrum. Often these large cystic ovaries become imprisoned deep down in the cul-de-sac of Douglas, acting like spherical valves, the force of whose suction not only keeps the vessels in the tube, ovary and broad ligament congested, but produces and maintains a dorsal version which is both painful and obstructive. In almost every instance the tunic will be found greatly thickened, causing ovulation and the menstrual period to be very painful.

A great deal was said in former years concerning the "cirrhotic" ovary. We know now that this is a myth and that what was designated ovarian "cirrhosis" was nothing more than a somewhat distinctly defined collection of the scars of ruptured follicles. No doubt there are women in whom the ovaries show a tendency to contract and, through the physiologic process of ovulation, to lose parenchyma which relatively gives the appearance of increase of stroma. That condition, however, is no more pathologic nor is it more frequent than the hypertrophic ovary which I have met repeatedly and which in some cases I have observed to be twice the size of the normal organ. Microscopic examination shows a relative increase in the reticulum in the one case, in the parenchyma in the other. Neither condition is pathologic, although I have found that removal of at least half of the hypertrophied ovary gives immediate relief from the weight and burning. Many so-called cirrhotic ovaries are doubtless the remnants of previous small ovarian abscesses or the result of adhesive bands from septic inflammation of the uterus and tubes. In these cases the irritating scar may be resected and the normal portion of the ovary left, and this may be laid down as the rational surgical procedure in every instance of ovarian pathology, save the exceptions heretofore mentioned. It may be stated dogmatically that oophorectomy, except in this restricted sense, is not only obsolete, but that it is utterly wrong and unjustifiable, and this doctrine will apply to at least 90 per cent. of all pathologic ovaries.

The technic of excision of the cysts and degenerated portions of the ovary is not difficult, but calls for nice dissection and delicate suturing with fine plain catgut. It will be found that in many instances the walls of these cysts can be peeled out with fine dissecting forceps as soon as the tunic is incised. The incision should pass through the superior edge in the long axis of the organ and it will be found that at the base there is much ovarian tissue which is absolutely normal.

I can recall many patients operated on for tuberculosis or for septic destruction of both tubes and apparently of both ovaries, in whom it was possible to leave ovarian substance at the base of one or both ovaries not larger than an olive seed. These women all began to menstruate at periods varying from two to six months after the operation and with but slight irregularity. There has not been one of them in whom this function has been effaced, and within a year all of them became as regular as the average normal woman.

In one case of caseous destruction of the entire left tube and ovary and of the right tube, and all but the submerged base of the right ovary, from tuberculosis it was possible to save the merest portion of the base of the right ovary. This patient has had irregular, and at times, suppressed menstruation for fifteen years and has also suffered from pulmonary tuberculosis. Before the operation she menstruated irregularly at intervals of from two to four months. After her operation there was no sign of return of the period, except a headache from congestion, for three months. She then flowed slightly for a day and a half, but not until the sixth month was the menstruation fully re-established; even then it was attended by some pain. Now, two and a half years later, menstruation occurs regularly, lasts three days, and gives as little discomfort as is usual in normal women.

In a number of other patients the destruction of the ovary has been less than in this case and the re-establishment of the menstrual function has been relatively earlier and less eventful. In a still larger class of patients one of the ovaries may be almost or quite totally destroyed and the other partially or wholly normal. In such the excision of the diseased tissue leaves no incident of note in the perfectly normal menstrual cycle.

Ovarian grafting in young women who have previously been subjected to ovariectomy is still in the experimental stage. Knauer's experiments on rabbits in 1896 showed that autotransplantation of an excised ovary within the broad ligament resulted in continuance of ovulation. Hetero-transplantation has resulted in degeneration of the ovary thus transferred from one animal to another. In a recent contribution by Robert T. Morris, comprising a résumé of the latest work in this field, including his own, these conclusions are drawn:

1. When the ovaries are removed from an animal and then replaced at some point near their original site or even at distant points, the tendency is for the ovary to continue its function of developing ova and of furnishing its internal secretion. Such transplanted ovaries may continue to do normal work for an indefinite period.

2. When ovaries are removed from one animal and transplanted into another animal of the same kind which has had the ovaries removed, the tendency is for the grafted ovary to undergo a degenerative process. The graft will continue to furnish ova and internal secretion for several months in some cases, but at the end of a year we often find the grafts fatty and apparently useless. We assume that the serum of one animal is destructive to the introduced tissues of another animal of the same sort. My present line of investigation is toward making one series of rabbits immune against the serum of another series and then exchanging the ovaries of the two series. If this can be accomplished, ovarian grafting will be placed on a plane of usefulness much above its present one.

As the possibilities of conservative surgery on the ovary are better understood we shall have fewer subjects requiring transplantation. In fact, it is simply the substitution of a rational artistic technic for a crude and ruthless sacrifice of vital structures.

CONSERVATION OF THE TUBES.

In the uterine tube we have a structure which in both its histologic and anatomic characters becomes at once a more complex problem than the ovary. Partly on account of this involved pathology the ovary has frequently been sacrificed with the diseased tube. This practice has doubtless grown from the fallacy that if the tube be partially or hopelessly destroyed the ovary is likewise in a hopeless condition and should be removed also. No more pernicious doctrine than this could prevail. Each organ must be considered and treated with regard to its own pathology, and the fact that certain organs are anatomically contiguous and may be closely related by blood and lymph currents and nerve supply is by no means just cause for sacrificing both organs when but one is diseased. There are many mild infections outside of the strictly pyogenic, gonorrheal or tuberculous that may cause the lumen of a tube to become obliterated. I have often found the isthmus constricted and the *ostium abdominale* partially closed in young unmarried women, with neither a history nor pathologic evidence that any infection, however mild and innocent, could have occurred. Yet at some time when the uterine mucosa was most susceptible a slight endometritis had extended to the tubal lining and through successive attacks had produced the hyperplasia necessary to cause occlusion.

There is also good reason for the belief that bacteria from the appendix on the right and from the epiploic processes of the sigmoid on the left have been definite factors in the closure of the ampulla at the fimbriated extremity. Whatever the etiology of these milder infections, on account of which the tube ceases to be patulous, we have in this obstruction a cause of sterility as actual and permanent, until relieved surgically, as from a septic or gonorrheal infection. And it should be remembered that fully a third of the patients in private practice presenting themselves for relief from sterility are suffering from the results of these milder infections. The frankly septic and gonorrheal infections very naturally cause the most destructive and complex deformities of the tubes and call for a correspondingly radical treatment. Fortunately for the operator, unfortunately for the fate of the tube, the best practice that is now known to us is to await the subsidence of the acute process before surgical interference is justifiable. Whether we shall ever venture as a rule of practice to treat these abscesses early before extensive destruction of the tube occurs is doubtful.

A better understanding of the means of arresting the infection before it passes in any degree beyond the uterine mucosa is necessary. This gained, the conditions in the tube will be found more amenable to early cleansing and drainage and by so much the early treatment of sub-acute septic and specific infections of the tube will be practicable. Even as it is one is continually surprised to see how remarkably well these extensive infections clear up and leave tubes which seem hopelessly deformed, astonishingly free from evidences of damaging inflammation. It may be necessary to do more than one operation on these structures. It will always be necessary to apply the most discriminating judgment and careful technic in regard to the incision, the matter of drainage and in arriving at a decision as to what portion, if any, may safely be removed. Yet it is most gratifying to find in how many instances the surgeon is well rewarded for the care and pains taken to save his patient these priceless structures.

In tuberculosis—an infection of the tube which we

are identifying far more frequently than heretofore—little as yet can be offered of a conservative character. Theoretically there should be no justification for sacrificing an apparently sound ovary or tube. If one is infected and the other not it would seem to be reasonable practice to leave the sound tube, even though a later infection should occur and a second operation be necessary. This doctrine would be beyond controversy did we actually know that the endometrium and the lining of the sound tube were uninfected. In the light of our present methods, however, we can not know, and hence we must be guided by clinical experience; this has taught us that when one tube becomes manifestly tuberculous infection of the other is almost inevitable and that in this infection the uterus is frequently first. With this pathology we now know but one safe course of action—total extirpation. The future should hold something better than this.

The technic in tubal surgery must depend largely on the character and degree of infection and the extent of destruction and deformity. In simple stricture at the isthmus, resection of the isthmus and the anastomosis of the ampulla with the proximal end of the tube near the cornu, offers good results. A cord of heavy plaited silk should be anchored in the ovary and the other end carried down through the uterine cavity to a gutta percha bobbin in the vagina to insure the mucons tract remaining patulous during the repair of the anastomosis. I have known pregnancy to occur within three months following this procedure.

When the mouth of the tube has closed by a sealing over of the processes of the fimbria the adhesions, which are usually thin and delicate, should be opened up, the cavity of the ampulla carefully syringed out with salt solution and the edges of the released fimbria folded back over the tube like a cuff and tacked there with interrupted stitches of fine catgut.

When the tube is angulated or kinked by fine dense bands these should be snipped and the tube straightened out, and if a stricture persists the dorsum of the tube should be laid open and the lumen given the usual toilet. Attempts to probe the tube are usually so fruitless that such injury as is sure to result should be avoided. Careful syringing with salt solution in a fine syringe is far safer and more effective.

In tubes which have been septic or gonorrheal and in which active cocci no longer exist, or in mild types of hydrosalpinx, the occluded tube should be opened up, cleansed and the cystic portion utilized as an ampulla. If perfectly free from infective material the dorsum of the obliterated portion of the tube may be laid open and a silk cord passed downward as in the case of anastomosis already described. Frequently these tubes will be found patulous just proximal to the barrier of the cyst wall and the incision may cease a line or two beyond it.

When the tubes are large pus sacs it has been customary to remove them and, commonly, the uterus. It remains to be seen if we shall not be able to do better than this by carefully and properly applied drainage in a series of operations. It can not be denied that so far little of merit in this direction has been recorded; yet if we were to quail at a septic tendovaginitis in the hand and wrist, as we do at conserving pus tubes in the pelvis, what a melancholy showing we should have. Possibly a little more patience, a little more plodding, a little more dogged belief in Nature's regenerative power when nicely and intelligently aided, would be rewarded here as elsewhere, in fields more difficult but not more worthy.

What has been said of preserving the tube when impaired by infection will apply with equal force to tubes changed by ectopic pregnancy. A tube should never be sacrificed if it is possible to save it or even a portion of it, for the normal one may suffer soon in like manner and both thus perish.

In every instance of conservative work on the tubes and ovaries the uterine cavity should be thoroughly curetted and cleansed, since it may be necessary to establish and maintain communication for several weeks between the abdominal cavity and vagina through the uterine canal. That this can be done with perfect safety has been repeatedly proved, but the price is strict asepsis, both as to the sterility and toilet of the tubes and after toilet of the vagina.

It will often be found necessary to shorten the uterine round ligaments to correct version and descent, and this should not be overlooked.

The results of value in a certain procedure are the end results. I know of none more positive or beneficent than in this field, provided careful judgment and attention to minute detail is faithfully observed. My hopes will be more than realized if this paper shall serve to revive a just interest in a field by no means worked out and one in which conservatism will be of much benefit to the race.

THE VALUE OF ALCOHOL IN CARBOLIC ACID POISONING.

A CLINICAL AND EXPERIMENTAL STUDY.*

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AND

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1. INTRODUCTION.

The use of alcohol as an antidote in carbolic acid poisoning was first brought before the medical profession by Dr. Seneca D. Powell of New York City. At his clinical lectures, from about 1894 on, he was in the habit of demonstrating his theory by such an experiment as washing his hands in pure carbolic acid and then in alcohol, and had even filled his mouth with the pure acid, and by quickly rinsing it with 95 per cent. pure alcohol had experienced no harmful results. From these experiments he made the statement that alcohol is an antidote to carbolic acid, and suggested its being used internally in cases of poisoning. The results of his five years experience were reported to the Medical Society of the County of New York Feb. 27, 1899, and appeared in the reports of this society.¹ He, however, had had no practical experience in poisoning cases and goes no further than to mention a case of which he had heard of a one-month-old infant, who, after swallowing the strong acid, had been given a teaspoonful of whisky, though apparently moribund, and had recovered temporarily. Furthermore, this child, having died eight days later of pneumonia, showed no signs of an eschar in the stomach.

The first mention of alcohol as an antidote from a clinical standpoint is in the report by Donald B. Fraser² of a patient who took an ounce of the pure acid in a glass of whisky, and, though unconscious for eight hours,

* From the Medical Service of the Lakeside Hospital and the Pharmacological Laboratory of Western Reserve University.

1. Powell: Medical Record, New York, 1899, vol. iv. p. 372.

2. Fraser *Ibid.*, 1899, vol. xlviii p. 741.

eventually recovered, repeated lavage with water having been resorted to. He then states that alcohol is apparently a true antidote in carbolic acid poisoning. Whether the author was familiar with Powell's work, at that time unpublished, he does not state.

The credit of first using alcohol in poisoning cases seems to be due to Dr. J. Drysdale Buchanan,³ who used lavage with two quarts of 35 per cent. alcohol for a patient who had taken one ounce of the acid.

Since these early reports there have been a number of isolated cases in the literature from which the most positive conclusions have been drawn. For example, Kelly⁴ in 1899, after reporting one successful case, states that "alcohol is undoubtedly the best antidote for all cases of carbolic acid poisoning, and, indeed, is an absolute antidote." Phelps⁵ on the strength of Powell's work, says: "In cases of carbolic acid poisoning, if immediately after the administration of the poison, alcohol was thrown into the stomach the poisonous effects of the carbolic acid would at once be neutralized." Pinkney,⁶ after reporting a fatal case, says: "The amount of carbolic acid left in the stomach and intestines when alcohol came in contact with it was rendered harmless, and the general action of the already absorbed poison was checked immediately." Finally, Gross,⁷ in discussing the subject, refers to alcohol as a chemical antidote, and says that the reaction forms "a new phenol benzene or aromatic compound having the chemical and therapeutic properties of alcohol."

Two years ago one of us, having been favorably impressed by some of these reports and by good results obtained by the use of alcohol by himself, and other members of the staff of the Johns Hopkins Hospital, in cases of carbolic acid poisoning, introduced the use of alcohol in the emergency room of the Lakeside Hospital. Since that time thirteen patients with carbolic acid poisoning have been admitted to the hospital, for all of whom the alcohol treatment has been used.

2. CLINICAL DATA.

BY T. W. CLARKE.

As all former reports on this treatment have been of single cases, from which, owing to the natural tendency of the profession to report their successful cases only, but slight conclusions can be drawn, it has seemed advisable to report the present series of thirteen cases more or less in full. For permission to use these cases we wish to thank Drs. Hunter Powell, John H. Lowman, Henry E. Upson and Edward F. Cushing, visiting physicians to the Lakeside Hospital.

CASE 1.—Patient admitted at 8 p. m. Dec. 14, 1903, unconscious. Had taken carbolic acid, 3ss, in whisky. There were two burns on chin. Pupils react, breathing heavily. Pulse was so rapid and weak that it could not be counted. Stomach was washed out with two quarts alcohol, 10 per cent., then milk and eggs, Oi, left in stomach. Strychnin, 1/30 gr., digitalin, 1/30 gr., given hypodermically. At 9 p. m. patient was conscious and very noisy; quieted with sodium bromid and chloral, aa3i, by rectum, and slept the rest of the night. Temp. 100, pulse 110, at midnight.

December 15: Some pain on swallowing. Nothing to be seen on examination of the throat and mouth. Temp. 99 to 101.5, pulse 80, resp. 20, urine dark.

December 16: Patient allowed up in wheel chair. Still

slight soreness on swallowing. Physical examination negative. Temp. normal, pulse 70 to 80, respirations 20 to 26.

December 18: Eats well, no difficulty in swallowing. Scar on chin disappearing. Discharged, well.

CASE 2.—Patient admitted 11 a. m. Jan. 17, 1904, having taken carbolic acid, 3ss, shortly before, in glass of beer. Patient was unconscious. Pulse arrhythmic, rate 160. No burns on lips, slight erosion on cheeks. Lavage performed with alcohol, 10 per cent. The washing contained carbolic acid and much undigested food. Milk and eggs, Oi, added and left in. Artificial respiration was resorted to several times. Strychnin, 1/20 gr., and digitalin, 1/30 gr., were given twice in quick succession. Temp. 96.4, resp. 58, pulse 160. At 1:30 p. m. the pulse and respiration became most irregular. Strychnin, 1/20 gr., and digitalin, 1/30 gr., steadied both. Hot water bottles were applied and coffee, 3viii, given per rectum. At 3 p. m. subcutaneous infusion of normal saline, 600 c.c., was given and repeated at 7 p. m., the last containing 7 gm. sodium sulphate. Patient vomited frequently between 4 and 5:45. Patient first showed consciousness at 7 p. m. while the infusion was being given.

January 18: Patient is doing well. Temp. 100.5 to 101, pulse 100 to 110, resp. 30 to 40. The patient looks well and seems but little the worse for her experience. Urine black, slight trace of albumin, no blood, no casts.

January 19: Last night the patient's temperature rapidly rose, and this morning was 105, resp. 70 and pulse 160. Leucocytes, 5,900. The patient is very cyanotic. Sponge baths, strychnin and oxygen ordered. Examination of chest is negative. Urine yellow, heavy trace of albumin, no blood, no casts.

January 20: The temperature has remained in the neighborhood of 105, pulse 150 to 170, resp. 60 to 65. To-day there is a definite pneumonia area over right upper lobe. Over the entire chest there are patches of tubular breathing and large mucous râles. Patient died at 10:30 a. m.

Autopsy showed an aspiration bronchopneumonia and a small, irregular, dark-colored patch in the fundus of the stomach.

CASE 3.—Patient admitted March 4, 1904, 9 p. m. Walked in, said he had drunk three glasses of whisky and then carbolic acid (doubtful quantity). Was quite conscious and rational. On left side of mouth and lower jaw were acid burns. Inside of mouth and pharynx slightly burned. Respirations normal, 28; pulse good, 100 a minute; temperature normal. Stomach was washed with 10 per cent. alcohol, and water, and sent to ward. He showed practically no constitutional symptoms; slept all night after 1:30; pulse 98 to 104, but of good quality. The next day the inside of patient's mouth was blistered. Discharged, cured.

CASE 4.—Patient admitted May 9, 1904, 12:10 a. m. Brought in in ambulance in a delirious condition. Had been drinking and had then taken carbolic acid, 3i. Pulse fairly good quality, 100 per minute. Some burns about the lips. The stomach tube was passed and food particles removed, smelling strongly of phenol. Lavage with 10 per cent. alcohol solution and followed with water. Milk, Oi, and 4 eggs inserted and left in stomach. Patient was given sodium bromid, 25 gr., and slept until morning. Temp. 96.6, pulse 100, resp. 24. The urine the next morning was black, contained a faint trace of albumin and a few hyaline casts, sp. gr. 1038. The next morning patient appeared well; slight eschar on lips; nothing to be seen in throat; some epigastric tenderness. Patient was kept in the ward until May 15 and then discharged, well.

CASE 5.—Patient admitted 5:20 p. m. July 22, 1904. She had been drinking for five days, and at 5 p. m. of the day of admission drank 10 cents' worth of carbolic acid (3i), with suicidal intent. She was taken into a saloon and became unconscious. On admission she was unconscious, cyanotic, breathing heavily, a great deal of mucus protruding from the mouth, vomiting a little. Pulse rapid and small. The face, mouth and pharynx were badly burned. Temp. 98, pulse 120, resp. 30. The stomach contents showed carbolic acid. Lavage with 10 per cent. alcohol, followed by water, and milk and eggs left in place. She was unconscious after reaching the ward, but regained consciousness at 8:20 p. m. Patient dozed

3. Buchanan: *Ibid.*, 1890, vol. lvi, p. 241.

4. Kelly: *Mereck's Archives*, 1899, p. 441.

5. Phelps: *New York Med. Jour.*, 1899, vol. lxi, p. 62.

6. Pinkney: *Amer. Med.*, 1901, vol. i, p. 358.

7. Gross: *Fort Wayne Med. Jour. Mag.*, 1899, p. 73.

all night, waking several times to vomit mucus. The temperature remained elevated for several days, 100 to 101 July 23, 99.5 to 100.5 July 24, 99 to 100 July 25, 26 and 27. The pulse remained at 120 until noon July 23 and then gradually came down to 100 that night, and was 80 on July 26. The respirations from 20 to 30 the first day, 20 after that. The urine was never obtained black, but contained a heavy trace of albumin and many hyalin and granular casts. The leucocyte count the day of admission was 18,400, reds 4,226,000, and hemoglobin 95 per cent. Patient discharged on July 27. The scars on her face were very sore and showed some signs of sloughing. Temperature was 99.

CASE 6.—Patient admitted 2:30 a. m. July 26, 1904. Had taken one ounce of carbolic acid in a glass of whisky. Became unconscious in five minutes, and was sent immediately to the hospital. On admission was unconscious, no sign of burns about mouth or lips; breathing stertorously; pupils small; pulse small, 120 a minute; no vomiting. Lavage with alcohol, 10 per cent., followed with water; after washing, milk and eggs and sodium sulphate, 3ii , were put in through tube. Patient became conscious at 5 a. m. Recovery was uneventful. The urine was dark-brown, acid, sp. gr. 1014, and contained a few hyalin and granular casts. On admission temperature was 97 and rose to 100.2 at 8 a. m., then gradually came down to 99 July 28. Pulse on admission was 118, at night 100, and 70 on the night of July 27. Respirations 32 on admission, at noon 14, and after this 18 to 20. The leucocyte count the morning of admission was 19,500. Patient did well and was discharged July 28, well.

CASE 7.—Patient admitted 8:30 a. m. Sept. 14, 1904. Had taken carbolic acid, 3i . She was unconscious, tongue and lips slightly burned, very weak, cyanosed, breathing stertorously, pupils much contracted. Pulse barely perceptible, quite irregular, 140 a minute. Stomach tube passed and contents showed carbolic acid. Lavage with alcohol, 10 per cent., and then water, eggs, milk and sodium sulphate, 3i , by tube. Strychnin, 1/30, and digitalin, 1/30, given twice within an hour. Intravenous injection of soda sulphate, 2 per cent., 250 c.c. Patient became conscious in two hours. In the afternoon had severe vomiting spell, which was relieved by dilute hydrocyanic acid, 4 minims, and bismuth subnitrate, 10 gr. On admission temperature was 99, pulse 112 and resp. 30. Temperature went up to 100 that night, and then down to normal the following evening. The pulse remained at 110 for 24 hours, and then dropped to 80 and remained in that neighborhood, with occasional flare-ups. Respiration came down gradually from 30 to 20 in 3 days. The urine was pale, sp. gr. 1020, faint trace of albumin, and a very few hyalin casts. Patient suffered considerably from soreness of the mouth and had very little pain in the stomach. No vomiting after the first day. Discharged, well, Sept. 19.

CASE 8.—Patient admitted Feb. 28, 1905. Child, aged 19 months, swallowed an unknown quantity of 95 per cent. carbolic acid three hours before admission. Seen by a physician at the home five minutes later, who washed stomach with alcohol and water. Patient was unconscious when seen at that time. On admission was very drowsy, temperature 101.5, pulse 160. Tongue, pharynx and inside of cheeks very badly burned, white in color. On admission patient was given magnesium sulphate, 3ii , and strychnin, gr. 1/250. March 1, temp. 104, pulse 152, resp. 40. March 2, temp. 100, pulse 100, resp. 20. From then on the temperature varied from normal to 100, pulse from 100 to 150, and respirations from 25 to 30. The child did well, and on March 6, the mouth having healed, patient was discharged.

CASE 9.—Patient admitted on March 23, 1905. The history was that she apparently fainted in an elevator, and poisoning was not suspected for one and a half hours. On admission she was moribund, unconscious, cyanotic, resp. 36, pulse small and weak, 160, pupils dilated, faint trace of carbolic to breath, mucous membranes, gums and palate white. Patient was stimulated with strychnin, 1/20 gr., digitalin, 1/30 gr., and stomach washed with alcohol, 10 per cent., and eggs and milk and magnesium sulphate, 3iii , left in the stomach, 500 c.c. Soda sulphate, 2 per cent. solution, given intravenously. Pa-

tient never rallied and died half an hour after reaching the ward.

CASE 10.—Patient admitted May 5, 1905, in an unconscious condition. Had taken carbolic acid, time not known. Severe burns of the cheek, corner of mouth, lips, tongue and roof of mouth. Pulse weak and rapid. Stimulated with strychnin and digitalin. Stomach washed with 10 per cent. alcohol and water. Eggs and milk, magnesium sulphate, 3i , and sodium sulphate, 5ss , inserted through tube. Temp. 100, pulse 110, resp. 20. Patient was restless after getting to ward, but later slept. Temperature during the day rose to 100.8 and pulse 120, but on the second day temperature became normal and pulse 80. The leucocytes on May 5 were 28,200. Patient had difficulty in swallowing and considerable epigastric tenderness.

On May 7 patient felt well except for the burns on the face, and insisted on going home.

CASE 11.—Patient admitted, unconscious, 9:30 p. m. June 1, 1905. Had taken carbolic acid, 3ii , a few minutes before. Two scars, 4 cm. long, on upper lip; slightly cyanotic; pulse good. Lavage, 10 per cent. alcohol, then magnesium sulphate and eggs and milk by stomach tube. No stimulation. Consciousness returned 10:30 p. m. Next day scars marked on lip and slight on roof of mouth and tongue. Large white patch on right tonsil and posterior wall of pharynx. Larynx inflamed, abdomen rigid and sensitive in upper half. Blood examination: Leucocytes, 11,800; hemoglobin, 83 per cent.; fresh blood normal. Urine greenish, sp. gr. 1020, acid, loaded with hyalin, granular and leucocyte casts. June 4 and 5: Urine, sp. gr. 1015, neutral, no casts. June 5: Discharged, well.

CASE 12.—Patient admitted 3:30 p. m. Sept. 7, 1905. Had taken carbolic acid, 3i diluted with a little water, fifteen minutes before. She had not swallowed all, as the glass was knocked from her hand after two swallows.

Patient was comatose, cyanotic. Pupils at first dilated and then pinpoint. Pulse very weak. There were two scars on the lips and the entire mouth and tongue was whitened, on the chest and abdomen was very extensive burn, extending from the neck to the pubes. The treatment consisted of lavage with 10 per cent. alcohol and the introduction of yolk of eggs and sodium sulphate 3ii . Strychnin 1/20 gr. and digitalin 1/20 gr. were given hypodermically. The patient regained consciousness in two hours and was quite violent for a short time, then quieting down. The next day the urine was of the characteristic brown-black color sp. gr. 1005, for three days contained a few hyaline and granular casts; after this it was normal. The temperature remained slightly elevated for five days, 99 to 101.5. For two days there was some pain in the mouth, especially on swallowing. By the fifth day the mouth had cleared up, but the skin burn was still very sore, red and blistered. The patient was discharged well on the ninth day.

CASE 13.—Patient admitted 8 a. m. Sept. 14, 1905. Had taken carbolic acid 3i in water fifteen minutes before admission. Semi-conscious, cyanotic on admission. Burns on lips and tongue. Lavage with alcohol 10 per cent. Magnesia sulphate 3ii , two eggs and milk by tube. Strychnin 1/20 gr., digitalin 1/25 gr. hypodermically. Temperature 100, pulse 98; next day pulse and temperature normal. Discharged well September 16.

An analysis of the preceding cases shows several interesting features. The local effect on the mouth is greater if the acid is taken pure or in water than if taken in alcohol, all ten cases of the first class showing local eschars, whereas two of the three of the latter class showed no burns whatever. All the cases were unconscious on admission, except two who had taken the drug after drinking whisky and one who had taken it in water. This includes the cases which had taken the poison in whisky and beer. The longest period of unconsciousness occurred in the patient who had taken the acid in beer. The average period of unconsciousness of the cases having taken the drug in alcohol was three and three-quarters hours and of those in which no such history was obtained was one and three-quarters hours.

The mortality record was low, only two of the thirteen cases having died, one of these from bronchopneumonia a few days afterward, probably due to an inhalation of material during the lavage, which was performed with difficulty, and the other having been admitted moribund after having been kept for two hours outside without treatment. The treatment in all the cases consisted in a most thorough lavage with 10 per cent. alcohol and in the later few cases this was followed by lavage with plain water. In eleven of the cases milk and eggs were introduced through the tube and left in the stomach. Sodium sulphate was administered through the tube in three cases and intravenously in three cases and magnesium sulphate in the stomach in four cases. Stimulation with strychnin and digitalin was resorted to in eight cases.

CASES TREATED WITHOUT ALCOHOL.

A study of the records of the fourteen cases of carbolic acid poisoning treated at the Lakeside Hospital previous to the introduction of the use of alcohol in treatment surprised the authors by their similarity to their own results. In this series of fourteen, all of which were treated by thorough lavage, either with plain water or a solution of magnesium sulphate, there were only three deaths, two of these due to pneumonia and the third a case admitted ten hours after taking two ounces of the acid, an emetic of magnesium sulphate having been resorted to, but no lavage performed. In this early series also the cases which had taken the poison in alcoholic beverages seemed to show a greater tendency to unconsciousness than those that had taken it pure or in water. In the ten cases in which the record was made as to the manner in which it was taken, five took it with alcohol and five either pure or in water. Of the five alcoholic cases four were unconscious and one semi-conscious, while of the five that had not used alcohol two were unconscious, one semi-conscious and two conscious.

CASES COLLECTED FROM THE LITERATURE.

The following cases have been collected from literature, and though many of the reports are too meager for any conclusions to be drawn from them, they are inserted that the reader may see the various ways in which alcohol has been used in carbolic acid poisoning in recent years. It will be noticed that they are all of isolated cases.

In these cases the following abbreviations will be used:

S. and A. Sex and age.

P. Amount of poison and how administered.

T. Time elapsed before treatment.

L. Local eschars.

Sy. Symptoms.

Tr. Treatment.

C. Time elapsed before consciousness returned.

A. After history.

R. Results.

CASE 1.—Fraser,⁷ 1895. S. female. R. phenol, 3i, in whisky. T. 15 min. L. none. Sy. coma. Tr. atropin hypo, lavage. C. 8 hours. A. vomited 24 hours. R. well.

CASE 2.—Buchanan,⁸ 1899. S. and A. female, 35. P. phenol, 3i. T. short. Tr. sodium sulphate hypodermic, lavage with 2 quarts of 35 per cent. alcohol. R. well.

CASE 3.—Adams,⁹ 1899. S. and A. female, 36. Tr. alcohol 1 pint, by mouth; alcohol, 3iv, and whisky, 3iv, q. 15 min. Six doses whisky, 3ii q. h. 8 doses. R. well.

CASE 4.—Kelly, 1899. A. 21 months. P. phenol, 3i. T. 6 min. Tr. olive oil. Alcohol, 3vi. Apomorphin, 1/30 gr. Whisky, 5i, q. 10 min. Eight doses. C. 30 min. R. well.

CASE 5.—Klein,¹⁰ 1900. S. and A. female, 29. P. phenol,

3ii. Tr. alcohol, 3iv, by mouth q. ½ hours, 4 doses, then 3i q. 1 hour, 4 doses. Morphia, ¼ gr. R. well.

CASE 6.—Rodman,¹¹ 1900. S. and A. female, 60. P. phenol, 3ii, pure. T. short. L. lips and tongue. Sy. coma, cyanosis, subnormal temperature. Tr. alcohol, 3iv, into pharynx, then lavage with warm water and then with dilute alcohol. A. temperature for 2 days, 101 to 102. R. well.

CASE 7.—Pinkney,¹² 1901. S. and A. female, 3½ years. P. phenol, 3iv. T. ½ hour. L. lips and chin. Sy. coma, cyanosis, thready pulse. Tr. alcohol, 3iiiss. Strychnin, hypodermic, 1/30 gr. Infusion normal saline, 1 pint. C. 7 hours. A. temperature rose rapidly to 106. R. death in 12 hours.

CASE 8.—Gries,¹³ 1901. S. and A. female, 3. Sy. coma, weak pulse, cyanosis, appeared moribund. Tr. Hypodermic of ether. Magnesium sulphate, 1½ quarts, by stomach tube, then lavage with 20 per cent. whisky and 3iv left in. Atropin, 1/200 gr. Strychnin, 1/40 gr., hypodermic. C. few hours. R. well.

CASE 9.—McDonald,¹⁴ 1902. P. phenol, 3i. T. 25 min. Sy. collapse, coma. Tr. stomach tube, alcohol, 6i left in a few minutes and siphoned off. This repeated once. Then lavage with water, whisky, 3iv, nitroglycerin, 1/100 gr., strychnin, 1/20. C. six hours. R. well.

CASE 10.—King,¹⁵ 1902. S. and A. female, 33. P. phenol, 3ss. 3 min. Tr. alcohol, 0ss. Then lavage with water, repeated. Alcohol, 3iii, left in. C. 4 hours. R. well.

CASE 11.—Marshall,¹⁶ 1903. S. and A. male, 74. P. phenol, 3i, and olive oil, 3iv, per rectum. T. immediate. Sy. coma, pulseless. Tr. irrigation with 2 quarts of water 1 hour and 10 minutes. Alcohol and water, aā3iv, repeated and irrigated. C. 8 hours. R. well.

CASE 12.—Atwell,¹⁷ 1903. S. and A. female, 35. P. phenol, 3ss, in water. T. 20 min. Sy. coma, cyanosis, weak pulse. Tr. atropin, 1/50 gr., hypodermic. Dilute alcohol, 3vi. Lavage with water, gallon 1. Alcohol, 95 per cent., 3vi. Lavage in 5 minutes. Magnesium sulphate, 3i, in water 6i. Stimulation. Infusion normal saline. R. well.

These two facts shown by a study of our own cases, namely, the immaterial difference in the mortality, whether the stomach was washed with alcohol or with some other liquid, and the apparently greater constitutional symptoms when the drug was taken with alcohol then when taken clear or in water, seemed to throw such grave doubts on the antidotal power of alcohol to carbolic acid when taken internally, and these doubts agreeing so well with the opinions expressed in the recent textbooks on toxicology, the authors determined before publication to undertake some experimental work in the effort to prove or disprove the antidotal action.

3. EXPERIMENTAL DATA.

BY DRS. BROWN AND CLARKE.

Acting under the direction of Dr. Torald Sollmann, a series of animal experiments were carried on in the pharmacological laboratory of the Western Reserve University, the results of which are herewith published.

INTRODUCTION.

Some experimental investigations of the subject have been undertaken by others, but these are rather unsatisfactory; the number of animals used by each investigator seems rather too limited to make the conclusions binding.

In 1901 Thornton¹⁸ made some experiments on a series of five dogs, giving by stomach from one to four

10. Rodman: Med. Record, N. Y., 1900, vol. lviii, p. 70.

11. Gries: Therapeutic Gazette (Detroit), 1901, vol. xxv, p. 587.

12. McDonald: Fort Wayne Med. Jour. Mag., 1902, xxii, p. 59.

13. King: New Orleans Med. and Surg. Jour., 1902, vol. liv, p. 749.

14. Marshall: Med. Record N. Y., 1903, vol. lxiii, p. 174.

15. Atwell: Virginia Med. Semi-Monthly (Richmond), 1903, vol. viii, p. 73.

16. Thornton: Progressive Med., Dec. 1901, p. 343.

8. Adams: N. Y. Med. Jour., 1899, vol. lxx, p. 780.

9. Klein: Jour. Am. Med. Assoc., 1900, xxxv, p. 1557.

drams of phenol, undiluted, or with alcohol or oil. This was left in the stomach, together with the antidote. He gave to one animal phenol mixed with 95 per cent. alcohol, and after the onset of toxic symptoms administered more alcohol. The result was death in four hours, with no signs of improvement. Another animal was given phenol mixed with oil, which gave practically the same result. In the remaining animals phenol was administered and, after the poison symptoms had become manifest, alcohol in single or repeated doses was given without any beneficial effect.

The following year Wallace¹⁷ made observations on two rabbits and two cats. The first rabbit was given the lethal dose (0.6 gm. per kilo) subcutaneously, resulting in death in one hour and ten minutes. The second rabbit was given 5 cc. of 60 per cent. alcohol subcutaneously and this followed five minutes later by the same dose of phenol as was given the other rabbit. The toxic symptoms appear after the same interval of time as in the first rabbit. Five cc. doses of the diluted alcohol were injected at intervals, without improvement of the condition. The animal died in one and one-fourth hours.

The cats were given the lethal dose by stomach, one receiving the aqueous solution and the other receiving the phenol in 60 per cent. alcohol. Alcohol was later injected subcutaneously, but without effect. Both animals died after nine hours.

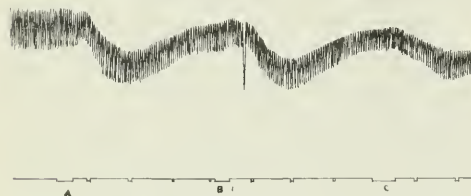


Fig. 1.—Intravenous injections of 1 c.c. per kilo of 1 per cent. phenol in normal saline at A, B and C. Time marks 15 seconds.

Method of Investigation.—Our experiments may be divided into three groups:

1. Systemic antagonism (intravenous injection).
2. Antagonism in the stomach (5 per cent. phenol).
3. Efficiency of lavage (undiluted phenol).

I. SYSTEMIC ANTAGONISM.

For the purpose of determining whether alcohol can lessen or abolish the systemic effects of phenol, a 1 per cent. solution was injected intravenously into dogs, the dose of 1 c.c. per kilogram (0.01 gm. of phenol) being repeated every minute. Three solutions of phenol were employed—one in normal saline solution, the second in 10 per cent. alcohol, and the third in 20 per cent. alcohol, the results produced by these solutions being compared.

Operative Methods.—All dogs used in these experiments were first given sufficient morphin to render them quiet and then kept under complete ether anesthesia during the course of the experiment. Before coming out of the anesthetic condition they were killed.

A cannula was placed in the trachea, through which the anesthetic (ether) was afterward given, and a cannula in the carotid for blood pressure tracings. The intravenous injections were made through a cannula placed in the femoral vein and connected with a graduated burette which contained the injection solutions.

(A) *Effects of Phenol in Normal Saline.* These will be described first for the purpose of comparison.

Blood pressure, and in some cases respiratory tracings, were taken. In all the animals the intravenous injection causes a fall of blood pressure which has a tendency toward recovery, depending on the quantity injected (Fig. 1.) Th. Gies¹⁸ obtained the same results in his experiment with animals. The average fall is from 20 to 30 mm. of mercury. The fall begins almost immediately after the injection; reaches the minimum in thirty seconds and returns to about normal after sixty seconds. Each successive injection becomes less effective, with a tendency toward a slow gradual fall of blood pressure. Where the lethal dose is injected there is a rapid fall which terminates by stoppage of the heart (Fig. 2.).

Respiration is but little affected except by the mechanical interference of the convulsive movements.

Onset of Convulsive Movements.—In all the animals employed the intravenous injection causes a gradual onset of convulsive movements beginning with a tremor of the legs and jaw, which gradually increases until the contractions acquire a clonic convulsive character. The absence of a rise of blood pressure which is usually associated with convulsions is probably due to the deep anesthesia and to the rather mild type of the convulsions.

(B) *Effects of Alcoholic Solutions of Phenol.*—

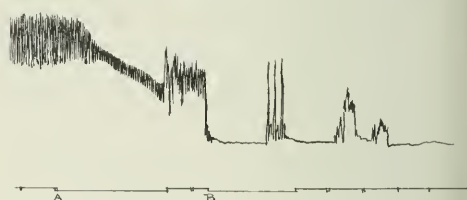


Fig. 2.—Death from intravenous injection of phenol. Injection made at A.

These do not differ from those of the saline solution of phenol in either quality or quantity. This is shown by Table 1.

TABLE 1.—INTRAVENOUS INJECTION. (Dog).

| Dog. No. | Solvent. | Fall of Blood Pr. after first Injection. | Twitching movements after c.c. per kilo. |
|----------|---------------------|--|--|
| 1 | Normal saline... | 30 mm. | 5 c.c. |
| 4 | Normal saline... | 40 mm. | 5 c.c. |
| 2 | 10 p. c. alcohol... | 24 mm. | 3 c.c. |
| 3 | 20 p. c. alcohol... | 40 mm. | 5 c.c. |

II. ANTAGONISM IN THE STOMACH.

To determine the possibility of an antagonism in the stomach, the phenol was administered by stomach tube to rabbits. The just fatal dose (0.6 gm. per kilo.) was given, as a 5 per cent. solution in water, and in 10 per cent. alcohol and in 10 per cent. glycerin. These animals were not anesthetized.

(A) *Effects of the Watery Solution.*—The first symptoms start in one to three minutes and consist in a general trembling of the body and legs. The legs grow weaker and the animal falls on its side. Convulsive movements of a clonic type then appear, varying somewhat in intensity; the legs may become extended and rigid, while in some cases the head is thrown backward. Death occurs in from twenty-six minutes to six days.

The alcoholic and glycerin solutions produced the same effect quantitatively and qualitatively. This is shown in Tables 2 and 3.

17. Wallace: N. Y. University Bul. of the Med. Sci., 1902, vol. 1, p. 5.

18. Gies: The Archiv. für Exp. Path. and Pharm., 1880, vol. xii, p. 401.

TABLE 2.—DETAILS OF STOMACH EXPERIMENTS ON RABBITS.

| Rabbit No. | Weight in (lbs.) | Amount of Phenol Given (always 0.6 gm. per kilo.) | Diluent used. | Time Elapsed Before Appearance of Convulsive Movements. | Final Result. |
|------------|------------------|---|----------------|---|---------------------------|
| 1 | 920 | 11 | Water. | 1 m. 45 sec. | Died after 28 mlu. |
| 7 | 770 | .. | Water. | .. | Tube passed into trachea. |
| 8 | 490 | 5.5 | Water. | 1 m. 30 sec. | Died after 25 min. |
| 9 | 980 | 11 | Water. | 1 m. 20 sec. | Died after 6 days. |
| 10 | 770 | 9.2 | Water. | 2 m. 10 sec. | Died after 8 hrs. |
| 3 | 870 | 10.4 | 10 p. c. alc. | 1 m. 50 sec. | Died after 24 hrs. |
| 5 | 920 | 11 | 10 p. c. alc. | 6 m. 30 sec. | Died after 3 days. |
| 12 | 730 | 8.7 | 10 p. c. alc. | 3 m. 15 sec. | Died after 18 mlu. |
| 13 | 670 | 8 | 10 p. c. alc. | 2 m. 30 sec. | Died after 2½ hrs |
| 2 | 830 | 10 | 10 p. c. glyc. | 1 m. 40 sec. | Died after 3½ m. |
| 4 | 1450 | 17.5 | 10 p. c. glyc. | 2 m. 45 sec. | Survived. |
| 6 | 1200 | 14.4 | 10 p. c. glyc. | 3 m. 30 sec. | Survived. |
| 11 | 780 | 9.3 | 10 p. c. glyc. | 12 m. 10 sec. | Died after 2 days. |

* It was thought some of the solution was aspirated into the trachea in this animal.

TABLE NO. 3.

TIME OF DEATH IN STOMACH EXPERIMENTS. (Rabbits.)

Phenol dissolved in

| | | | | |
|-------------------|----------------------|----------------------|--------------------|-----------|
| Water. | 25 minutes | 28 minutes | 8 hours | 6 days |
| Alcohol. | 18 minutes | 2½ hours | 24 hours | 3 days |
| Glycerin. | 3½ minutes | 2 days | Survived | Survived. |

Microscopical Examination of the Stomachs.—This was undertaken by Dr. W. W. Williams in rabbits 1, 2, 3, 8 and 12. The findings may be arranged, according to the severity of the lesions, as follows:

| Rabbit No. | Lesion. | Medium in Which Phenol was Administered. | Time Elapsing Before Death. |
|------------|---|--|-----------------------------|
| 1 | None | Water | 28 minutes |
| 3 | Very slight | Water | 25 minutes. |
| 8 | Fairly marked | Glycerin | 3½ minutes. |
| 9 | Very severe. | Alcohol | 24 hours. |
| 12 | Very severe chronic gastritis (probably not due to the drug). | Alcohol | 18 minutes. |

It is seen that the local lesions are quite as severe with the glycerin or alcoholic solution as they are with the watery solution.

From these results it is evident that the alcoholic solution is no less toxic than the aqueous solution; while

washings returned clear. One c.c. per kilo. of 95 per cent. phenol was then introduced through the tube and allowed to remain for ten minutes, when lavage was started, either with water or with 10 per cent. alcohol.

(A) *Effects of Concentrated Phenol by Stomach Without Lavage.*—This was tested on one animal. This showed an immediate fall of blood pressure amounting to 40 mm. of mercury. The pressure remains about constant after this primary fall, with a tendency toward a slight gradual fall, which continues until death. At no time during the experiment was there any evidence of improvement in the condition.

(B) *Lavage.*—In those animals in which lavage is employed, the blood pressure begins to rise after an interval of time which varies with different animals. The convulsive movements cease and the animals show all signs of recovery, the condition being judged by the blood pressure and convulsive movements.

The results are shown in Figure 3. They are identical for all the experiments, whether water or alcohol was used for lavage.

The details of the experiments are shown in Table 4.

4. THE LOCAL ANTAGONISM OF CARBOLIC ACID AND ALCOHOL, AND OTHER PHENOL—SOLVENTS.¹⁹

It will be recalled that the employment of alcohol in phenol poisoning was originally based on the local antagonism of the two drugs. This antagonism, as is well known, can be easily demonstrated, by dipping the finger in carbolic acid and then washing it at once with strong alcohol. To secure a complete removal of the phenol effects, however, it is essential that the application of the phenol should be of short duration, and followed very quickly by the alcohol. This is illustrated by the experiments of Wallace.¹⁷ For instance, when the alcohol was used immediately, it removed all the effects completely; when it was used after ten minutes it removed the superficial whitening of the skin, but not the deep effects. When it was used after thirty minutes it had almost no effect. The addition of a small quantity of alcohol to the phenol increases its local effects—an obser-

TABLE NO. 4.
EXPERIMENTS ON STOMACH OF DOGS.

| Dog Number. | Weight. (Kilo.) | Solvent Used. | Time in Stomach. | Initial Rtd Pressure. | Blood Pressure 10 m. After Giving. | Blood Pressure Remains at Low Level. | Blood Pressure at End of Experiment. | Convulsions Ceased. | Duration of Experiment. | Result. | REMARKS. |
|-------------|-----------------|---------------|------------------|-----------------------|------------------------------------|--------------------------------------|--------------------------------------|---------------------|-------------------------|---------|--|
| 10 14 | (Control) | ... | 105 | 72 | Until death. | ... | At death. | 2 hrs., 45m. | Died. | ... | Died. |
| 5 5 | 4 | Water. | 10m | 102 | 37 | 1 hr., 27 m. | 102 | 2 hours. | Recovered. | ... | Animal killed. |
| 5 5 | 4.6 | Water. | 9m | 105 | 43 | 30 minutes. | 95 | 1 hr., 30m. | ... | ... | Died from ether. |
| 7 7 | 3 | Alcohol. | 10m | 98 | 60 | 34 minutes. | 60 | 1 hr., 40m. | ... | ... | Animal killed. |
| 7 7 | 3 | Alcohol. | 10m | 101 | 30 | 15 minutes. | 100 | 3 hrs., 10m. | ... | ... | Died from ether. |
| 7 7 | 3 | Alcohol. | 10m | 89 | 30 | Until death. | 20 | At death. | 16 minutes. | Died. | Tube did not enter stomach in washing. |

the glycerin solution appears to be rather less fatal than the others, since two of the animals recovered completely. This might be due to slower absorption; for we are loathe to attribute it to any antidotal properties, either chemical or physiologic.

III. EFFICIENCY OF LAVAGE.

To determine the effect of lavage after the administration of concentrated phenol, and the relative value of water and diluted alcohol for this purpose, we employed dogs, anesthetized with morphin and ether, and connected for blood-pressure tracings. A stomach-tube was inserted and the stomach washed with water until the

vation which effectually refutes the theory that alcohol and carbolic acid enter into an innocuous chemical combination. The increased effect is to be explained by a more rapid absorption of the slightly diluted acid.

Wallace attributes the antagonism to the solvent action of alcohol on the phenol which would remove it much more readily from the superficial layers of the skin than would water. If the theory be correct, other phenol solvents must produce the same effect as alcohol. Wallace tested this with chloroform, ether and benzol, with positive results.

19. This chapter was kindly furnished by Prof. T. Solimann, by whom the experiments were performed.

We made the following experiments, using somewhat different solvents:²⁰

EXPERIMENT 1.—(a) The finger tips are plunged for thirty seconds into liquefied (95 per cent.) phenol, then for five minutes into the solvents. At the end of this time the finger in water is blanched, the fingers in 50 per cent. alcohol, 50 per cent. glycerin, ether and cottonseed oil appear normal. (b) The fingers are again dipped in the carbolic acid for one minute, then for one minute in the solvents.

The blanching is very conspicuous in water; then follows the 50 per cent. glycerin, then the 50 per cent. alcohol and ether.

The sensory effects are greatest in water, ether and 50 per cent. alcohol; less in 50 per cent. glycerin and oil.

EXPERIMENT 2.—The fingers are dipped into liquid carbolic acid for one and one-half minutes, then into solvents and observed at end of (a) one minute, (b) two and three minutes.

(a) One minute in solvents: The blanching is by far the most conspicuous in water; then follows the 25 per cent. glycerin and 25 per cent. alcohol. Turpentine and cottonseed

effect is mainly due to solution and is not chemical. The solvents also tend to lessen the burning sensation, probably by removal of the phenol. They appear to be quite unable to prevent the late effects of the phenol, which may be attributed to the phenol which had already penetrated deeply when the solvent was applied.

It appeared interesting to determine also whether these solvents exert any effect when the carbolic acid is left in contact with the skin. For this purpose 5 per cent. solutions of phenol were made in various solvents. These were arranged in five small beakers, so that all the fingers of the left hand could be inserted and withdrawn simultaneously. The degree of blanching, tingling and anesthesia was compared after five minutes. The tingling sensation proved to be too irregular to be of any value for comparison. As in the previous series, the nature of the solvents were unknown to the experimenter and compiler until the conclusions had been drawn.

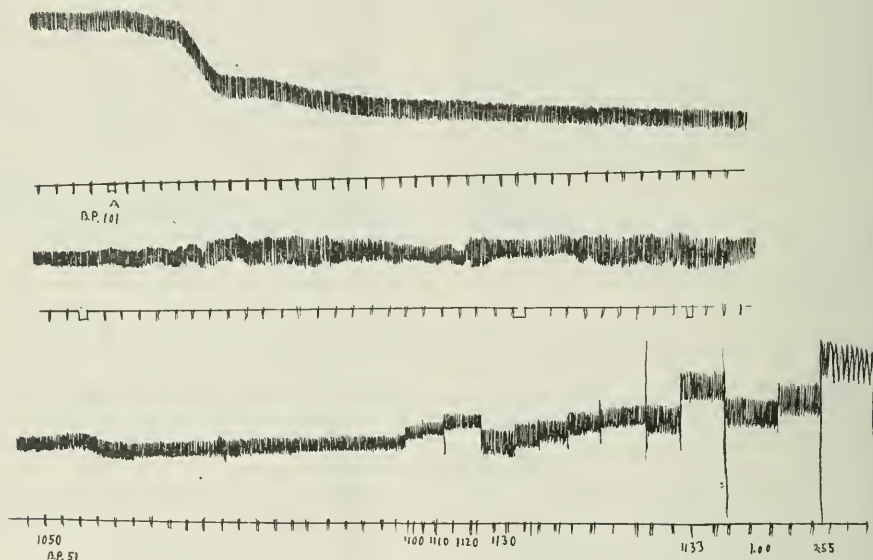


Fig. 3.—One c.c. per kilo of 95 per cent. phenol introduced into the stomach at A, time 10:25. Began lavage at B, time, 10:35, finished lavage at C. Blood pressure at end of experiment 100, time, 2:55. Base line corresponds to 0 pressure.

oil appear normal. Burning is felt in the water, and in the glycerin and alcohol solutions, not in turpentine and oil. The water finger also shows the greatest anesthesia.

(b) Two or three minutes in solvents: The blanching is most pronounced in the water; then follows 25 per cent. glycerin, then 25 per cent. alcohol. None is seen in turpentine and oil.

(c) The finger which had been put in water and which was still very much whitened, is rinsed in 95 per cent. alcohol. The blanching disappears almost completely at once.

(d) On the following day the skin of the fingers is rough and broken, and this condition persists for several days. It is alike in all the fingers.

It may be concluded that all phenol solvents arrest the local action of the phenol, i. e., the blanching action.

This and the observation that dilution of the alcohol greatly impairs its efficiency sufficiently show that the

EXPERIMENT 3.—Comparison of 5 per cent. phenol in water (W), 10 per cent. alcohol (A), 10 per cent. glycerin (G), and cottonseed oil (O).

Experiments on two persons gave identical results:

The anesthesia was most conspicuous in W; somewhat less in A, absent in G and O.

The blanching was marked and about equal in W and A, almost absent in G, quite absent in O.

EXPERIMENT 4.—Comparison of 5 per cent. phenol in water, 25 per cent. alcohol, 25 per cent. glycerin, turpentine and cottonseed oil. The experiment was repeated on nine persons, with the following results:

| Anesthesia. | Most Marked. | Less Marked. | Absent. |
|----------------------------|-------------------|-------------------|----------|
| Water | 2 cases | 1 case | 1 case. |
| Alcohol | 2 cases | 3 cases | 1 case. |
| Glycerin | None | 1 case | 8 cases. |
| Turpentine & Oil | None | None | 9 cases. |

20. In all the experiments the subject was not aware of the nature of the solvent, the containers being numbered and the results tabulated by these numbers.

BLANCHING

| | Most Marked. | Second Place. | Third Place. | Fourth Place. | Absent. |
|----------------------|-------------------|-------------------|-------------------|-------------------|----------|
| Water | 9 cases | None | None | None | None. |
| Alcohol | None | 5 cases | 2 cases | None | 2 cases. |
| Glycerin | None | 3 cases | 3 cases | None | 3 cases. |
| Turpentine | None | None | 2 cases | 3 cases | 4 cases. |
| Oil | None | None | None | None | 9 cases. |

TINGLING.

| | Most Marked. | Second Place. | Third Place. | Absent. |
|----------------------|-------------------|------------------|------------------|---------|
| Water | 1 case | None | None | 8 cases |
| Alcohol | 3 cases | None | None | 6 cases |
| Glycerin | None | 1 case | None | 8 cases |
| Turpentine | None | None | None | 9 cases |
| Oil | 1 case | None | 1 case | 7 cases |

These results show that the addition of all the solvents diminishes the local effects of phenol. The effect on the tingling sensation is, however, irregular. This may be attributed to the difficulty of exact observation. The effect is more pronounced on the superficial action (blanching) than on the deeper actions (anesthesia). Oil alone prevents both actions in all cases. Then come, in order of efficiency, turpentine, 25 per cent. glycerin, and 25 per cent. alcohol. Glycerin is more effective, for the same degree of dilution, than is alcohol.

In this experimental arrangement the effect of the solvents can not be explained, as in the previous series, by removal of the phenol. Nevertheless, it seems to be connected with their solvent power. It may be explained in the following manner: If a substance is introduced into a mixture of two immiscible solvents, a and b, it will be distributed between these two solvents in a ratio proportional to its solubility in a and b. If it is more soluble in a, this will contain a greater amount. This may be demonstrated by shaking a 1 per cent. solution with an equal volume of olive oil in one test tube, and with an equal volume of petroleum benzin in another. If a little ferric chlorid solution is added to both test tubes, the watery layer will not be colored in the oil tube (the phenol having passed into the better solvent), while it will be colored a deep violet in the benzin tube. The benzin being a poor solvent, almost all of the phenol has remained in the water.

In our experiment, the fluids of the tissues constitute one solvent, the fluid in which the carbolic acid is applied the other. The better the solvent power of our solvent, the less of the carbolic acid will pass into the tissues.

In the case of alcohol, and to a lesser extent with glycerin solutions, some of the solvent is doubtless absorbed into the tissues, which explains the relative inferiority of these to turpentine, and especially to oil, which are absorbed much more slowly.

These experiments contradict the rather prevalent opinion that the absorption of phenol is quickened by alcohol and perhaps also by glycerin. As far as we know, this opinion is purely theoretical. It may be true as far as the addition of small quantities of these substances are concerned, which would then act, not so much as solvents, but by increasing the fluidity of the phenol—a very important factor in absorption. It might theoretically hold also for the alimentary canal, since these solvents are absorbed there with considerable rapidity. This view is supported by the clinical experiences, although our experiments on rabbits (Series 2) can scarcely be interpreted in its favor. As concerns the skin, the experimental results constitute a positive refutation of the quicker absorption of alcoholic solutions in this situation.

The relative inferiority of alcohol to the other solvents is not sufficient to be of importance; while its greater fluidity and its miscibility with water constitute practical advantages more than sufficient to counterbalance the theoretical deficiencies. In emergencies, however, the value of the other solvents, particularly oil, should be borne in mind. It is interesting to note that the use of the latter antidote preceded that of alcohol.

GENERAL CONCLUSIONS.

From the above experiments the following conclusions may be drawn:

1. Alcohol has a local antidotal effect to carbolic-acid burns, due to its solvent action.

2. There is no evidence of chemical antagonism between alcohol and phenol.

3. There is no effect produced by alcohol on carbolic-acid poisoning after the latter has been absorbed into the system, as is shown by the intravenous experiments on dogs.

4. Alcohol and phenol placed in the stomach give no different results from phenol alone.

5. Lavage with alcohol is effective when the phenol is in the stomach, but its superiority over lavage with water is not pronounced.

From the clinical aspect it appears that alcohol has a local antagonism to carbolic acid. When the latter is taken in whisky the feeling of discomfort is less marked, and the local eschar is absent or but slightly evident. In cases of poisoning, lavage with alcohol is apparently an effective method of treatment. This is borne out by a comparison of thirteen cases here reported with a mortality of 15 per cent., with the collection made by Falck²¹ in 1863 of forty-six cases in which the acid was taken internally with thirty-five deaths, a mortality of 65 per cent. On the other hand, the fourteen cases treated at the Lakeside Hospital by lavage prior to the use of alcohol with three deaths, a mortality of 21 per cent., give results so nearly akin to the alcohol cases that it would appear that the lavage were the dominant factor rather than the alcohol. When it is considered that it was only in the early nineties that stomach washing came into general use, and even later that the fear of its use in cases of corrosive poisoning was overcome, it seems probable that the good results in carbolic-acid poisoning from the use of alcohol, during the past few years, were due to the lavage and not to any antidotal property of the alcohol.

The authors do not wish to be interpreted as considering that alcohol is of no value in cases of carbolic-acid poisoning. *A priori* its solvent action and a slight tendency in the experiments with phenol in the dog's stomach, to an earlier rise in blood pressure, when the stomach is washed with an alcoholic solution, than when water is used, point to its value as a means of removing the poison from the stomach. From abundant clinical evidence, both in their own experience and in literature, it would appear to them to be an aid, when properly used, in the saving of life. On the other hand, this same solvent property, and the more marked symptoms of intoxication, when the poison has been taken in whisky, seem to establish a contradiction to the alcohol being used as an antidote and left in the stomach.

The procedure recommended is immediate, abundant lavage with 10 per cent. alcohol, this to be followed by lavage with plain water, and stimulation as indicated. The point to be borne in mind is that alcohol is not effective after the carbolic acid has been absorbed and, to

21. Falck: Ref. Blyth, Poisons. Their Effects and Detection. Wood's Library, 1885, p. 146.

be of value, must be used while the poison is still in the stomach.

The other common methods of treatment of phenol poisoning are now being investigated, and the results will be communicated later.

The fact that three of the five fatal cases in the Lakeside Hospital series died of pneumonia, and one, at least, of these of a definite bronchopneumonia of the inhalation type, has impressed the authors with the necessity of care in the method of performing lavage in this class of cases. With the patient lying on his back, in a comatose condition, with the gastric contents regurgitating around the outside of the stomach tube, it is a simple matter for material to enter the larynx and set up an inflammatory process in the lung. To overcome this danger, the authors recommend, immediately after the tube is passed, to turn the patient on his side or face, with the head low, thus allowing any fluid in the pharynx to escape through the mouth. Since this method has been used, there have been but few pulmonary signs during convalescence.

For his kindness in directing the work and for valuable suggestions and criticism, the authors wish to express their sincere thanks to Dr. Torald Sollmann.

TESTS FOR ACETONE IN THE URINE.*

ALONZO ENGLEBERT TAYLOR.

SAN FRANCISCO.

The interest of the surgical section of the medical profession is just now deeply concerned with the question of acetouria. This interest has been awakened by observations of the frequent occurrence of the urinary acetone-complex following anesthesia and associated with a toxicosis that has been fatal in a number of instances. That acetone occurs frequently following anesthesia has been long known, and that it frequently occurs following the ingestion of many narcotics is equally well known. That the toxicosis is the result of the acetone-complex, that it is, in other words, an acid intoxication, is not demonstrated. On the contrary, it is much more probable that the toxicosis and the acetone-complex are fellow results of a widespread autolytic degeneration, of a ferment intoxication that has been in some unknown way inaugurated by the anesthetic or narcotic. It is known that many poisons act, in large part, by the inauguration of such autolyses, and this observation holds as well for narcotics as for phosphorus. At present acetone is held to be always derived in the body from the fats through the intermediary stages of *b*-oxy-butyric and diacetic acids, but it can not be denied that it might have other derivations. Chemically, acetone might be easily derived from glycerin through the intermediary stage of di-oxy-acetone, and other reactions that are feasible from the chemical point of view will be easily recalled. For the anesthetics, a second element enters into the discussion. The chemical relations of chloroform and ether as so close to acetone that it is probable that a certain amount of acetone may be formed in the body from these substances. We have to deal, therefore, with a derivation of acetone from the fats of the body under the influence of a toxic autolysis; and a derivation of acetone of purely chemical nature from the anesthetic. Whether or not acetone occurs in the urine following every administration of chloroform is not known; in the published researches reliable meth-

ods have not been used. Certain it is that acetouria is now being diagnosed by unreliable tests.

For several years I have tested nearly all the urines that have come under my notice with the different tests for acetone, and have also had a large class experience with mixed urines. These experiences have taught us that the commonly used tests for acetone are quite valueless, in that they yield positive results with urines free of acetone in the practical sense. There are two really good tests for acetone, those of Stock and of Denigès. Both these tests have been repeatedly recommended for clinical use, but for some inexplicable reason they have not been employed to any extent by clinicians. The test of Stock is a particularly reliable one, because it is a test for ketones and is not given by alcohols and aldehyds. It is very simple and rapid in execution. One must use for it the distillate of the urine. This, it must be insisted on, must be the rule for all tests for acetone. In classroom work we use from 50 to 100 c.c. of urine, which is made acid by the addition of a few drops of either acetic, hydrochloric or sulphuric acids. The first 10 c.c. of distillate will contain nearly all the possible acetone. For the use of the older tests for acetone (the iodoform, the mercuric oxid and the sodium nitroprussid tests), the distillate must be subjected to a second distillation; for the Stock and Denigès tests, however, this is not necessary. About an inch of the distillate is placed in a test-tube, a drop or two of a 10 per cent. solution of hydroxylamin hydrochlorid added (shaken), then a drop or two of a 5 per cent. solution of sodium hydroxid (shaken), then a couple of drops of pyridin (shaken), then about an inch of ether (shaken), bromin water is then added, drop by drop, with mixing until the ether layer becomes yellow, and then a few drops of strong hydrogen peroxid are added; if acetone be present, the ether will turn a distinctive green-blue. The test sounds a little formidable, but when the reagents are ranged in a row of dropping bottles, it is very simple. The test is not very delicate; for example, I have never seen a positive test in a normal urine of a person on a diet of not over 100 grams of fat *per diem*, though we know that all urines contain a faint trace of acetone. The test is very elective, and for practical work the lack of a greater sensitiveness is an advantage. The test of Denigès is quite as easily carried out. About an inch of the distillate in a test-tube is mixed with an equal amount of a solution of the subsulphate of mercury (mercuric oxid 50, sulphuric acid 200, water up to 1,000) and the mixture allowed to simmer (best stoppered) for about five minutes. A white crystalline precipitation occurs on cooling, which is very distinctive in appearance. If acetone be present in excess, the test is less well given. If but a trace be present, a trace of sodium chlorid will aid the precipitation, but it must not be added in excess. This precipitate is not soluble in dilute hydrochloric acid.

These two tests agree. I have never seen the Stock test present without finding the Denigès test positive. In a few instances I have obtained faint reactions with the Denigès test when the Stock test was negative. Equally distinctive is the Bamberger test: the formation of crystals of *p*-nitro-phenyl-hydrazone-acetone on heating the distillate, acidulated with acetic acid, with *p*-nitro-phenyl-hydrazin. It is not a convenient test, however, since the crystals must be recrystallized from alcohol and their melting point determined.

It is a yearly experience in our classroom work that, with the mixed urine of the students, the iodoform reac-

* From the Hearst Laboratory of Pathology, University of California.

tion is quite regularly positive, the mercuric oxid and the sodium nitroprussid tests very often positive, and the tests of Stock, Denigès and Bamberger negative. I have often had the same experiments with individual urines, and, although it has been most often noted in cases in which the patients were on drugs of various kinds, I have often seen it in the urine of healthy persons not taking any drug. When acetone is present, the iodoform, mercuric oxid and the sodium nitroprussid tests are positive; the error is always on the other side, they yield positive results when acetone and diacetic acid are absent.

I have often found acetone to be present as indicated by the tests of Stock and Denigès, without a reaction for diacetic acid being obtainable. This latter substance is tested for as follows: The urine is acidulated with hydrochloric or sulphuric acid and then extracted with ether. The ether will contain other substances besides the diacetic acid and acetone, and may be purified, if desired, as follows: The ether is shaken with an alkaline water which will take up the acid. This solution is then acidulated and the diacetic acid removed by another extraction with ether. This ether is then shaken with a solution of ferric chlorid in water so dilute that the color is scarcely discernible; if diacetic acid be present, the diluted Burgundy-red color is developed in the water. This test has one known fallacy. If the urine contain an abundance of aromatic derivatives, such as phenol, salicylic acid, the coal-tar antipyretics and hypnotics, traces of these will pass into the etherial extract, even into the purified etherial extract. To rule these out, the reaction of Arnold may be employed. The ether is mixed with an alkaline water and the diacetic acid is thus gotten back into watery solution. Five c.c. of a freshly made 1 per cent. solution of p-amido-aceto-phenon in 2 per cent. hydrochloric acid are mixed with half the volume of a 1 per cent. sodium nitrite solution, a few cubic centimeters of the watery solution and then a drop of strong ammonia are added. Two or three cubic centimeters of this mixture are then added to some 15 c.c. of hydrochloric acid, 2 or 3 c.c. of chloroform are added and then two drops of a fresh solution of ferric chlorid. The test-tube is then slowly and repeatedly inverted, so as to permit a mixing without especial shaking. The chloroform turns a marine blue if diacetic acid be present, a darker blue if large amounts be present. For unknown reasons the test fails at times; this is due possibly to the presence of other substances that pass into the etherial extract. I have never seen diacetic acid present without acetone. Diacetic acid may be present without b-oxy-butyric acid, but I have never seen the b-oxy-butyric acid present without diacetic acid.

If acetone is to be tested for, it should be done with good methods, entirely apart from any questions of the value of the information sought or the pathogenesis of the acetone-complex. The tests of Stock (described in 1899) and of Denigès (described in 1898) are certain in their results and easy of execution, and should replace the fallacious tests with Lugol's solution, mercuric oxid and sodium nitroprussid.

Alcoholic Dementia.—Dr. C. L. Hamilton says that alcoholic dementia is generally the result of organic brain degeneration, due to the action of alcohol, and that as the mental symptoms are the result of structural degeneration they are usually permanent and not relieved by the discontinuance of the poison.—*Illinois Med. Jour.*

THE TREATMENT OF ABORTION.

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NEW YORK.

Before entering on the consideration of this subject I wish to say a few words other than those concerning the treatment.

For practical purposes abortion may be defined as the interruption of gestation before viability of the child.

Physicians are not infrequently consulted as to whether or not the induction of an abortion is indicated in this or that case, and one must be very wary before giving an opinion, because the history given by the person asking for advice is often misleading. In heart disease, when there is dilatation with sufficient hypertrophy to compensate for the dilatation, the induction of an abortion should not be sanctioned. Neither is it indicated in psychical disturbances or in pulmonary diseases, except perhaps under exceptional circumstances. It is indicated, however, in pernicious hyperemesis and in some cases of chorea. In consultation with a prominent neurologist I saw one patient in whom convulsions occurred at frequent intervals, the patient not having been subject to epileptic seizures before pregnancy. They ceased after the uterus had been emptied. In nephritis the induction of abortion, in my opinion, is always indicated if the renal disease was present before the conception or if it manifests itself during the first three or four months of gestation.

In distorted or markedly contracted pelvis the patient should be permitted to decide for herself whether she wishes to go to term and be delivered by Cesarean section or whether she prefers to have an abortion induced. Due consideration should be given to each and all features connected with the individual case before the induction of an abortion is determined on, and it should never be undertaken unless it has also been sanctioned in consultation with another physician. If decided on the most favorable time for its induction is before the third or fourth month of gestation. Regarding the technic to be used in inducing an abortion, the well-known method with bougies has always proved itself the most reliable. If the bougie has not brought about the desired result in from twenty-four to forty-eight hours it may be supplanted with advantage with a tampon of a strip of nosophen (tetraiodo-phenolph-talein), iodoform or sterile gauze carried into and through the cervical canal into the uterus. As much gauze should be used as can be packed into the uterus without actually employing force. If carefully done there is no danger of rupturing the sac of the ovum. The precaution of the strictest asepsis or antisepsis in all details must be insisted on.

GENERAL TREATMENT.

The treatment of abortion may be divided into four parts:

1. Imminent abortion, in which there are signs pointing to the probable occurrence of an abortion, yet in which the symptoms may again subside on appropriate treatment.
2. Progressing abortion, in which the threatened abortion has further advanced so that its actual occurrence can not be prevented.
3. Incomplete abortion, in which a part of the prod-

ucts of conception has been expelled from the uterus, but some part is still retained therein.

4. Complete abortion, in which the ovum and its membranes have been completely expelled from the uterine cavity.

In imminent abortion the patients have either an occasional "spotting" of blood, or, at other times minimal bleeding; this is sometimes associated with an uneasy feeling in the lower abdomen, seldom also with slight expulsive pains. In the second class the patients have a more or less profuse hemorrhage, sometimes so profuse as to be dangerous. In this stage expulsive pains caused by uterine contractions are usually present; they may sometimes be absent, however. The bleeding may be constant or it may be at irregular intervals. This second stage is a continuance of the first division mentioned, and the ovum is still in the uterine cavity. The cervical canal in this stage may be contracted or it may be dilated or dilatable. In the third class the cervical canal may be either closed or dilated. The bleeding in this class varies in quantity and duration. It may continue only a few hours or it may last several days, and occasionally it may continue for weeks or even for months. It is usually dependent on retained particles of placenta if the bleeding is of long duration, or membranes or placental tissue in instances of short duration. In the fourth class the uterus has usually regained firmer consistence and the cervical canal is again contracted, but it may in some instances be dilatable. Sometimes quite free bleeding may still be present in this class of patients.

So far as the treatment of abortion is concerned, there is a unanimity of opinion as to the object to be attained in imminent abortion, but as to the progressing, incomplete and complete abortion there is a wide difference of opinion. I desire to give the views arrived at in more than twenty-six years of extensive personal experience with the different methods of treatment in vogue.

Before taking up the subject under separate heads permit me to consider it in a general way. It is understood that in cases of threatened abortion everything possible should be done to prevent the mishap. When, however, it is evident that the pregnancy can not be continued the uterus should be emptied at the earliest possible moment consistent with the greatest immediate and subsequent safety for the patient, and here opinions differ as to which method assures the greatest safety. It must be borne in mind that the treatment of abortion necessarily differs in its aspects in relation to safety according to the physician's surgical training and the surroundings of the patient. An intervention that would be safe in a well-conducted institution or in the homes of the wealthy, if performed by a man thoroughly educated in special work, would not be safe in a tenement house in the hands of an inexperienced physician. The object of my address is to express what I believe to be the safest treatment under all circumstances.

In the latter part of the seventies and in the early eighties, when active intervention was first recommended in instances of abortion, prominent specialists scorned those who would let Nature take her course, saying that they were too slow in keeping pace with progress. They advocated the invariable removal of the products of conception with instruments as soon as it was evident that abortion was inevitable. I, too, was then an obedient disciple of the teaching in favor of undelayed active intervention, but I have since modified my views because to a conscientious observer experience is an excellent teacher. Advocates of active intervention

in all cases of abortion take the position that patients who are treated by the expectant plan and allowed to abort spontaneously, after it is evident that the progress of the abortion can not be prevented, are in too much danger from hemorrhage and infection; that a better and more rapid involution of the uterus takes place if active measures are used; that there is less likelihood subsequently of endometritis, with perhaps the association of menorrhagic, metrorrhagia and irregular menstruation; less liability to abort again in the event of a future pregnancy; also less risk of sterility following the abortion. All these risks are avoided, they claim, if the patients who are in a stage of progressive abortion or who already have completely aborted were invariably curetted. The active intervention, it is claimed, is further of advantage because it is a great saving of time for the physician and the patient and is absolutely free from danger. I can admit only one part of all the advantages alleged for immediate intervention, namely, that of saving time. I also agree to the comparative freedom from danger if the attendant is a thoroughly trained man in that kind of work. Some recommend curetting always, even if the ovum and its adnexa have been expelled, for the purpose of completely removing the decidua vera and of making sure that no adherent particles of placenta remain; others, who modify somewhat that advice, believe and teach that it is necessary to curette only in cases of incomplete abortion. The result, especially in this country, is that the curette is used oftener than any other surgical instrument by family physicians, and curetting is thought by many to be a perfectly harmless and safe procedure. The carrying out in practice of such a view by so many physicians may be excusable if we consider that there are many whose teaching may be presumed to be from a fountain of authority who by sayings and writings taught many colleagues the necessity for curetting in abortion cases.

After seeing a very large number of infections and a number of accidents in the hands of physicians not so experienced in gynecologic techniques as they ought to be to undertake this kind of work successfully, and after keeping under protracted observation a large number of patients in hospital and in private practice, I gradually began to change my views, and the more I analyzed the more certain I became that I had been in error in my method of management of abortion cases.

Experience in obstetrics has shown that those patients do best with whom Nature is allowed to take her course and no intervention practiced unless there exists a positive indication for it.

While an abortion is a pathologic process in contradistinction to the physiologic process of labor, yet, so far as the necessity for surgical intervention in abortion is concerned, it should be restricted, just as in obstetric practice, to those cases in which there is an absolute indication for it. It would carry me too far to go into all the details as to why there exists such a difference between the pathologic process of abortion and the physiologic process of parturition; let it suffice to say that the principal reasons are to be found in the changes in the placenta and in the decidua during the latter period of pregnancy and in the greater contractile power of the uterus at the normal termination of gestation.

One need not worry about a possible future danger in the greater number of instances of abortion so long as the patient is kept clean, because Nature will take better care of an ovum and its adnexa or of retained remnants than we can with fingers or instruments. After most painstaking research I have been unable to confirm

the opinion which I formerly held regarding the detrimental effects previously spoken of; I have not found that patients who are treated without surgical intervention, that is, those in whom the interior of the uterus is not scraped with a curette, or with whom forcible manual removal of the conception products is not undertaken, are in worse health than those who were subjected to the aggressive surgical method. I have not observed that the retention of decidua in women who had previously enjoyed good health gave rise to any trouble during convalescence. Neither did such women seem more liable to endometritis or to subsequent sterility. It is true that the menses after an abortion, during the first one, two or three months, are somewhat more profuse than they were during former normal menstrual periods, yet this is not caused by the non-intervention; this condition is quite normal and frequently occurs after normal delivery. I do not wish to convey the idea, however, that artificial means to empty the uterus of conception products should be neglected when an indication therefor is present. When there is an elevation of temperature or evidence of decomposition of retained conception products, or in the event of profuse bleeding, it is necessary to resort to artificial means to empty the uterus.

If we do resort to intervention for the purpose of emptying the uterus it is preferable to accomplish this with a finger rather than to resort to a curette whenever it is possible thus to accomplish our object. The use of a curette is indicated only in those cases in which remnants can not be manually removed.

Sometimes difficulties are experienced in endeavoring to remove conception products manually, but these difficulties are experienced only when the local conditions are unfavorable for such intervention. Unless the index finger can be readily passed through the cervical canal and all parts of the uterine cavity explored, perseverance in attempts at the removal of the remaining parts of the placenta, membranes or fetus by manual manipulations is not advisable. It must be granted, however, that much depends on one's dexterity; it would not be logical to expect a physician who had had but little experience with gynecologic technic to possess the same ability as one who had had special training in this work and perhaps many years' experience. The manual removal of conception products is often difficult because of frequently recurring contractions of the cervix and because of the increased size of the uterus, so that it is difficult to get the finger up to the fundus.

The employment of a curette in a puerperal uterus is more or less risky because such a uterus does not offer the same amount of resistance to the rigid, unyielding instrument as the non-puerperal uterus, and consequently a perforation may occur even in the most skilled hands. The tactile sense of the finger, however, can always determine what it is doing in the uterine cavity. Another risk incurred when a sharp curette is used for the scraping is that the endometrium may be so deeply destroyed that subsequent atresia of the uterine cavity may result. Such women can not again become pregnant, and the menstrual function may cease entirely. I have seen several such cases.

If a perforation occurs in a non-infected uterus no harm is likely to result if the patient is immediately left alone and no further intrauterine manipulating done. If, however, the uterus is infected when the perforation occurs there is great danger of peritoneal infection. Further, there is danger of a loop of intestine coming through the perforation. I have seen one such

sad accident in the hands of a physician who had had considerable experience with this so-called trivial, but in reality, serious operation. Not only did the coil of bowel prolapse, but, still sadder, it was mistaken for the umbilical cord and torn. At the abdominal section, made by me, it was shown that the bowel had been deprived of its mesentery for about fourteen inches. A number of bowel accidents are on record as the result of curetting for the purpose of cleaning out conception products from a puerperal uterus. Profuse bleeding, and sometimes even alarming hemorrhage, may occur during the curetting of a puerperal uterus, and still the removal of all conception products is not assured.

Let us take for granted that an indication for the employment of a curette is present—and indications certainly do exist in some cases—what kind of an instrument should be selected? It is my opinion that a dull curette is useful only in those cases of abortion in which remnants of placenta are still in the uterus and inaccessible to the finger; then a large dull curette may be used to loosen them. I have not seen any cases in recent years, however, in which I found such an instrument necessary. Other treatment has proved itself more satisfactory and safer. If a curette be used at all, a large, broad, sharp curette is to be preferred, because no physical force is required to scrape over the interior of the uterus; a broad instrument is not so likely to cause a perforation as a narrow one, besides small adherent placental remnants are more likely to be removed by an instrument that covers a larger area.

SPECIAL TREATMENT.

Imminent abortion is best treated with absolute rest in bed and the internal administration of a narcotic like codein, giving doses of 0.03 to 0.05 (grs. $\frac{1}{2}$ to $\frac{3}{4}$) at intervals of one, two or three hours, according to circumstances, until from two to six doses have been taken. It may be possible that viburnum prunifolium is beneficial, but I have been unable to verify the claims made for it in the prevention of abortion when that drug alone was used. I believe that the first large dose of the narcotic and the absolute rest are the most important factors. Tampons and the preparations of ergot, or applications of ice bags, to stop the minimal bleeding sometimes present in these cases should be avoided, because these remedies may cause uterine contractions, and therefore are likely to bring about that which we are desirous of preventing. I have succeeded in preventing abortion several times after the fifth month of gestation when the cervix had been dilated to from one to two centimeters in diameter, and in one instance that is still quite vivid in my memory the dilatation had been advanced to about three centimeters. The finger could be readily passed through the cervical canal and could palpate the membranes, but no bleeding was present, yet after the administration of one-third of a grain of morphin subcutaneously, and three hours later three-quarters of a grain of codein, the expulsive pains, which had occurred at intervals of every hour or two for the previous half day, subsided and the patient went to term. Her pregnancy had advanced to the sixth month. In none of the patients alluded to had there been more than a minimal amount of bleeding; it was limited to a slight "spotting," so that one may, to some extent, be governed in giving a prognosis as to the possibility of preventing an abortion, even if the cervix is dilated or dilatable, by the amount and the character of the blood lost. For instance, in cases in which there was a dirty, quasi-grumous bloody discharge, although no marked

expulsive pains were present, and with a firmly contracted cervix, no matter what treatment was resorted to it had always been my misfortune to have the patients abort.

The consideration of progressing abortion and of incomplete abortion is the most important. Let us suppose a patient is bleeding and that the cervical canal is closed, the ovum and its adnexa still being in the uterus. The spontaneous expulsion may be aided by first giving a hot antiseptic vaginal douche and then tightly tamponing the vagina with iodoform gauze. The gauze acts as a hemostatic and also causes uterine contractions. In addition, an oxytocic should be administered internally. The gauze may remain in the vagina twenty-four hours, or, if the blood oozes through the gauze to any extent, it may be removed sooner and fresh gauze inserted more tightly. It is not at all unusual, however, to find that when the gauze is removed the entire ovum has been expelled and may then be found behind the gauze, or in further advanced pregnancy it may be that the embryo is expelled, while the rest of the uterine contents may still be in the lower part of the cervical canal, and the internal os may be again contracted above them, so that all may be readily removed with the fingers.

If the bleeding is not so profuse as to require more energetic immediate intervention, the patient may be ordered to lie perfectly quiet with the lower extremi-

washed, and the washing should be extended to the thighs and buttocks. After the washing with soap and water, all the parts should be washed with alcohol and then with an antiseptic solution. For the purpose of "scrubbing," a pad of sterile gauze or a ball of sterile absorbent cotton should be used. A brush is too rough for this purpose. After the cleansing of the patient and of the physician himself have been completed, it is advisable to surround the patient's thighs, etc., with sterile towels or a sterile sheet. The cervix should then be exposed with retractors or a speculum, and the gauze introduced.

An almost positive sign that the ovum has been expelled is the sudden cessation of expulsive pains, if they have been present previously. If the vaginal tampon is then removed, it is probable that the uterine tampon with the conception products has been expelled from the uterus. If this has been accomplished nothing further need be done; not even a vaginal douche need be given. The subsequent treatment is like that of an ordinary labor case; the external genitals must be clean and a sterile occlusion pad should be placed in front of the vulva and changed as often as may be necessary. It is always changed after each urination.

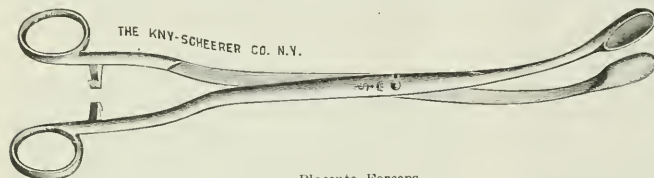
If a woman has been losing very much blood, so that more or less anemia has resulted, and if the bleeding is still continuous, it is not desirable to wait for the spontaneous expulsion by the treatment just described,

if the cervix is dilated to such extent that the interior of the uterus can be explored without using too much force in introducing the finger through the cervical canal. After the introduction of the finger, the removal of the uterine contents may be aided by compression of the fundus with the external hand; the intrauterine finger loosens the con-

ception products, and the patient should be requested to "bear down" as at child birth. To facilitate removal a placenta forceps (see illustration), which is a slight modification of the abortion forceps designed by Winter of Koenigsberg, may be used with advantage. With ordinary care there is no risk with such a forceps. The most accessible part is grasped without using so much compression as to separate the part held in the jaws of the instrument; with gentle rotary traction the part is extracted, and when sufficient is out of the external os the fingers are substituted and the extraction is completed with them. If it is thought necessary, the interior of the uterus may be examined with the finger, and if nothing further is detected this completes the work. No douche or tampon need be used if no evidence of infection has been present and if all the work has been done with the precautions described. The internal administration of ergot, however, is advisable. Two or three doses usually suffice.

If the bleeding is only moderate and the condition of the patient is good, that is, if there is no fever, then no intrauterine intervention should be resorted to, but another firm vaginal tampon should be inserted and oxytocics administered, the expulsion being relied on to take place spontaneously.

In patients with progressing abortion, but having no bleeding, either with a dilated or a contracted cervix, nothing should be done except to administer oxytocics, or the case may be entirely left to Nature unless indications arise which make intervention necessary.



Placenta Forceps.

ties closely adducted, which will cause the blood which flows into the vagina to form a clot, which acts as a hemostatic and also causes uterine contractions. Suppose, however, that the uterine contents have not been expelled when the gauze is changed, and the bleeding still continues, but that the cervical canal is dilated and the patient is entirely free from fever; then the safest plan is to take a sterile or, still better, a 2-inch bandage of nosophen (tetraiodo-phenolphthalein) gauze and tampon the uterine cavity with as much as can be introduced through the dilated cervical canal without using sufficient force to rupture the membranes. The upper part of the vagina is thus firmly tamponed and this will seldom, if ever, fail to incite uterine contractions of sufficient intensity to expel the ovum with or without the placenta and membranes. Usually everything is expelled.

It is understood that the strictest precautions should be used for the introduction of the intrauterine tampon. It should not be done with the patient in bed, only after washing off the vulva with some antiseptic solution. I have so frequently seen such erroneous procedure, supposed by the attending physician to be *secundum artem*, that I may be pardoned for referring to it in detail. The patient should be placed on a table or a couch which will permit of sufficiently good access to effect what should be done. After the thighs are flexed on the abdomen, the vagina should be thoroughly washed with green soap and hot water and a copious antiseptic vaginal douche given; the bladder should be empty. The external genitals should likewise be thoroughly

If the ovum and its adnexa have been expelled and there is still a continuance of bleeding and the cervix is contracted, the administration of ergot is indicated; whether it is given in the form of fluid extract or one of the other preparations of ergot, such as ergotole or ergotiu, is a matter of personal choice; I have usually given the preference to Squibb's fluid extract if the patient did not object to the taste and if the stomach did not rebel against it. In patients in whom the uterus was not markedly enlarged and the cervix firmly contracted I have seen the most marked benefit from the administration of hydrochlorid of cotarnin (stypticin) in three-grain doses, given in capsules at intervals of three hours. The powder should be ordered to be put in a dry form into the capsules. Should the bleeding not cease from the administration of one of the remedies mentioned, curetting is indicated, with subsequent irrigation with a 1 per cent. carbolic acid solution. A similar procedure is indicated if the cervix is dilated under conditions above described.

Let us now consider the cases in which the embryo has been expelled, but in which the placenta is still in the uterus and the cervix contracted. In such instances, in the absence of fever, whether there is bleeding or not, we should treat the patient on the quasi-expectant plan and firmly tampon the vagina with iodoform gauze and administer ergot to bring about uterine contractions. I should not consider the necessity for more active intervention unless there was evidence of disintegration of the uterine contents. If the cervix is dilated, the uterus may be tamponed as previously described, or the placenta should be removed manually if it is not expelled spontaneously in twenty-four hours.

In that class of patients in whom the abortion is complete nothing at all should be done except to order rest in bed the same as after confinement. I believe the teaching that they should be curetted for the purpose of removing the decidua inadvisable.

It is obvious from what I have stated that I prefer to give the expectant plan of treatment the widest possible range, and I adhere strictly to it unless there are contraindications to it.

In instances of atypical bleeding, several weeks or months after a supposed complete abortion, one should not hesitate to examine the interior of the uterine cavity manually to ascertain whether the bleeding is caused by remnants of adherent placenta, a deciduoma or perhaps malignant growth, if a previous curetting and internal medication have been without effect. The cervix in such cases must be dilated to permit of the introduction of the examining finger. Usually steel dilators are made use of for this purpose, but some physicians prefer tents and still others use iodoform gauze. After having employed these several methods at different times for several years past, I have practiced dissection of the posterior cervical wall as the most satisfactory method of rendering the uterine cavity rapidly accessible to manual examination under the circumstances mentioned. It is quicker than any other method, and in my experience devoid of risk of subsequent infection, and it has otherwise no untoward consequences. The uterus is steadied with a double tenaculum forceps, one blade on each side of the median line; a scalpel, or a hysterotome, or a pair of scissors is used to split the posterior wall of the cervix, carrying the incision through the internal opening of the cervix, after which the uterine cavity will be found accessible to the average-sized index finger. By this method we have a smooth

and clean wound, and after examination it can be readily closed with a few interrupted chromicized catgut sutures. I have made a considerable number of intra-uterine examinations after having resorted to this procedure, and so far have never failed to get an absolutely satisfactory result.

Let us now consider those patients in whom there is evidence of infection. In such cases the uterus should be emptied as soon as possible, whether the cervix is dilated or contracted. If the latter is the case it should be dilated. I prefer for this purpose a branched steel dilator. An excellent instrument of this kind has been devised by my associate, Dr. A. Brothers. It gives an equal circumferential dilatation. It would be still better if the branches did not have so much spring. One should use a steel dilator with much discretion, in order not to tear the cervical structure. In a few instances I have used two rubber condoms, one inserted into the other so as to make it stronger, after the cervix had been sufficiently dilated to enable me to pass them through it. The end is firmly tied around the point of a Davidson's syringe, then the appliance is ballooned like a Barnes' bag dilator. This gives gradual dilatation without any risk of causing an abrasion. The only objection to this method of dilatation is that it is slower than the steel dilators. After there is sufficient dilatation the uterus should be cleaned out. If adherent particles are present they must be detached. If the entire cavity is not accessible, then a broad dull curette should be used. The uterus in these cases should be irrigated with three or four liters of a 1 per cent. carbolic acid or some other antiseptic solution. Intrauterine tamponade, in my opinion, is detrimental in all puerperal cases, because the drainage ascribed to it becomes illusory after the first few hours, and then it has a tendency to retard drainage instead of having the opposite effect, as is claimed for it.

If the abortion has taken place and one has reason to believe that there are only small remnants of adherent placenta retained, which give rise to the infection, and the cervix is not dilated, resort may be had to the curette without dilating to the extent spoken of; frequently no dilatation is required. A Martin curette or a strongly-built, broad irrigating curette answers best. I wish to repeat, however, that a curette should be used only when there is an absolute indication, and not on the slightest pretext, as has been done so frequently in the past and unfortunately is still being done. The curette has done much harm by causing deaths and prolonged illness, so that I can not lay too much stress on the objection to its injudicious use. The physician who employs it must be trained; it should never be used by any one inexperienced, especially in puerperal cases, because it is a dangerous instrument if improperly handled.

To go into details regarding the treatment of the septic infections following abortions would carry me too far. I will only allude to one other class, the most serious of all so far as life is concerned—sepsis in its severest forms following abortions, especially criminal abortions. Such cases tax the judgment of the most experienced to the utmost. Let me illustrate with only one example of the many patients that I have seen and operated on with varying results:

Patient.—M. S. was seen July 22, 1905, with Dr. George Doty. The patient was 20 years old and single.

History.—She had had a spontaneous abortion at about the second month of gestation, three days previously. When her physician first saw her the temperature was 99. When I saw her the temperature was 102.4 and pulse 90. There was

sensitiveness over the lower abdomen on pressure; the uterus was but slightly enlarged.

Treatment.—She was at once removed to a hospital, and the interior of the uterus explored with a curette because the cervix was too contracted for me to make a digital examination. A small quantity of retained material was removed. An extensive vaginal section was then made and the entire pelvis was packed with iodoform gauze, a procedure which I have found to be absolutely unsatisfactory in nearly every instance, despite the favorable reports emanating from other sources. (I presume this may be due to a difference in view as to what is a severe form of sepsis.)

Course of the Disease.—On the following morning her condition was much worse. On the afternoon of Sunday, July 23, the temperature had risen to 105 and the abdomen began to become somewhat distended. One severe chill and a rigor had occurred, and chilly sensations were constantly present. Although the coroner, who had been notified, had not yet put in an appearance, and in view of the fact that the patient's condition had been becoming worse from hour to hour, and from my previous experience I decided that to wait longer would be to lose time when there was still a chance to save life.

Operation.—At 5 o'clock, therefore, the patient was taken to the operating room and the abdomen opened from the umbilicus nearly down to the symphysis. Evidence of an acute septic peritonitis was present: the intestines throughout were inflamed and those of the pelvis were covered with lymph exudate. Some sero-purulent fluid was present in the lower abdomen. A pan-hysterectomy was done with removal of the adnexa, and the greater part of the broad ligaments was also extirpated. The abdomen was freely flushed with saline solution and the pelvis lightly tamponed with gauze, which was brought out into the vagina. On the following morning the temperature had dropped to 101 and the chilly sensations had entirely disappeared; the patient felt perfectly comfortable and was able to leave the hospital in excellent condition two weeks after her admission. From the third day on, however, she was out of bed.

Here we had evidently operated just in time; a day later, yes, perhaps only a few hours later, it would have been impossible to save life.

Such an example illustrates better than many pages of writing the difficulties one experiences in deciding what is the proper course to pursue with cases of severe sepsis following abortion. How often do we have patients whom we hope to save by less radical procedures until it is too late! If we operate early and the patient recovers, we rightfully ask ourselves whether the patient might not have recovered without such radical operation, or if she got well despite the operation? Such a query in the instance narrated, of course, can not be considered, because we had the objective proof in the intra-abdominal condition, and I have had similar proof in other cases, but, unfortunately, in the majority of such cases my patients have died, either because I operated too late or because the ailment had been too foudroyant from the beginning. Hence with patients having the severe forms of septic infection, patients with bacteremia from abortion or following labor at full term, we are placed in an unenviable position: we do not know by any definite landmark, if I may use that term, what decision we should come to to save life, so far as a major surgical intervention is concerned. Hence it is that from time to time we have varying opinions of a particular form of treatment. Examination of the blood for bacteria, which we hailed only a short time ago as the most important aid in helping us decide, has been found wanting in most of the instances that have come under my observation. The silver preparations of Cr  d   and antistreptococcus serum have been equally unsatisfactory in their therapeutic value in most of my severe cases. Once in a while, it is true, a patient recovers whom we

had reason to believe to be beyond recovery, but whether this is due to the alcoholic stimulation, which I believe should be generously employed in sepsis, or to one of the remedies used, or—and that seems more probable to me—to the inadequate amount of poison in the system of the patient and her strong vitality and ability to withstand that poison, is at present only a matter of speculation. In my opinion the future remedy will be a serum, which I hope may soon be discovered.

The guide which I have adopted for myself is best illustrated in the example cited. If a patient has no decomposing elements in the uterus to account for the infection, or even if she has, and there are reasons why they can not be satisfactorily removed, and if there is no exudate in the pelvis, so that the focus of infection seemingly is limited to the uterus, and such a patient is gradually becoming more ill, the offending organ should be removed ere it is too late. It may be possible that sometimes we may err in operating on a patient who might possibly have recovered without operation, but we can do no more than use our best judgment most conscientiously applied.

An exceedingly interesting feature from a pathologic viewpoint is that sometimes in the most virulent forms no evidence of micro-organisms in the uterus is reported by the pathologist. This, too, I may best illustrate by citing an example:

Patient.—A. B., aged 30, was seen in consultation July 18, 1905.

History.—She is the mother of four children, the last born eleven days previous to consultation. On the third day post-partum, her temperature was 102, pulse 84. Her physician then gave an intrauterine douche. Later chills occurred, and the patient also complained of pain in the right iliac fossa. The temperature varied from 103 to 105, the pulse from 110 to 120. The patient was delirious at times. The abdomen was not greatly distended, but it was sensitive to pressure. The uterus was much enlarged and relaxed in consistency. The diagnosis of puerperal sepsis, with probable diffuse septic peritonitis, was made.

Operation.—The physician in attendance and the relatives desired that an attempt be made to save life by operation, despite the fact that they were informed that such an attempt was almost useless. I finally consented with reluctance. The expected result occurred only sooner than was anticipated; the patient died on the table at the completion of the operation. Yet no micro-organisms were found. The diffuse septic peritonitis that was diagnosed was found to be present.

Examination of Organs.—Macroscopic Examination.—Uterus measures 9x7x6 cm. and has been laid open. Mucosa of canal necrotic looking. Ovaries normal size and fibrous, tubes normal.

Microscopic Examination.—Ovaries and tubes show chronic inflammation. Wall of uterus shows scattered groups of round cells. These small abscesses extend all through the uterine wall, but sections stained by Gram's method do not show any collections of cocci. Scattered here and there are occasional round bodies, which look like cocci. Mucosa appears to be replaced by necrotic tissue.

Diagnosis.—Acute metritis. Chronic salpingo-oophoritis.

I have several times received negative reports in such cases, so that I should be glad to be enlightened on this.

39 East Sixty-first Street.

A Definition of Urethral Stricture.—MacGowan defines stricture as a lessening of the normal caliber and interference with the dilatability of a urethral canal by round-celled infiltration, or deposit within its walls or in the corpus spongiosum of cicatricial connective tissue as a result of prolonged or chronic inflammation, or mechanical or chemical injury.—*American Journal of Urology.*

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XII.

ASTRINGTONS.

Astringents are substances which produce a constriction of all the solid tissues with which they are brought into intimate contact. All substances that are capable of forming precipitates of albumin and gelatin, which are insoluble in the body fluids, are capable of acting as astringents. Substances of this class have a peculiar action on mucous membranes, causing wrinkling of their surfaces and diminution of secretion; they precipitate not only proteids and gelatin, but also alkaloids and many glucosids.

The action of astringents, irritants and caustics is largely a matter of degree, the caustics acting as astringents when sufficiently diluted, while all astringents produce at least a transient and slight irritation, and when applied in concentrated form to mucous membranes many of those classed as mere astringents are capable of causing considerable irritation, which in the stomach may give rise to vomiting, and in the intestine to diarrhea. Some astringents are essentially mild in their action, while others, being nearly insoluble, can not be brought into intimate contact with the tissues in concentrated form; these can not produce more than a very mild and fleeting irritation, or stimulation, which is followed by lessened permeability of the capillary walls and diminished congestion.

By their irritant action, drugs of this particular class may increase a severe acute inflammation without being able to produce their typical astringent effect, hence they are not nearly so useful in such conditions as in chronic inflammations. The vegetable astringents owe their action mainly to the presence of tannins, substances belonging to an ill-defined group, possessing an astringent action as their best defined property. Other organic acids play only a minor rôle as astringents. The tannins give blue-black or greenish-black reactions with ferric salts; they precipitate proteids, (leather being the product formed with connective tissue), alkaloids, metals and some other substances; they yield pyrocatechin or pyrogallol on destructive distillation. Their therapeutic actions are independent of their chemical peculiarities, and they are severally indicated rather with reference to the presence or absence of extractive matter.

The combination of tannin with peptone is soluble in the gastric juice, and this and the insoluble albumin tannates are decomposed in the alkaline juice of the intestine, the tannin forming alkaline tannates which possess little or no astringent action. If the free tannins reach the intestine after the administration of extracts of the crude drugs, they act on the mucous membrane, lessening intestinal secretion; this greatly modifies the bacterial development, and therefore the general intestinal conditions. Some of the metallic albuminates are soluble in an excess of proteid, and when in such a case the liberated acid is corrosive, there is a penetrating corrosive action such as that of zinc or mercuric chloride. With an insoluble precipitate, such as lead albuminate, which forms an impervious coating, and a mildly astringent acid, like acetic, there is a typical astringent and non-irritant effect.

The same astringent substance may be used in a variety of conditions, and a number of different astringents are applicable to a given condition. A better acquaintance with the different tannins may lead to the selection of certain ones for particular cases, but at the present time we are guided more by the physical condition in which a given one is available; thus the official tannic acid is readily dissolved in the stomach, where it combines with the proteid of the content, or of the mucous membrane, whereas the tannin of gambir (gambir replaces the catechu of the Pharmacopœia of 1890) is protected by the presence of gum and extractives, and so passes into the intestine, there to exert its astringent effect. We can not attempt anything like a complete enumeration of the various uses of each of the astringents, but must

content ourselves with summarizing briefly the principal indications of astringents and some of the chief characteristics of the more common remedies of this type.

Uses of Astringents.

Astringents are used internally in the treatment of diarrhea and dysentery, in congestion of the mucous membrane of the stomach and intestines, and for hemorrhage in the alimentary canal and other directly accessible regions. The use of astringents—either organic or inorganic—for their effects on parts which can only be reached by way of the blood vessels is wholly irrational, and when benefit follows it is not due to the astringent action, since by their very nature astringents can not exist free in the blood in sufficient concentration to exert an astringent action. Traces of tannin are not astringent, any more than they are irritant, and astringents act only when brought into intimate contact with the tissue in sufficient concentration.

The metals are poisonous when absorbed, and, as a rule, vegetable astringents are to be preferred for internal administration, particularly when they must be used for a considerable period. Pure tannin, or tannic acid, as it is designated in the Pharmacopœia, may be used locally whenever a purely astringent action is indicated; for example, when secretion is excessive, and when it is desired to harden the skin in order to prevent excessive sweating.

The treatment of accessible, inflamed, mucous membranes with antiseptic solutions, and more particularly with solutions of hydrogen dioxide, has greatly lessened the use of astringents, and the cleansing of an infected surface should be a routine procedure even when an astringent is to be applied subsequently. Dry tannin insufflated against an elongated palate often affords instantaneous relief.

Tannin in the pure state is rarely used internally because of its irritant action on the stomach, one of the preparations of astringent drugs being preferred in such cases. The dry powder acts as a styptic when applied to bleeding surfaces, but it must be borne in mind that tannic acid and all other astringents when given by mouth exert their astringent action only on the alimentary canal.

The various proprietary remedies, composed of tannin and albumin, gelatin or aluminum, have not been shown to possess any decided therapeutic advantages over the official astringents, and several of the proprietary compounds, owing to their variable composition, must necessarily be uncertain in their uses and action.

Tannic acid in simple solution combines with the albuminous contents of the stomach, and with the mucous membrane itself if the stomach be empty, and the tannin in concentrated solution; it may then give rise to vomiting and even to diarrhea. This irritant action of the astringents leads to the use of several of them, alum, and zinc and copper sulphate, as emetics.

Tannin, being a precipitant of alkaloids, is useful as an antidote to those poisons when they are in the stomach—not when they have been given hypodermically, except possibly in the case of morphia which is excreted into the stomach. The tannates thus formed are slowly broken up, and the stomach must be evacuated by emetics, or, preferably, by the stomach pump, as promptly as possible, tannin being added to the water which is used to wash the stomach after evacuation. Tea and coffee contain tannin, and, since they are almost universally available in emergencies, their use is very common. Torald Sollmann¹ made some experiments to determine the efficiency of infusions of tea and coffee as precipitants for various alkaloids and metals, and found the infusion of tea much the more active, but neither of them very reliable for the commonly used alkaloids, while the only metals for which tea (infusion) would be useful are mercury, lead and silver. As a single dose of lead never gives rise to poisoning, and as poisoning with silver salts is extremely rare, we must conclude that poisoning with mercuric salts is practically the only instance likely to be encountered in which tea would prove to be an effective precipitant. The use of tea and coffee as stimulants in poisoning depends mainly on the caffeine, and, of course, these remarks as to their limitations do not apply to the stimulant use of them.

¹ Journal of Medical Research, vol. vii, No. 1, p. 43.

VEGETABLE ASTRINGENTS.

ACIDUM TANNICUM.—U. S.—This is a light yellowish amorphous powder of a characteristic odor and a strongly astringent taste; it is very soluble in water, alcohol or glycerin.

Average dose: 0.5 gm. (8 grains).

GLYCERITUM ACIDI TANNICI.—U. S.—A 20 per cent. solution of tannic acid in glycerin.

Average dose: 2 c.c. (30 minims).

TRICHISCI ACIDI TANNICI.—U. S.—Each troche contains 0.06 gm. (1 grain) of tannic acid with sugar and tragacanth, flavored with orange-flower water.

These troches are used almost exclusively in affections of the mouth and throat.

Gambir (catechu), kino, krameria and many other vegetable drugs contain large amounts of their peculiar tannins, together with mucilaginous and other extractive matter which tends to prevent the tannin from forming compounds in the stomach and thus preclude its action on the mucous membrane before it comes into the intestine, hence the preparations of these substances are more useful in the treatment of diarrhea than are pure tannin and its preparations.

GAMBIR.—U. S.—Gambir was introduced into the present Pharmacopeia to replace catechu of the earlier editions. It is an extract prepared from the leaves and twigs of *Ouroparia gambir* and occurs in irregular masses, varying in color from reddish brown to a pale brownish gray. It is odorless, but has a slightly bitter, very astringent taste, with a sweetish after-taste.

Average dose: 1 gm. (15 grains).

TINCTURA GAMBIR COMPOSITA.—U. S.—This represents 5 per cent. of gambir and 2.5 per cent. of Saigon cinnamon in diluted alcohol.

Average dose: 4 c.c. (1 fluidrachm).

TRICHISCI GAMBIR.—U. S.—Each troche contains 0.06 gm. (1 grain) of gambir with sugar and tragacanth, flavored with orange-flower water. These troches are well adapted for use in sore throat, after the throat has been sprayed with a solution of hydrogen dioxide, instead of the astringent gargles which were formerly so much in vogue.

KINO.—U. S.—The inspissated juice of *Pterocarpus marsupium* was introduced into medicine by Dr. John Fothergill about 1757. Like Gambir, it may be given as a powder, preferably combined with opium and aromatics, as in the compound powder of Kino N. F.

Average dose (of kino): 0.5 gm. (8 grains).

TINCTURA KINO.—U. S.—The strength of this preparation has been reduced to 5 per cent. to obviate its tendency to gelatinize.

Average dose: 4 c.c. (1 fluidrachm).

The following prescription, though somewhat complex, is a slightly modified form of one used in certain hospitals with satisfactory results; although the chalk is alkaline, it does not appreciably lessen the astringency of the mixture, as do the carbonates of the alkalis which exist in the intestine. The compound tincture of gambir, or the tincture of krameria, may be used instead of the tincture of kino.

| | | |
|---------------------------|---------|-----|
| R. Crète prepareate..... | 3i | 4 |
| Tinctura kino..... | 5iv | 15 |
| Tinctura opii..... | m. v | 5 |
| Spiritus chloroformi..... | m. lxxv | 3 |
| Aqua mentha piperite..... | 5x | 40 |
| Syrupi aurantii q. s..... | 3iii | 100 |

For children of from 3 to 10 years of age, from one-half to one teaspoonful of this mixture may be given every two or three hours; for adults the dose is one tablespoonful.

Another combination of chalk which has attained very great popularity in the treatment of diarrhea is the:

MISTURA CRETÆ.—U. S.—Chalk Mixture has the following composition:

| | | |
|--------------------------|--------|-----|
| R. Crète prepareate..... | gr. xc | 6 |
| Pulveris acacia..... | 5j | 4 |
| Pulveris sacchari..... | gr. cl | 10 |
| Aqua cinnamomi..... | 5x | 40 |
| Aque q. s. ad..... | 3iii | 100 |

Average dose: 15 c.c. (4 fluidrachms).

The mixture is so well known that it is mentioned merely as a reminder of one of our best and simplest remedies for diar-

rrhea. It is peculiarly adapted for combating the diarrhea of children. Severe cases may require the addition of a few drops of the deodorized tincture of opium to each adult dose, or a corresponding addition of paregoric (the camphorated tincture of opium) for children.

The vegetable drugs that contain tannin are so numerous, and their general therapeutic actions are so similar, that we shall merely enumerate the following well-known vegetable astringents and the available, official, preparations:

Rubus (blackberry-root bark)—fluidextract and syrup.

Red rose—fluidextract and syrup.

Geranium—fluidextract.

Hematoxylon—extract.

Rhus Glabra—fluidextract.

Gallie acid is sometimes recommended as an astringent, but it possesses no such action except that of any very weak acid, and it is absolutely useless for hemorrhage in the lungs, kidneys and other regions reached only by the circulation.

Though opium does not contain tannin, it would be a distinct omission if we failed to mention some of its indications in this place, since these articles are intended primarily to call attention to the possible therapeutic uses of the official substances, and since the arrangement into groups, such as astringents, is merely for convenience. Small doses of any of the opium preparations afford one of the surest means of relief in diarrhea. As they are commonly combined with astringents, inorganic as well as organic, with excellent results, despite the chemical incompatibility existing between the alkaloids and the various tannins or metallic salts. The preparations of opium have been mentioned in the earlier chapters, and we now merely wish to call attention to methods of combining these agents.

| | | |
|-----------------------------------|-------|-----|
| R. Tinctura gambir composite..... | 5i | 30 |
| Tinctura opii deodorata..... | m. x | 5 |
| Bismuthi subnitratiss..... | 5iiss | 10 |
| Aque camphore q. s..... | 3iii | 100 |

Sig.: One teaspoonful hourly for three or four hours, then every two, three or four hours.

Any one of the insoluble bismuth salts may be used, and tincture of kino or krameria substituted for the compound tincture of gambir. Similarly, an appropriate amount of the camphorated tincture of opium may be substituted for the deodorized tincture. When it is desired to give the same active ingredients in the form of a dry powder, the following may be used:

| | | |
|----------------------------|--------|----|
| R. Opii pulveris..... | gr. v | 3 |
| Bismuthi subnitratiss..... | gr. cl | 10 |

M. Ft. pulvis et div in Chart x.

Sig.: One powder to be given every two, three or four hours, according to the needs of the patient.

Here, again, the combination may be almost endlessly varied by using one of the other forms of insoluble bismuth salts, the deodorized opium, or by adding a small proportion of one of the vegetable astringents like kino or gambir.

The pill of lead and opium is well adapted for securing a very slowly soluble form for administering these drugs. The pill is useful in diarrhea, but must not be long continued, lest it give rise to lead poisoning.

| | | |
|-------------------------|--------|----|
| R. Plumbi acetatis..... | gr. ii | 1 |
| Opii pulveris..... | gr. i | 05 |

To be made into one pill.

Sig.: One pill to be given three or four times a day.

Inflammation of the stomach and intestine and also gastric ulcer may be treated by an insoluble astringent powder which not only relieves congestion by its astringent property, but also forms an insoluble protective covering, preventing the contact of irritating particles of food and the gastric and intestinal secretions, besides lessening the amount of these secretions.

(To be continued.)

Altruism in the Medical Profession.—Winfield S. Hall, Chicago, in the *Bulletin of the American Academy of Medicine*, says: Every profession, every occupation in life, affords its opportunities for altruism, but he who chooses the medical profession must do so with the knowledge that to be a useful and successful member of that profession he must subordinate self to the welfare of his fellow-men.

Clinical Notes

QUININ IN PNEUMONIA.*

A. L. GUSTETTER, M.D.

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NOGALES, ARIZ.

Following the cases of pneumonia reported in Dr. Galbraith's article in *THE JOURNAL* Feb. 10, 1906, I have had many other cases, in all of which I have treated the patients according to Dr. Galbraith's method, but with a very much better result.

Pneumonia is a very prevalent disease in Nogales and vicinity. My mortality in pneumonia cases was formerly nearly 80 per cent. So fatal had the disease become that all persons possessing enough of this world's goods to carry them to the sea level refused to remain here after becoming aware of the nature of their affliction. The results reported in the following cases, I am pleased to state, are the rule and not the exception. Thus far I have not had a death from pneumonia since I began the quinin treatment according to Dr. Galbraith's method.

CASE 1.—A male, aged 24, helper on railroad.

History.—On January 31 he was suddenly seized with severe pain on the right side of chest, violent and painful coughing and inability to take a full breath without seriously increasing the pain over the right chest.

Examination.—I saw him for the first time February 1, when I encountered the following conditions: At 3:30 p. m. his temperature was 102.6, pulse 100, respirations 32. Breath sounds over the upper lobe of the right lung were greatly exaggerated; over the middle and lower lobes they were very faintly heard; on deep inspiration broncho-vesicular breathing was heard.

Diagnosis.—Lobar pneumonia, involving the middle and lower lobes.

Treatment.—I gave 50 grains of quinin and one hour later (4:30 p. m.) I gave him 25 grains more. I then ordered 15 drops of the tincture of iron chlorid to be given every three hours, beginning at 5 p. m. At 6 p. m. his temperature was 102.8, pulse 108, respirations 30. At 7:45 p. m. his temperature was 100.6, pulse 112, respirations 26.

Course of Disease.—February 2, at 7:45 a. m., his temperature was 98.6, pulse 80, respirations 24. He made no complaints of ringing in the ears and felt well enough to sit up in bed. The pain in side had entirely disappeared. Expectoration during the night was blood-tinged. When I visited him in the evening his temperature, pulse and respirations were normal. As no symptoms remained the patient was discharged.

CASE 2.—F. H., male, aged 14, schoolboy.

History.—On February 4 the patient was taken with a severe chill, pain in the right side, coughing and distressed breathing. I was called to see him the following morning.

Examination.—At 9 a. m. his temperature was 103.4, pulse 120, respirations 32. I suspected pneumonia, but the physical signs were not positive. At 4:20 p. m. his temperature was 104, pulse 140, respirations 36. Breath sounds over lower and middle lobes of right lung were suppressed; subcrepitant râles were present.

Diagnosis.—Lobar pneumonia, involving the middle and lower lobes of right lung.

Treatment.—At this time (4:20 p. m.) I gave him 50 grains of quinin, followed by 25 grains one hour later. The nurse was then instructed to give him 15 drops of the tincture of iron chlorid every two hours.

Course of Disease.—At 7:55 p. m. his temperature was 104.4, pulse 132, respirations 40. At 9:15 p. m. his temperature was 103.6, pulse 136, respirations 38.

February 6, at 9 a. m., his temperature was 101.4, pulse 126, respirations 30. Tubular breathing was heard over anterior and posterior surfaces of lower and middle lobes of right lung, and

percussion elicited dullness of consolidation over the same area. He expectorated great quantities of bloody mucus. Pain in the right side had disappeared. I ordered 20 grains of quinin to be given at 10 a. m. and at 12 noon, to be followed by 12 grains every two hours. The iron was continued every three hours. At 12 a. m. his temperature was 101.8, pulse 120, respirations 28; at 6 p. m. his temperature was 102, pulse 114, respirations 28; at 8 p. m. his temperature was 101.2, pulse 110.

February 7, at 8:40 a. m., his temperature was 103.2, pulse 106, respirations 30. I gave him two pills of quinin, containing 20 grains each, at 9:30 and 11:30 a. m. He was then given one pill every two hours until he had taken six pills, or 120 grains of quinin, during the entire day. The quinin was given in pill form because of the nausea that was produced when he took it in solution. My experience with this and with another patient has decided me never to use quinin in any other manner than in solution. The pulse being of good quality, the 15 drops of iron were given every three hours. At 2:30 p. m. the boy's temperature was 103, pulse 108, respirations 30; at 6:30 p. m. his temperature was 101.6, pulse 104, respirations 28.

February 8, at 9:30 a. m., his temperature was 102.4, pulse 104, respirations 26. He felt very comfortable. Expectoration was bloody and physical signs of pneumonic consolidation were well marked on auscultation and percussion. Twelve grains of quinin were ordered given every two hours. At 12 noon his temperature was 102.2, pulse 102, respirations 28; at 5 p. m. the temperature was 101.2, pulse 86.

February 9, at 8:30 a. m., temperature was 101.2, pulse 84, respirations 25. The patient complained of deafness and said that he was blind. He was able to distinguish between light and darkness, but could not distinguish objects. I therefore stopped the quinin during the entire day. The iron was given as usual. At 2 p. m. the temperature was 102, pulse 84; at 5 p. m. the temperature was 102.6, pulse 80, respirations 28. The boy's sight was somewhat better. At 8 p. m. the temperature was 102.6, pulse 82, respirations 28.

February 10, at 9 a. m., the temperature was 103.6, pulse 92, respirations 24. The vision being normal, I gave him 50 grains of quinin at one dose and ordered 12 grains to be given every three hours. At 12 noon the temperature was 102.2, pulse 86, respirations 28. The iron was continued every three hours. At 5:30 p. m. the temperature was 101.6, pulse 84, respirations 20; at 8:30 p. m. the temperature was 102.6, pulse 90, respirations 30.

February 11, at 8:40 a. m., the temperature was 102.4, pulse 86, respirations 22; at 12:20 p. m. the temperature was 102, pulse 86, respirations 22. The boy felt very well; he had no deafness nor disturbance of sight. The administration of 12 grains of quinin was continued every three hours. At 5:30 p. m. the temperature was 100.2, pulse 82, respirations 24.

February 12 (sixth day after the first dose of quinin), at 9:30 a. m. the temperature was 98.4, pulse 72, respirations 20. The patient had slept well during the night. He had neither cough nor expectoration. Fifteen drops of iron were administered every four hours. At 6 p. m. the temperature was 99.2, pulse 74, respirations 20.

February 13, temperature was 97.4, pulse 78, and the patient was discharged.

Remarks.—Out of about thirty cases of pneumonia treated according to Dr. Galbraith's method this was the first case showing any symptoms of quinin poisoning, i. e., the profound deafness and the almost complete blindness. Fortunately, both of these symptoms passed off within ten or twelve hours, and now the boy can see as well as ever.

CASE 3.—Mexican girl, aged 13.

History.—On February 15 the patient had a chill lasting about twenty minutes and later began to feel feverish. At the same time she felt a severe and sharp pain in her right side. Nothing was done for her and I was summoned the next morning, when I found the following conditions:

Examination.—Temperature was 104, pulse 150, respirations 34. The pulse was very weak and almost imperceptible. On auscultation, subcrepitant râles were heard over the lower lobe of the right lung. Breathing was very labored. The patient preferred lying on the affected side and suffered great pain when she was turned on the left side.

* See Editorial on page 804.

Treatment.—I diagnosed this as a case of lobar pneumonia and gave the girl 50 grains of quinin and ordered 25 grains more to be given one hour later, making 75 grains of quinin in one hour. Ten drops of the tincture of iron chlorid were administered every two hours.

Course of the Disease.—At 6 p. m. the temperature was 98.6, pulse 96, respirations 24. The pulse was of very good quality. The pain had left her and the cough was less frequent. This patient never suffered from deafness.

February 17, at 9 a. m., the temperature was 98, pulse 84, respirations 20. The patient was free from cough and pain and was allowed to sit up in bed.

Remarks.—In reporting a case with so prompt and effective a cure, I know that many will think there must have been a mistake in the diagnosis, but I felt just as certain that I was dealing with a genuine case of pneumonia as though I had seen the case go through the whole train of symptoms.

CASE 4.—Mrs. C., aged 23.

History.—February 2, at 2 a. m., I was called to deliver a retained placenta, the woman having one hour previously given birth to a child that had been dead at least a month. I delivered the placenta without any difficulty and, the family having engaged the services of a midwife, I left after instructing them to call me in the event of fever or any other symptom arising.

February 3, at 9 p. m., I was called to see the patient, as she was suffering from a chill and cough. Her temperature was 102, pulse 140. The lochia was very scant, but of purely normal odor. I ordered a capsule containing acetanilid 3 gr. and citrated caffeine $\frac{1}{2}$ gr. to be given every two hours.

February 4, at 9 a. m., her temperature was 102, pulse 150, respirations 26. Cough was more persistent. She complained of severe pain over right lung. Her breasts, which had been tightly bandaged, were also painful. At 5 p. m. her temperature was 104, pulse 150, respirations 30. The pain on the right side was much worse and breathing was labored. Auscultation breath sounds were very harsh. Having satisfied myself by examining the vagina and uterus that there was no possibility of any infections or poisonous process going on in the uterus, I decided to wait a few hours before giving her the quinin treatment. At 9 p. m. her temperature was 104.8, pulse 165, respirations 36. On listening to the lower lobe of her right lung I now heard the subcrepitant râles very plainly, and the breath sounds over the rest of the lung were greatly exaggerated. The patient had great difficulty in breathing. I decided that it was a case of lobar pneumonia and not puerperal septicemia.

Treatment.—I gave her 50 grains of quinin and followed this in one hour with 25 grains more. Fifteen drops of tincture of iron chlorid were given every two hours.

Course of Disease.—On February 5 the temperature was 98.6, pulse 80, respirations 20. Pain had entirely disappeared. Several times during the night the patient expectorated bloody sputum; cough was not frequent. At 5 p. m. the temperature, pulse and respirations were normal. The patient felt fine, but remained in bed to complete the ten days following confinement.

Remarks.—This case was of great interest to me from the standpoint of differential diagnosis. Under the circumstances the promptness with which the symptoms were relieved was certainly gratifying to me.

QUININ IN PNEUMONIA.*

A. S. V. MANSFELDE, M.D.

ASHLAND, NEB.

Under the caption, "Quinin in Pneumonia," in THE JOURNAL, March 3, Dr. J. B. Cutter complains that Dr. W. J. Galbraith claims originality in the use of large doses of quinin, when Dr. A. J. Giesy pursued that course in 1894.

Permit me to direct attention to page 165, vol. v, Ziemsen's "Cyclopedia of the Practice of Medicine," published in 1875, a translation of Prof. Theodore Juergensen's classic article on "Croupous Pneumonia," the disease under consideration. There he says:

"When the fever is intense, 77 grains may be given to a strong adult and 15 grains to a child under 1 year, always in one dose. I have repeatedly used both of these amounts. I have acquired my experience by gradually increasing doses, and I have never seen any harm done; in fact, it is my firm belief that even these are not the extreme limits as to quantities."

Personally, I have used just this treatment for thirty years within my limited opportunities—and so much for priority. Dr. Galbraith, an old acquaintance of mine, certainly deserves great credit for bringing into prominence this old treatment of Juergensen's, which he uses exactly as I did, namely: with perfectly normal *prima via*, for the reduction of high temperatures and the resulting tone to the weakened heart muscle caused by the former. Incidentally, both used it, the former without and the latter (Galbraith) with a full knowledge of bacterial poisoning removed by the large doses of quinin. Nothing new under the sun, is there?

In this connection it may not be out of place to say that Dr. Galbraith's publication demonstrates that nihilism in the use of individual drugs simply means lack of knowledge of their proper uses, with the consequent reliance on proprietary mixtures, which only too often are void of substance and, consequently, of action. Again, is it not a pity that such masterly treatises as Ziemsen's Cyclopedia seem almost forgotten by the physician of to-day? What a wealth of experience he misses!

AN UNUSUAL CASE OF SPONTANEOUS DISLOCATION OF THE SHOULDER.*

JULIUS H. COMROE, A.M., M.D.

YORK, PA.

Patient.—Chas. M., white, aged 16, schoolboy.

Family History.—Entirely negative.

Previous History.—Other than the ordinary diseases of childhood, the patient has never suffered any serious illness. No history of traumatism can be elicited.

Present History.—Since early childhood the patient has at all times been able, by means of a certain series of manipulations, which consisted, for the most part, in raising and externally rotating the shoulder. "to throw both joints out of their sockets," producing, as a careful examination revealed, a complete subcoracoid dislocation. He had also learned easily to replace the bones by a reverse movement, and in neither case was there any pain produced. At times, while engaged in active gymnastic exercises, e.g., club swinging, basketball, etc., the luxation was voluntarily produced.

During the past three months, however, he began to suffer some inconvenience when the left shoulder was either voluntarily or involuntarily dislocated, and at the same time he noticed that there was some difficulty in replacing the bone on that side. This "inconvenience" gradually grew into a dull pain, which at times was quite aggravating, and the difficulty in reposition became proportionately more marked. For these reasons he was referred to me for diagnosis and treatment.

Physical Examination.—The boy was well nourished, of good athletic physique. The appearance of the shoulders is characteristic. They are broad and extremely flat, due largely to the underdeveloped deltoids and the resulting prominence of the acromion processes (Fig. 1). The humeri are rather preternaturally movable, abduction bringing the arms to an almost parallel vertical position. Neither bone nor joint crepitus could be elicited. By the manipulations above detailed there is at once produced all the characteristic objective signs of subcoracoid dislocation of both shoulders, with the exception of abduction of the arms (which is present in slight degree); the outer aspects of the deltoids are flattened; the acromion processes are very prominent (Fig. 2); the normal position of the tuberosities below the latter are now occupied by hollow spaces, into which the tips of the fingers can be easily slipped; the humeral heads can easily be palpated in the axilla, and in forced extension can even be seen.

I made a very careful fluoroscopic examination, which was

* See Editorial on page 804.

* Read before the York County (Pa.) Medical Society.

also seen by Dr. W. F. Bacon, chief surgeon of the York Hospital, and by Dr. L. M. Hartman. In the normal state there appeared to be no gross anatomic malformations in the bony structures of the joint, with the possible exception that the glenoid cavities were more shallow than those of several others which the author examined for comparison. The capsular ligaments, however, could be very distinctly outlined with a medium tube, and the left one was unmistakably larger than its fellow on the opposite side. The latter produced a homogeneous picture, whereas the former (the left) appeared much darker centrally, as though an obstructive fluid was present, probably an inflammatory exudate from the synovial membrane. This would easily account for the subjective symptoms on the left side (subacute synovitis, with exudate) and their absence on the other. The bones were voluntarily dislocated before the fluoroscope, and their course was seen to be downward, forward and upward, the head reposing immediately below the coracoid process, with the lesser tuberosity being anterior, showing, therefore, that external rotation had taken place. In this new state it appeared that the head of the bone was lying in an abnormally large pouch, as it were, which was the chronically enlarged capsular ligament. The bones were replaced in the exact reverse order.



Figure 1.

Treatment.—I advised encaising the left shoulder in a Velpeau fixation dressing and continuing treatment as in an acute traumatic luxation. This was advocated for the double purpose of "fixing" the joint and at the same time of producing absolute rest for the inflamed surfaces. For the right shoulder I advised massage, passive motion, and regulated, gentle gymnastics, to improve the muscular and ligamentary tone. I also recommended that in about six or eight weeks the proceeding that proved most beneficial should be further practiced on both sides.

I could find no other similar case of double dislocation, purely spontaneous, in medical or surgical literature.

According to DaCosta, spontaneous (pathologic or consecutive) luxations are usually present in a joint which has been disabled by some preceding or existing form of disease, e. g., chronic synovitis, tuberculous disease, rheumatoid arthritis, and at times in severe typhoid infections. In other words, it is neither traumatic nor congenital. When the *Typhoid bacillus* is responsible for the infection, the hip is the joint most frequently attacked (with luxation), and the most frequent type it

assumes is posteriorly on the dorsum of the ilium. The latter form is at times not recognizable until convalescence, and its reduction is often very obstinate. In Charcot's disease, spontaneous dislocations are rather common, the joints most frequently attacked being the knee and the hip, in the order named. In this latter pathologic condition, there is a more or less rapid destruction of all the joint constituents, with softening and marked relaxation of all the ligaments, thus permitting a greater range of motion and favoring dislocation.

The treatment in these pathologic luxations, when resolution does not set in, consists in the application of suitable apparatus or in resection as a final resort. I am of the opinion that these pathologic luxations should not be referred to as "spontaneous," and that the latter term should be restricted to those cases in which no congenital, traumatic or pathologic etiologic factor can be ascertained.



Figure 2.

HUMERUS.

Unilateral spontaneous luxations of the shoulder are not infrequent, due to the very shallow glenoid cavity and to the great mobility and exposure of the joint constituents. They are invariably anteriorly dislocated, since there are no powerful muscles to impede the course in this direction. The subcoracoid variety is the most frequent, as, to become a subglenoid dislocation, the powerful triceps tendon must be ruptured, and this is rarely accomplished, unless as a result of violent traumatism. In these cases of spontaneous dislocation of the shoulder there must be a movement of extreme abduction, which causes the acromion process to strike on the neck of the humerus, and thus to tilt the bone out of its socket, the acromion process acting as a fulcrum. The distal portion of the arm as a long lever, and the portion of the humerus between the tuberosities and the head as a short lever. It is, therefore, a disturbance of leverage, essentially, that produces a spontaneous dislocation.

SYMPTOMS.

The characteristic appearance of the patient, so well described in all text-books, is, in a large number of cases, pathognomonic of the condition. In addition, the head of the humerus is readily felt in the axilla, and when the arm is actively raised up it may even be seen as a globular prominence; the prominence of the shoulder is no longer the greater tuberosity of the bone, but rather the acromion process, since the head is pushed under the coracoid process, causing the absence of the characteristic roundness and the substitution of the "flattened" shoulder; the deltoid is naturally stretched down from the acromion to the middle of the shaft of the humerus externally, and this tends to throw the elbow out from the body. The elbow can not be brought to touch the body (Dugas' sign), since the head is wedged in between the acromion and coracoid processes.

TREATMENT.

If spontaneous reposition can not be accomplished, Kocher's method will prove successful in most cases. If not, one of the many modifications variously described will invariably suffice. In rare instances, however, this is found to be impossible, when excising or wiring (Beck) must be resorted to. At the same time the hygienic condition of the patient should be carefully regulated and the general health improved so as to reinforce the weakened joint. Two patients with persistent spontaneous unilateral dislocations of the shoulder were operated on by Ricard with success. His method is to expose the front of the joint by an incision between the deltoid and pectoralis major, and a second incision from the upper end of the first outward along the margin of the acromion. The inner portion of the capsule is now pinched into a transverse fold, and several vertical sutures placed so as to include the tendon of the subscapularis below and the thick capsule above.

A CASE OF DOUBLE UTERUS.

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PHILOMATH, ORE.

I wish to report a case of double uterus. I first saw the patient one year ago, when called to determine whether she was pregnant or not. She had been married five years without becoming pregnant, but had not menstruated for five months and now thought she felt motion. She called me in because the tumor seemed to be all on the left side.

On making a vaginal examination, I found the vagina divided by a septum, and at the upper end of each side of the vagina a cervix and uterine cavity. As the patient was certainly pregnant, I could not use a sound. She was pregnant on the left side. The finger passed naturally up the right side and was with difficulty passed on the left side. I asked her if she knew that she was different from other women and she said no, but on further questioning I found that both she and her husband knew of the condition, but did not know that it was different from other women. She miscarried one month later and sent for me, but, as I was away from home, she had no physician.

She miscarried again, at nearly four months, two weeks ago. I was called in four days afterward and found a retained and putrid placenta. She thought she had passed something from the right side two weeks previously, and stated that the fetus came from the left side. I removed the placenta and she is entirely recovered.

On examination I found that I could introduce one finger in each cervix at the same time. I examined the inside of the left uterus, digitally, and am convinced that there is no connection between the two cavities. There is now a rupture of the septum close to the uterus large enough to admit the tip of my finger, so that I could pass the finger up the right side of the vagina and feel the left os as well as the right. I think there is no doubt, from the conditions, that intercourse always took place on the right side, but that the right side is rudimentary, or infantile, and that conception could not take place on that side, and that it was very unlikely that the semen entered the left side.

At the first examination I found it difficult to introduce the finger into the left half of the vagina on account of the small opening, and I am reasonably certain that the male organ had never penetrated that side, although the left half of the vagina was roomy enough when once entered. At the second examination, I found the same condition, except that the opening was larger and that there was also a laceration of the upper portion of the septum. At this time the finger, passed straight in, would always enter the right side of the vagina, and my theory is that the right half of the uterus is rudimentary and that only after five years of married life the semen was accidentally introduced into the left half. The septum was probably torn when the miscarriage occurred, thus accounting for the second impregnation. I think the probability is that she will never carry a fetus to term, on account of the right side of the uterus not dilating or entering into the physiologic growth of the gravid uterus. This case corroborates the statement generally made that abortion frequently occurs in cases of uterine didelphys.

AN ISOLATED CASE OF FRIEDREICH'S ATAXIA.*

ARTHUR H. DODGE, M.D.
PHILADELPHIA.

The following case of Friedrich's ataxia presents nearly all the symptoms of the disease, according to the synopsis of Soca and Ladame, except the familial feature. Although this familial tendency is usual, cases in which direct inheritance can be traced are rarely observed. The cases of Gowers, Osler and Carre are instances. Isolated cases are far from rare and have been reported, showing nothing more of note than the sporadic occurrence.

Patient.—J. M., aged 24, single, white, male.

Family History.—Mother is living, aged 60. Father died as the result of an accident at the age of 55. Parents were not related, and no nervous disease of any nature is known in the family. The father was an alcoholic. Alcoholism in parents has been spoken of as an important etiologic factor; Friedrich in his first cases insisted on the causal relationship of alcoholism in parents to this disease. The case of Vizioli was unique in this particular. Our patient was the youngest of six children. Three brothers died in childhood, two the result of measles and one from a severe burn. A brother of thirty years and a sister of twenty-seven are living in good health and show no signs of a similar affection; and they are likely to be free from this disease according to the observation of Soca that the onset of the disease commences at the same age in members of the same family.

History.—The patient was admitted to the nervous wards of the Philadelphia Hospital, in Dr. Lloyd's service, May 13, 1905, stating that the onset of his trouble was noticed after an

* From the service of Dr. James Hendrie Lloyd in the Philadelphia Hospital.

attack of influenza at the age of seventeen. The first symptom was unsteadiness and uncertainty in walking. The gait progressively became worse, and his friends noted its resemblance to a drunken man's gait. The patient frequently had to take hold of surrounding objects to prevent falling. Unsteadiness of much less extent was noticed in the upper extremities at about the same time. Three years after the onset of the disease the patient ceased walking. At no time has the patient had any pain, and the function of the rectum and bladder has been normal, except on one or two occasions when he has noticed a delay in starting his urine. The patient denies all illnesses except the milder diseases of childhood; and evidence of syphilis is wanting. He admits a free use of alcohol after the onset of his disease.

Examination.—The patient is confined to a chair, but needs no help from anyone to get to and from his bed nor does he require help in dressing. The facial movements are well performed. The hair is plentiful, black in color but profusely streaked with grey hairs. The pupils are equal and react promptly in convergence. Direct and consensual light reflexes are prompt. The visual fields are not contracted, and the ocular movements are normal. There is nystagmus of prominence on lateral deviation of the eyes. Examination by Dr. Hansell, May 19, 1905, showed the eye grounds to be normal. There is nearly constant oscillation of the head, resembling the motions used to signify yes and no. This motion is increased in frequency and amplitude when the patient is watched; also while he is talking. Speech is slow, hesitating, jerky, thick and slightly slurred, but not truly scanning. The mentality of the patient is good and there seems to be no change according to the statement of his brother. The heart and lungs show nothing abnormal. The urine contains no abnormal constituents. Strength in the extremities is well preserved. The grip in the right hand is 42 and in the left 39 on the scale of the dynamometer. There is no atrophy. The limbs are not spastic. Muscle sense is intact. Sensation over the entire body is normal. No pains of any character. Bladder, rectal and sexual functions about normal. Ataxia is present in the hands and arms to a considerable degree, but the ataxia in the lower extremities is more marked. The patient walks with support, and in doing so places the feet widely apart, and the legs are thrown about in a helpless manner. While the patient is standing the head and trunk sway very much and the patient presents the attitude of a man very drunk. The closure of the eyes causes no increase in the swaying, but it is difficult to say whether the swaying could be increased. There is antero-posterior curvature of the spine in the cervico-dorsal region, but no scoliosis. The feet are shortened from before backward, and the arch is greatly increased. The toes are dorsally flexed, especially the great toe, and the extensor tendon of the great toe is prominent. There is not the flexion of the distal phalanx which is usual.

The knee jerks and Achilles jerks are absent. The biceps and triceps jerks are present and about normal on either side. The cremasteric and epigastric reflexes are present. The presence of the Babinski reflex in Friedrich's disease is not usually spoken of with any degree of clearness in either the text-books or reported cases. In this case the Babinski reflex is very prompt and active on either side. In some of the text-books the Babinski reflex is spoken of as constantly present in this affection. In two other cases now in the Philadelphia Hospital, in a brother and sister, the Babinski reflex is absent; but these cases have advanced into the paralytic stage of the disease.

Course.—Nov. 1, 1905.—The course of the disease has been progressively downward. The speech defect and the nystagmus are more pronounced. The ataxia is greater, especially more marked in the arms since admission, and the arm reflexes are lessened. The general health is not so good as on admission.

DISCUSSION BY DR. LLOYD.

The differential diagnosis of Friedrich's ataxia offers no special difficulty, unless it be with reference to multiple sclerosis. But in Friedrich's ataxia the onset of the disease with ataxia in the lower limbs, the abolition of the deep reflexes, especially the knee-jerks, the ab-

sence of spasticity in the muscles, the absence of optic atrophy (occasionally seen in multiple sclerosis), are all significant of Friedrich's disease. The so-called cerebellar hereditary ataxia of disease, in which there are increased tendon reflexes, paralysis of ocular muscles, with disorder of sight, is not thus far a distinctly differentiated disease and is so rare as hardly to lead to a confusion with the true Friedrich's ataxia. There is a type, however, of hereditary, or at least congenital, ataxia paraplegia which deserves mention. In this disorder there is ataxia with some spasticity and actively increased knee-jerks; also disorder of speech, such as stammering, jerky enunciation, with or without nystagmus, etc. This is sometimes found in children who have suffered injury at about the time of birth, and is thus in no sense either a familial or a hereditary affection.

New Instrument

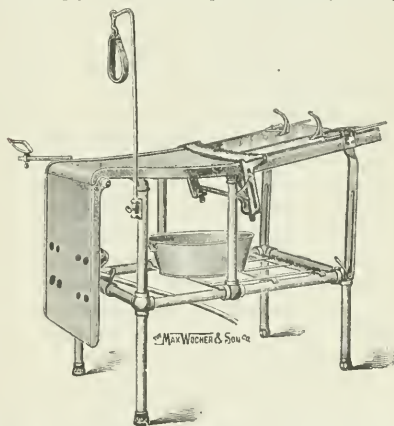
A NEW OPERATING TABLE.

REVISED AND IMPROVED.

J. F. BALDWIN, M.D.
COLUMBUS, OHIO.

About five years ago a description appeared in *THE JOURNAL* of a new operating table which I had devised after several years of study. Daily use of the table demonstrated, however, the existence of two or three weak points, which have finally been eliminated, and several new features have been added, and now the table seems to be about perfect.

The main points of the table, as first presented, and which are retained, are: 1. Simplicity of construction. 2. The field of operation not changing when the patient is put in the Trendelenburg position. 3. The position of the patient quickly



and easily changed by the anesthetist. 4. The patient maintained in the Trendelenburg position by shoulder straps, or (as I prefer) by tying the legs to the leg-piece.

The recent improvements add the following points: 5. The leg-extension-piece automatically drops to the proper angle when the patient is placed in the Trendelenburg position. 6. The bridge, by which the patient is arched forward as desired in kidney, gall-bladder or stomach work, maintains its position without catch of any kind and can be raised or lowered from either side. 7. The copper hot-water reservoir (electrically heated, if preferred), to keep the top of the table warm if desired for protracted operations on feeble patients.

The illustration shows the usual glass top, but I much prefer metal.

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SATURDAY, MARCH 17, 1906.

QUININ IN PNEUMONIA.

In the high and dry regions of Mexico and the southwestern part of our own country, pneumonia has long been dreaded by physicians because of its frightful mortality. It is to be hoped that the reports concerning the treatment of this disease by large doses of quinin, as advocated by Galbraith¹, may continue to be encouraging. We have no desire to throw cold water on this method of treatment. We shall gladly open our pages to careful reports along this line, and trust that the good reports from the southwest may be substantiated by experience in other parts of the country. Yet we wish to call attention to two or three facts that should be borne in mind.

In the first place, the use of large doses of quinin in pneumonia is not new. It has been given a thorough trial. It has not proved a specific in other hands. As Dr. Mansfeldt² says in his communication, Juergensen thirty years ago advocated its use in large doses (77 grains) giving this amount in one dose as an antipyretic—and often repeating this dose in 48 hours—but seeing also an improvement in the condition of the pulse, respiration and nervous state of the patient. Juergensen, however, made no claim that quinin was a specific, and his death rate was between 10 and 20 per cent.

Again, this same clinician uttered some truths concerning pneumonia that will bear repetition to-day. We quote from the same article in Ziemssen's *Cyclopedia*: "When we realize that we have to combat not an 'inflammation' but rather a constitutional disease, and one, moreover, of comparatively short duration, we readily fall into an expectant treatment which bides its time, interferes only when necessity requires, and does not see in the mere name of the disease an indication for attack." And in another place he says it is right to "do almost nothing for, say, 80 per cent. of the cases, and to employ the most active treatment for the other 20 per cent."³ The lessons of the self-limitation of acute infectious diseases is a hard one to learn. It is difficult to realize that from 60 to 80 per cent. of pneumonia patients will recover if let alone, and in selected cases where the extremes of life are excluded, as well as individuals who

are weakened by previous disease, the mortality is low. Petresco's⁴ results—a mortality of about 2 per cent.—from the use of enormous doses of digitalis, illustrate this, his patients being young soldiers in whom previously existing disease of heart, kidney, etc., had been excluded by rigid physical examination at the time of admission to the army. In private practice it is no uncommon thing for a busy physician to treat 40 to 50 consecutive cases of pneumonia by the so-called expectant or symptomatic plan, and to have no deaths. And another phenomenon of not infrequent occurrence is an apparent abortion of a pneumonia or an early crisis. Crisis on the third day of pneumonia while not common is by no means a remarkable rarity. These facts carefully considered should make one hesitate about ascribing the recovery or even the early recovery to the particular drug that has been given.

Before conclusions are drawn there should be no weak points in the diagnosis. Pleurisy, bronchopneumonia, bronchitis, influenza, malaria, etc., should all be carefully ruled out. Some of the cases reported are not, to judge from the records, conclusively pneumonia. To cite an example, Case 4, in the report by Dr. Gustetter in this issue, might well be pulmonary embolus following parturition. And in not a few other reported cases the diagnosis is not always above criticism.

While, therefore, we welcome any careful clinical observation that will help to a better understanding of the treatment of the all too prevalent and fatal pneumonia, we would call attention to the fact that the treatment by quinin is old and has once been discarded; that results to be convincing must be based on the observation of a considerable number of cases in which the diagnosis is indisputably correct; and that the fact must not be overlooked that the great majority of patients under the age of 50 or 60 will recover under any plan of treatment if it be not harmful.

BEDBUGS AND DISEASE POSSIBILITIES.

Though the bedbug has been known as an extremely unmanageable pest of humanity almost as long as history runs, very little has been ascertained with scientific definiteness regarding its habits and life history until recent years. Somehow the very thought of the insect and certain objectionable features that it is known to possess, such as its defensive as well as offensive odor, have deterred students from taking up the investigation of its life cycle, though its anatomy was very thoroughly studied over twenty-five years ago by Landois and others. In recent years the possibilities of the conveyance of diseases of various kinds by means of this insect parasite have been recognized and renewed interest has been aroused in everything that concerns it. For example, in smallpox epidemics, the spread of the disease through cheap lodging houses is more fre-

1. Galbraith: *THE JOURNAL A. M. A.*, Jan. 28, 1905, and Feb. 10, 1906. See also reports by Gustetter in this issue, p. 799, and by Catter, March 2, 1906, p. 671.

2. *THE JOURNAL A. M. A.*, March 17, 1906, p. 800.

3. Ziemssen's *Cyclopedia*, Translation, N. Y., 1875, p. 149.

4. Proceedings of XI International Congress in Rome.

quent than through any other means, and the houses in which bedbugs are found seem to furnish a steady supply of victims. This impression was renewed during the recent epidemic of smallpox throughout the United States and Canada. On at least one occasion tubercle bacilli have been found in the blood of the bedbug, and, as in this case a brother of the patient, who had occupied the same bed, had died from tuberculosis, and another brother suffered from a severe and rapidly running form of the same disease, there was more than a suspicion that this parasite was a distributing agent for the disease. There is a definite tradition in Russia frequently repeated by Professor Metchnikoff, in his lectures at the Pasteur Institute, that the bedbug forms an intermediate host or is at least an agent for conveying intermittent fever, so common in certain districts of that country. Its possibilities in the rôle of intermediary in cerebrospinal meningitis are still the subject of investigation.

In these circumstances all possible information with regard to the pest is interesting, and consequently a leaflet issued by the Department of Agriculture should attract attention. This pamphlet is written by Dr. Girault, who has carefully followed the life history of *cimex* or *clinocoris*, as the insect is variously called in scientific nomenclature, and has found important new material with regard to its feeding habits. The adult insect feeds about once in from thirty-six to forty-eight hours, taking nearly fifteen minutes to get its fill of blood. At earlier ages the feeding period is much shorter. Except in susceptible human beings who have a decided idiosyncrasy, no local effect at all is produced by the feeding process. Some individuals, however, suffer from almost intolerable itching and have a series of urticaria-like lesions. The parasite is so prevalent in certain parts of the country, however, that it is evident that those with an idiosyncrasy are comparatively rare. The insect may live from five to ten weeks or even longer without any food. This is especially true during the winter, when, if they have no food, they go into a sort of comatose condition. While each insect seems to live not longer than about 100 days at the outside, some have been known to exist as long as eight months; and it is these that enable the species to continue its existence even under unfavorable circumstances, so that they live from season to season in lumber camps, summer residences, empty apartments and the like.

Another interesting phase of investigation with regard to the bedbug and its connection with disease was carried on by Drs. Girault and Strauss as to whether or not the insect had other host relations besides those with the human race. As is easily understood, the host relations of this insect are greatly increased in importance because of their scope in the potential transmission of disease if they attack other animals than man. It has been found experimentally that at least mice, both living and dead, are attacked by bedbugs and that young mice particularly seem to provide an excellent

supply of food for them. This observation has been confirmed by observations made by Drs. Girault and Strauss, and, as it seems not unlikely that other small animals, including even rats, may also be hosts, the spread of such affections as pest, mouse septicemia and the like by means of this parasite must be taken into account. In a word, a new department of disease etiology seems to be opened up by these observations.

THE NATURE OF ECLAMPSIA.

Eclampsia has been designated the "disease of theories." Because of the large number of hypotheses advanced to explain this condition, we infer that none is adequate, and such, indeed, appears to be true. In early times eclampsia was looked on as a disorder of the nervous system manifesting itself by a proneness to convulsions due to a less stable equilibrium of the nervous centers during pregnancy. Lever identified eclampsia with uremia. Spiegelberg said that the occurrence of ammonium carbonate in the blood was responsible for the convulsions. The Traube-Rosenstein theory explained eclampsia as a result of edema and anemia of the brain. Bacterial infection has been held as the etiologic agent by many, especially by the French, and several organisms, isolated from cases of eclampsia, have been described. Perhaps an equal number of observers have obtained negative results in this respect, and this fact, together with the lack of uniformity in the positive findings, leave this theory unsupported by direct proof. Riviere's theory of autointoxication was, for a time, considered favorably by many. He claimed, and this was substantiated by others, that during pregnancy there occurred in the blood an accumulation of a toxic substance, while coincident with this the urine became less toxic. Later work by Vollhard, Stewart and others demonstrated the fallacy of these results. Others claim to have found substances such as leucomains and large amounts of globulin in the blood serum; these findings also lack confirmation.

The fetal origin of the possible causal toxic substance has been much discussed of late. The fact that lesions identical with those of the mother have been found in the fetus, together with the occurrence of convulsions in the child after birth, have been used as an argument in favor of this idea, but, as Williams states, the evidence does not indicate whether the toxins pass from the fetus to the mother or in the opposite direction.

The clinical manifestations and the morbid anatomy indicate that in all probability there is some toxic substance in the circulation which gives rise to the familiar degenerative changes found in the liver and kidneys and often in other organs. At least from what we know concerning the causation of such lesions as thromboses in the liver, necrotic changes in this and other organs, acute nephritis and the like, these changes are more rationally explained on this hypothesis than on any other. Wells¹ recently attempted to explain several conditions

1. THE JOURNAL, Feb. 3, 1906.

closely related in their morbid anatomy, namely, chloroform poisoning, acute yellow atrophy, phosphorus poisoning, septicemias and puerperal eclampsia, by assuming an inhibitory action of the toxic substances in these diseases on the synthetic processes, but not on the antolytic processes of the liver, thus producing the destructive changes seen in this organ. Up to the present, however, it must be admitted that the source, nature or even presence of such a toxic body in eclampsia rests largely on a hypothetical basis. Experimental evidence is almost totally lacking.

On this point Liepmann of Berlin² claims to have been successful in demonstrating the presence of a toxin in the placenta of eclamptics which is not present in the normal placenta. In order to show this, he dries the placenta and, after reducing it to a powder, injects a suspension of this in salt solution intraperitoneally into rabbits. The results indicate marked differences in the toxicity of eclamptic and normal placenta. This toxin, he says, is extremely labile, highly toxic for rabbits, is firmly bound to the albumin molecule, and it has not been possible thus far to isolate it by chemical means. The placenta appears to be its place of origin, and from here the poison is distributed throughout the body. Experimentally, he has shown that the toxic substance, like tetanus toxin, has a marked affinity for the brain substance and, by contact with this tissue in a test-tube for a time, the toxic property is destroyed or neutralized. Likewise the liver retains considerable quantities of this toxin, as shown by its increased toxicity for animals. The changes in the kidneys are explained purely as secondary results produced by the circulating poison.

This experimental work appears to bear out what has been suspected for a long time, namely, the presence of a toxin with more or less specific effects on the brain, liver and kidneys. The work, if confirmed, of course, marks an advance in that it definitely localizes the origin of the poison. How or why it originates, its character, whether leucomain, bacterial toxin, or what, is not discussed, these questions being in the field of pure speculation as yet.

Evidently the proper therapeutic means in these cases, reasoning from the above facts, would be immediate delivery, and, as it has been demonstrated that in general this method is more efficient in the treatment than the expectant method, this may be used as further support of the theory of the placental origin of the disease.

THE PURE FOOD BILL.

We reproduce on page 815 the Pure Food Bill as amended by the House Committee on Interstate and Foreign Commerce. While it takes considerable space, the measure is such an important one that, we believe, our readers will be glad to see it in its completeness. It

will be noticed that it is the Senate Bill, and not the Hepburn bill as introduced in the House some time ago. In the bill as it passed the Senate, provisions were made for foods, liquors and drugs, but as amended only two classes appear, foods and drugs, liquors being classed with foods. Drugs are so defined as to take in not only those in the Pharmacopeia and National Formulary, but also "any substance or mixture of substances intended to be used for the cure, mitigation or prevention of disease of either man or other animals." Mixtures require "a statement on the label of the quantity or proportion of any alcohol therein, or of any opium, cocaine or other poisonous substances." This provision, of course, only affects the dangerous preparations; the fraudulent and those which contain substances which are deleterious when used for a length of time are not affected. The provision to check the dangerous preparations, however, is a long step forward, and is probably all that could be had at the present time.

The clauses affecting liquors have been modified to pacify the blenders so that they can, with certain limitations, continue their nefarious practice of making imitation whiskey, and the opposition of the whiskey trust will not be so bitter as before.

The most dangerous amendment, on its face, seems the most laudable. It is that which provides for a board of experts to determine the standard of any preparation; that is, for instance, if a certain preparation contains preservatives, it would be the function of this board to determine whether or not such preservatives are dangerous. This committee is to consist of five specialists, a toxicologist, a physiologic chemist, a bacteriologist, a pathologist and a pharmacologist. The provision will be found in Section 9. It will be noticed that in the first part of this section the Secretary of Agriculture is given authority to call on the committee on food standards of the Association of Official Agricultural Chemists and the committee on standards of the Association of State Dairy and Food Departments "and such other experts as he may deem necessary." In that which follows to the end of the section comes the danger. It will be noticed that any manufacturer can demand that his product be referred to this special board of experts; that the decision of this board is final, and that there is no appeal to the courts or to the Secretary of Agriculture, and that the board is responsible to no one. Neither is any discretion left to the Secretary of Agriculture to add to or to change the committee.

We hope our readers will look at this carefully and, if they are at all interested, we trust they will write to their congressman in regard to this particular provision. There is no objection to such a board, provided it is to aid the Secretary of Agriculture in coming to a decision, the same as it provided when he calls for the aid of the other committees referred to above.

If this amendment is allowed to stand as it is, it very seriously weakens the bill. It lessens the responsibility

² Münch. med. Wochts., Nos. 15 and 51, 1905. Abstracts in THE JOURNAL, page 1888 of vol. XLIV. and 761 of current volume.

by placing it in the hands of several men; it gives a splendid chance for the manufacturer to bring influence to bear, for it is well known that the greater the number the less the responsibility on each individual and the more opportunity for influence. We believe, however, that this particular provision will be modified when the attention of the House is directed to its danger.

"THE PHARMACOPEIA FETISH AND OTHER THINGS."

In its issue for March 10, under the above caption, the *Medical Record* comments on the papers, and the discussion following, presented at a medical meeting in Boston last January. It sadly abuses Dr. Billings,¹ who read the principal paper, but it does not reprint for the benefit of its readers what Dr. Billings said, since it could quote scarcely a paragraph without affecting some of its advertising patrons. Dr. Billings' paper is referred to as being practically the same as the one read at Portland, whereas entirely different phases of the nostrum evil were discussed. As we printed the article last week, however, our readers can judge for themselves of the merits of the article. They can also see whether or not Dr. Billings advocated the limitation of the use of medicines to those in the Pharmacopeia.

One of those who took part in the discussion is highly praised, because "he drew a sharp line of distinction between quack medicines exploited in the lay press and the secret pharmaceutical preparations advertised only to the medical profession—a distinction which is persistently ignored, to the detriment of pharmaceutical reform, by THE JOURNAL of the American Medical Association and its Council on Pharmacy and Chemistry." We regret that this allegation—so far as it refers to us—is correct. It is too bad, but we are not able to draw "a sharp line of distinction" between "patent medicines" and "the secret pharmaceutical preparations advertised only to the medical profession." We certainly can not draw this line, unless the *Medical Record* admits "patent medicines" to its advertising pages, which, of course, must not be thought of for a minute. And yet, as we turn to the advertising pages, we find Scott's Emulsion, Antikamnia, Syrup of Figs, Pond's Extract, Hydrozone, etc. When a nostrum is advertised to the public, we usually designate it as a "patent medicine," but when it is advertised in "ethical" medical journals we call it a "proprietary." To which class do these preparations belong? Where and what is the "sharp line" here? Kutnow's Powder, Vin Mariani and Angier's Emulsion are advertised in the lay journals in England, but we can easily see the "sharp line" here—the Atlantic Ocean.

1. We quote a sample: "Dr. Billings seems, however, to be a rather recent student of the good book [the Pharmacopeia] for he expresses sorrow that acetanilid . . . was made official in the last . . . Pharmacopeia," apparently unaware that it has been official for ten years." What Dr. Billings said was that he was "sorry that acetanilid was made official in the last Pharmacopeia as *Pulvis Acetanilidii Compositus*." He certainly knows that acetanilid was official before as *acetanilid*; his regret echoes that of Jacobi, Solis-Cohen, and many others, that the Pharmacopeia has made acetanilid official in the form of a mixture as a substitute for the nostrums of the antikamnia class.

No, honestly, we can not see the "sharp line of distinction" not only as regards the method of advertising, but also as regards the general character of "secret proprietaries" and "patent medicines."

We are then given this unvarnished truth:

"If medical men will refuse to prescribe remedies the composition of which is unknown, the 'nostrum evil' will be at an end. But the physicians of this country are, as we have said before, not babies to be guided by a certain coterie of pharmacologists and therapeutic nihilists—a queer combination—whose slogan is, Back to the Pharmacopeia! and who seem to think that the way to reform the manufacturers of proprietary remedies is to class them with the makers of quack medicines."

This sounds very familiar, so much so that we are almost persuaded that it was written by a member of the Press Committee of the Proprietary Association of America. That committee tells us that if people did not want "patent medicines" they would not buy them, that the public is not made up of a pack of fools. And this all sounds so convincing, so absolutely unanswerable. But when this "argument" is used by the "patent medicine" men's press bureau the reply is made that the public is deceived and misled by the advertisements, and that the newspapers, the source of information for the people, are suborned by the "patent medicine" men and will not permit anything to appear against "patent medicines," and consequently the public is kept in crass ignorance of the actual facts and conditions. Is it possible that many medical men are also misled, because the medical journals, like the newspapers, are controlled by proprietary men? Banish the thought, at least so far as the *Medical Record* is concerned.

But, come to think of it, when the Council on Pharmacy and Chemistry showed that several of the preparations which the *Record* was carrying in its advertising pages were fraudulent, the *Record* did not inform its readers about it. And when, later, a letter containing the information was sent to the *Record*, it politely refused to publish the letter. The Commission on Anemia in Porto Rico, we are told, sent to the *Record*, for publication, a communication in which the commission gave proof that the vendor of Pepto Mangan had reprinted a part of its report, garbled in such a way as to make the ordinary reader believe that Pepto Mangan had proven satisfactory to the commission in the treatment of uncinariasis, whereas the report showed the opposite. Did the *Record* publish the communication? Not that we have seen.

Incidentally, it looks as though the *Medical Record* was not giving its readers the square deal.

One more quotation: "The *Medical Record* is heartily in favor of pharmaceutical reform, but it despairs of any progress so long as the cause is in the hands of the foolish and discordant Chicago missionaries." The word "discordant" is very good. We realize that this movement is discordant—it could not very well be otherwise.

But if the *Record* is really in favor of pharmaceutical reform, and does not like the methods that have been adopted by the American Medical Association, and which have been indorsed by medical societies all over the country, why does it not give definite reasons and suggest a better way? The *Medical Record* in favor of pharmaceutical reform? Is it possible so long as the greater part of its income is derived from such advertisements as Gray's Glycerine Tonic Comp., Pepto Mangan, Angier's Emulsion, Scott's Emulsion, Antikamnia, Kutnow's Powder, Seng, Phenalgin, Salacetin, Micajah's Medicated Uterine Wafers (a product of the Piso Consumption Cure people), Cactina Pillets, Chionia, Neurosine, Neurilla, Germileum, Bromidia, Dioburnna, Tongaline, Anasarcin, Pond's Extract, Sammetol, Echthol, Iodia, Papine, Eusoma, Echitone, Ammonol, Nutrolactis, Robert Hawley Goat Lymph Compound, etc.? If so, in what way would it suggest that reform be instituted? It acknowledges that something should be done. Will it suggest what? If the investigation of each proprietary article by men competent to do the work, the results of this investigation to be published later, is wrong, will the *Record* suggest why?

If it is ignorance on the part of the *Record* that impels it to confuse the real issue by intimating that the movement means limiting physicians to the use of those preparations which appear in the Pharmacopeia, we will enlighten it by saying that it is mistaken in its premises. If the movement means the limitation of the use of medicines to those which appear in the Pharmacopeia, it would be very foolish to spend money in the investigation of preparations that are not in that book and in the publishing of the book to be known as "New and Non-official Remedies."

We are very glad that the *Record* has spoken. We hope it will speak again. A free discussion of this nostrum question will do good. Let us have more of it. Publicity is what is wanted. Let us give the physician a square deal, however, by publishing all the facts.

ERA OF THE PHONOGRAPH.

In one of Mr. H. G. Wells' ingenious fancies he shows up a future condition of the world's progress—a very unpleasant one it must be said—in which books have had their day and literature is perpetuated by phonographs, or what are called the "babbling machines." While no one would wish to realize the future he portrays, it is easy to see how great an advantage to a certain limited class of unfortunates would be the application of this particular feature. This point is specially suggested by Dr. George M. Gould in a communication to *Science*, in which he shows how large a world it would open up to the blind were this plan adopted, especially with the more recent improvements made in the so-called telegraphone of Poulsson, which is said to be far superior to the modern phonographs and graphophones now in common use. The suggestion is still too recent to have been thoroughly carried out, but it will be strange if we

do not see some fruits of it in the adoption of such methods in the education of the blind in public institutions. The method necessarily has its limitations, and it may not entirely supplant, as he seems to think it will, the raised or embossed letter method used in books for the blind. But in any case it seems to indicate greatly enlarged possibilities of pleasure and profit for a deeply affected class.

THE BANQUET PERIL.

Several years ago THE JOURNAL had occasion to call attention to certain dangers incurred by banquet orators as specially illustrated by one or two notable instances. The dangers of public banquets do not appear to be entirely confined to those who have to undergo the cerebral congestion involved in after-dinner speeches. From time to time we hear of deaths occurring among those who took no prominent active intellectual part, and it is perhaps not too much to say that we are becoming somewhat accustomed to such casualties. In the city of Chicago alone one of the most prominent and public-spirited citizens succumbed not long since to the effects of an apoplectic attack incurred on such an occasion, and at a late Washington birthday banquet at one of the leading clubs two prominent citizens had to be carried out, one of whom has since died. There seems to be a sanitary question here involved that is worthy of consideration. While such serious casualties occur only among a very minute percentage of those actually present, there can be little doubt that the accompanying conditions have much to do with their production, and the question arises why they should occur at all. The participants in these banquets are men in the prime of life or past it and many of them are at a critical age or are suffering from arterial or cardiac disease and, therefore, in a physical condition favoring such accidents. They partake, however, of a hearty meal at a late and often unaccustomed hour under more or less exciting conditions, and often sit for hours in a more or less vitiated atmosphere, all of which are possible factors of sudden breakdown. In the social functions called "smokers," which have medical sanction in that medical men largely engage in them, it is easy to see how all these conditions may be aggravated. We must consider, also, that the glaringly evil effects are very probably not all that actually occur. There may be much suffering and perhaps some mortality that are really due to such occasions, though perhaps not properly credited and certainly not brought prominently before the public. The community suffers even by the loss of a very few valuable lives, and there is certainly in this matter an opportunity for medical consideration and prophylactic intervention in some way.

MODERN LONGEVITY.

According to William Curtis, the well-known newspaper correspondent, the actuaries of the large life insurance companies do not consider that the length of human life is increasing in the present conditions of our civilization. Admitting that there has been an improvement in the mortality of infants in the large centers of pop-

ulation this has not counterbalanced, in their opinion, the deteriorating influences acting on the vitality of those of riper years. Moreover, by the preservation of the weaklings in infancy the death rate in more advanced life has been increased, and this with the modern tendency to urban concentration and the intense strain of modern life has tended to decrease the average of longevity in spite of better sanitary conditions, the triumphs of medicine and surgery, the higher standards of living, and all the other conditions that might seem favorable to the prolongation of existence. While the death rate from diseases such as phthisis, and certain obviously preventable disorders like typhoid, has probably decreased, the increased mortality from heart troubles, kidney disorders, cancer and pneumonia, has more than made up the difference. It must be remembered, however, that the statistics of the large life insurance companies do not cover the whole population, but only a certain selected and provident class, and probably just that class that is most subjected to the high tension conditions of our modern civilization. It is not difficult to suppose that this class is perhaps of all others the least generally influenced by modern sanitary advances, and in making an estimate of the general average the figures it gives may be somewhat misleading, no matter how reliable they are for the special class they represent. The testimony of life insurance actuaries, however, can not be disregarded altogether as a warning against certain existing tendencies affecting the vitality of our population. Increasing luxury and speculation have much to account for what is ordinarily and superficially attributed, perhaps too exclusively, to the strenuous life. It is not hard work that kills so much as bad habits and neglect of ordinary hygienic living which no public sanitation can entirely counteract. That occupation itself is a life-saving factor is shown by the frequent rapid decline of health and early death in individuals who have retired from active business. Civilization saves the weaklings and interferes with natural selection and survival of the fittest, but it is not the struggle for life that is in itself most fatal. As a philosophic humorist has said with much truth, "Work is a snap. It is the intermissions that do up the nervous system."

A SERIOUS JOKE.

The newspapers last Sunday contained the announcement that Dr. Gregory, a member of the Legislature of Iowa, had introduced a bill authorizing the putting to death of incurables, idiots, etc. While we understand that the Doctor believes, to a certain extent, in the principles underlying the measure, he did not introduce it himself, but some other member did, more as a joke than anything else. The jokers had sent out their "story" in advance, and as a result Dr. Gregory has made himself famous. The bill was never considered seriously by the members of the Iowa Legislature and it was withdrawn, because, as our reporter remarks, its sponsors could not stand the severe criticism pouring in from all parts of the country.

Aortic Regurgitation in Childhood.—Dr. David Officer says that the cause of aortic regurgitation in children is nearly always vegetations resulting from endocarditis of rheumatic origin.—*Intercolonial Medical Journal of Australasia.*

Medical News

CALIFORNIA.

Tuberculosis Placarded.—The town of Selma has added tuberculosis to the list of diseases declared to be communicable and dangerous to the public health.

Expelled from Society.—Dr. John J. Gaynor, Eureka, was found guilty of unethical advertising and solicitation of obstetrical cases, February 13, and was expelled from the Humboldt County Medical Society by a vote of 14 to 1.

Election of Officers.—The Pomona Valley Medical Society, a branch of the Los Angeles County Medical Association, has elected Dr. Frank W. Thomas, Claremont, president; Dr. Clarence G. Toland, Pomona, secretary, and Dr. Frank Garelon, Pomona, counselor.

Dr. Baruch Only a Volunteer.—Dr. Simon Baruch notifies THE JOURNAL that he has not taken charge of the new bathhouse at Paso Robles, as he has neither the legal authorization nor the desire to practice medicine in California. His mission is simply that of a volunteer to organize a national health resort which will pay special attention to hydrotherapy and balneology.

Annals Action of State Board.—The Supreme Court has annulled the action of the State Board of Medical Examiners revoking the license of "Dr." Jessie C. Hewitt, Los Angeles, who advertised a cure for cancer. The court annulled the order of revocation on the ground that the medical law is vague, indefinite and uncertain.

Prohibits Distribution of Samples.—The board of trustees of Selma has passed an ordinance providing that any person who distributes samples of any patent or proprietary medicine in the town, by delivering samples or small quantities thereof to minors, or by leaving samples or quantities thereof on the streets or in the yards, or in and about any buildings of said town, or who advertises any medicine or drug of medicinal preparation, by leaving samples or small quantities thereof, where the same are likely to fall into the hands of or be picked up by any minors in said town, shall be guilty of a misdemeanor.

Personal.—Dr. Robert F. Rooney of Auburn is ill with pneumonia.—Dr. H. M. Cox has been reinstated as physician of San Luis Obispo County, vice Dr. Joseph S. Jackson.—Dr. Henry M. Fine, Oakland, has succeeded his father, Dr. Andrew Fine, as examiner for the United States pension bureau.—Dr. J. Myles Crenshaw, Redlands, has resigned as physician of San Bernardino County and his place has been filled by Dr. Paul S. Anderson, San Diego.—Dr. Eli A. Kusel has been made a member of the board of health of Oroville.—Dr. and Mrs. George M. Converse, San Francisco, will attend the International Medical Congress in Lisbon and spend several months in travel in Europe.

CONNECTICUT.

January Deaths.—During January 1,331 deaths occurred, 13 more than in December and 81 less than in January, 1905. The rate was equivalent to an annual mortality of 16.2 per 1,000. Pneumonia caused 200 deaths; diseases of the nervous system, 171; heart disease, 136; consumption, 105; accidents and violence, 179, and influenza, 41.

Infectious Diseases.—During January 562 cases of measles were reported in 62 towns; 157 cases of scarlet fever in 39 towns; 7 cases of cerebrospinal meningitis in 3 towns; 159 cases of diphtheria in 37 towns; 80 cases of whooping cough in 10 towns; 46 cases of typhoid fever in 21 towns, and 37 cases of consumption in 20 towns.

Election of Officers.—The New Haven County Medical Society has elected the following officers: President, Dr. Leonard W. Bacon, Jr.; vice-presidents, Dr. Henry W. Ring and Dr. Edward M. McCabe; secretary, Dr. Willis E. Hartshorn; treasurer, Dr. Robert E. Peck, and executive committee, Drs. Jay W. Seaver and Stephen J. Maher.

Personal.—Dr. Archibald McNeil, who has been bacteriologist of the New Haven board of health for several years, has resigned.—Dr. George S. Ford has been appointed fire department surgeon of Bridgeport, vice Dr. Elmer F. Blank.—Dr. C. Lincoln Banks has been chosen physician of the Bridgeport police department, vice Dr. J. Murray Johnson.

Illegal Practitioner Fined.—"Prof." G. Herman Lawson, Hartford, who is at present under charges for alleged violation of the medical practice act, was fined \$60.70 for drunkenness, breach of the peace and assault. He is held in \$200 bonds on the charge of practicing medicine without a license.—In the

case of the Hartford County Medical Society vs. M. F. Adleman for illegal practice of medicine, the defendant was adjudged guilty and was fined \$100.

Donations to Hospitals.—By the will of John Weed of New York \$50,000 is bequeathed to the Stamford Hospital, to found a branch hospital for the treatment of contagious diseases and to pay for the care and the treatment of the sick poor.—Mrs. Charles P. Taft of Cincinnati has given \$15,000 for the enlargement of the infirmary of the hospital of Yale University.—Mrs. Julia C. Griswold has given \$5,000 from the Griswold fund to endow a free bed at the Litchfield County Hospital.

ILLINOIS.

Measles and Mumps.—Argosa has an epidemic of measles, with 3 deaths.—Waukegan reports that 4 teachers and 175 school children are ill with mumps.

Eye and Ear Infirmary Staff Under Civil-Service Laws.—In an opinion rendered March 6, the attorney general holds that the medical staff, including internes, of the Illinois Charitable Eye and Ear Infirmary, Chicago, comes under the classified list. The civil-service commission was not clear on this point, as the medical staff receives no compensation.

Eye and Ear Men Meet.—A meeting of the Eastern Illinois Ophthalmological and Otological Society was held March 6 in Decatur, to complete organization, approve the by-laws and elect officers. The following officers were elected: President, Dr. James W. Sanders, Decatur; vice-president, Dr. Benjamin Gleeson, Danville, and secretary-treasurer, Dr. Charles P. Hoffmann, Danville. This society embraces the cities of Danville, Mattoon, Decatur, Champaign, Bloomington and Paxton, and has a membership of 21.

Fears Contamination of Water Supply.—On behalf of the State Board of Health, Dr. James A. Egan has filed objections to a further extension of Waukegan's sewer system emptying into Lake Michigan, unless the septic tank or other purifying method is employed. In a letter to the local board of health he states that the state board has for some time been investigating the contamination of lake water by city and factory sewerage on complaint of Lake Forest and other places to the south, whose water supply appears to have been contaminated. He characterizes Waukegan's plan to run more sewage into the lake as dangerous.

Chicago.

Hospital Will Build.—A building permit has been issued to the Chicago Union Hospital to erect a four-story brick building to cost \$35,000.

Deaths of the Week.—During the week ended March 10, 607 deaths were reported, equivalent to an annual death rate of 15.44 per 1,000. Pneumonia caused 93 deaths; consumption, 76; heart diseases, 46; nephritis, 45; violence including suicide, 44; and nervous diseases, 35.

Extortion Case Settled.—In the case of Dr. F. H. Steward and John Burns, charged with being parties to a confidence game whereby \$40 was obtained from Andrew Vick, the defendant Steward returned the amount which had been paid, and the case was dismissed, at the request of the plaintiff.

Scarlet Fever Threatening.—There is an alarming increase in scarlet fever, 124 cases being reported last week as compared with 113 for the previous week and only 21 during the corresponding week of 1905. Thus far this year 84 deaths from this disease have been reported as compared with 19 during the similar period of 1905.

Care of Epileptics.—Dr. William P. Sprattling, medical superintendent of the New York State Colony for Epileptics, Sonoma, delivered an address on the "Public Care of Epileptics" at a meeting held at the Chicago Woman's Club, March 14, under the auspices of the Children's Hospital Society, to advocate a movement for the establishment of a state colony for epileptics in Illinois.

MARYLAND.

Personal.—Dr. Charles M. Ellis, Elkton, president of the national bank there, and past president of the Medical and Chirurgical Faculty of Maryland, was operated on at Johns Hopkins Hospital for appendicitis by Dr. Halsted, March 8. He is doing well.

Hospital Needed for Colored Insane.—A bill has been introduced into the legislature, it is said, under the auspices of the state lunacy commission, to establish a state hospital for in-

sane colored persons, to be known as the Third Hospital for the Insane. The bill creates a board of directors to consist of the members of the board of public works and six others to be appointed by the governor. The sum of \$75,000 is appropriated for land and buildings and \$25,000 a year for support.

Vital Statistics.—Dr. William L. Lewis, Kensington, health officer for Montgomery County, reports 408 births and 304 deaths during 1905. Tuberculosis caused 52 deaths; pneumonia, 30; nephritis, 19; heart disease, 16; typhoid fever, 12; malignant disease, 12, and diphtheria, 2. He notes that tuberculosis was the cause of deaths in 25 per cent. of the colored decedents and of only 7.5 per cent. of the white decedents; nearly 38 per cent. of the total deaths among negroes was due to disease of the lungs.

Baltimore.

Health Report.—The mortality from consumption (38) ran ahead of that from pneumonia (34) last week; 5 deaths were credited to whooping cough, and 6 cases of smallpox were reported.

To Be Extradited.—Mrs. Emma Haslem, who jumped her bail of \$1,500 about three years ago, while charged with complicity in a criminal operation, has been arrested in Minneapolis and will be brought back under extradition papers. Dr. William B. Hawkins, who was tried for the same case, is now serving a ten years' sentence in the penitentiary.

Tuberculosis Fumigation.—The board of estimates has appropriated \$21,000 for fumigation against tuberculosis. It will be under the direction of the health commissioner. All houses from which tuberculous patients have been moved or where they have died will be treated before they can be occupied. It is estimated that there are 2,500 houses requiring such fumigation.

Personal.—Dr. John M. T. Finney has rented a cottage at Jamestown, R. I., for the summer.—Dr. Harry Friedenwald has been re-elected president of the Baltimore branch of the *Alliance Israelite Universelle*, and Dr. Joseph Blum has been elected a director.—Dr. Edward Lindon Mellus is now in Sicily.—Dr. Albert J. Vanderhill was installed as fire department surgeon, March 10, under Dr. Edward Geer, deceased.

The Harriet Lane Home for Invalid Children, founded by the late Harriet Lane Johnson, niece of President Buchanan, will be located on the Johns Hopkins Hospital grounds. The bequest amounts to several hundred thousand dollars. The home is for white children, with preference for boys and those living in Maryland, Pennsylvania and the District of Columbia. The home is to pay the cost of operating its buildings and the agreement is to run for twenty years.

MASSACHUSETTS.

Milk Dealers Fined.—Twenty-four milk dealers were recently fined in Boston for selling milk not up to the required standard. Samples had been collected since January 15.

District Nurses' Work.—The District Nursing Association of Boston employs 20 nurses, of whom 15 are district nurses on regular duty. They cared for 9,212 cases last year, making 68,755 visits. There are three undergraduate assistants and two nurses working in the public schools.

Not Influenza but Typhoid.—The board of health of Medway has been sharply rebuked by Dr. Charles Harrington, secretary of the State Board of Health, for permitting the concealment of typhoid fever. Thirteen cases in one boarding house were diagnosed and treated as influenza.

Dinner to Bowditch.—Dr. Henry P. Bowditch of Harvard University Medical School was tendered a dinner by the Bowditch Club at the Copley Square Hotel, March 6, at which about fifty members were present, and at which the guest of honor was presented with a solid silver loving cup by the club.

Publication of Health Bulletin.—An act has been introduced in the legislature providing that the State Board of Health shall publish every month, in two daily papers in Boston and two daily papers in each county, a report of the analyses made by the board during the preceding month of adulterated food, drugs and liquors, stating that name and nature of the adulterated article, the name of the manufacturer, and the number of prosecutions made or begun by the board under the provisions of sections 16 to 27 of chapter 75 of the revised laws.

New Trustees.—Mayor Fitzgerald of Boston has appointed on the new board of Fitzpatrick's Hospital trustees, who will direct the expenditure of the \$150,000 appropriated July 3, 1901: Edward F. McSweeney for five years; Miss Elizabeth

A. Power for four years; Dr. James J. Minot for four years; Miss Isabel Ilymans for three years; John E. Potts for three years; Dr. John F. O'Brien for two years; and Herbert F. Price for one year. A special law is before the legislature to permit this board to hire 100 beds in private institutions at \$5 per week until the new hospital can be constructed and fitted for use.

What Constitutes Practice of Medicine.—Vigorous efforts are being made to secure a more definite statement in the laws of Massachusetts as to what constitutes "practice of medicine" and hence render its practitioners amenable to the State Board of Registration. Opposition to any such regulation comes from followers of Eddyism, mind cure, hypnotism, massage and the like. District Attorney Moran failed to secure the passage of his bill looking to the regulation of abortionists, recently quoted in *THE JOURNAL*. The osteopaths are earnestly seeking the establishment of a separate board of registration for their school.

NEBRASKA.

Physician's Office Burned.—The office of Dr. Charles O. Petty, Beaver Crossing, was destroyed by fire January 24 with a loss of \$2,500.

Stricken with Apoplexy.—Dr. Benjamin F. Crummer, Omaha, former president of the Nebraska State Medical Society, was attacked with cerebral hemorrhage, March 12.

Methodist Hospital Assured.—The entire \$35,000 necessary to obtain the \$30,000 donation of Dr. August F. Jonas, Omaha, to the Methodist Hospital of that city, was completed March 1.

Awarded Damages.—Dr. Charles Rosewater, Omaha, on February 4, was awarded \$11,000 damages against the Illinois Central Railroad for injuries received by being run down by a train on that road Jan. 2, 1904. He brought suit for \$20,000, claiming permanent injuries.

Personal.—Dr. H. L. Wells, West Point, has been appointed physician of Cuming County. —Dr. Silas G. Allen, Clarkson, has been appointed coroner of Colfax County, vice Dr. Edward C. Jungbluth, Schuyler, deceased. —Dr. William R. Cornelius, Columbus, has been, for the third time, appointed physician of Platte County.

County Medical Society Election.—At the annual meeting of the Omaha-Douglas County Medical Society, Dr. Warren H. Stabaugh, South Omaha, was elected president; Dr. Richard C. Moore, Omaha, vice-president; Dr. Joseph M. Aikin, Omaha, secretary; Dr. Millard Langfield, Omaha, treasurer, and Dr. Andrew B. Somers, Omaha, member of the board of censors.

Faculty Changes.—The University of Nebraska, Medical Department, announces the following changes in the faculty: Dr. D. Francis Lee has been made professor of materia medica; Dr. Mattie Laughlin Arthur, instructor in obstetrics; Dr. Charles W. Pollard, adjunct professor of obstetrics, and Ernest Clifford Page, lecturer on medical jurisprudence. Drs. Ewing Brown and George B. Dandy have resigned.

Mortality Statistics.—The State Board of Health reports 5,470 deaths during 1905, of which the largest number, 724, occurred in October and the smallest number, 293, in August. Heart failure is charged with 532 deaths; tuberculosis with 362; cancer with 245; apoplexy with 200; nephritis with 165; paresis with 147, and typhoid fever with 109. During the year there were 76 suicides; 43 individuals were accidentally burned to death, the same number killed by firearms, and 35 persons were drowned.

NEW YORK.

Throat Disease Prevalent.—More than a thousand persons in Yonkers are suffering from a contagious disease of the throat, having symptoms somewhat similar to those of diphtheria. It is the opinion of the health officer that the affection is due to atmospheric conditions.

Want Local Health Commissioner.—Bills were introduced into the senate and assembly creating the office of health commissioner for the Boroughs of Brooklyn and Queens, thus taking from Commissioner Darlington control of the health department in those two boroughs. The bill has the indorsement of Dr. William F. Campbell, president of the Kings County Medical Society; Dr. J. W. Fleming and Dr. J. C. Hicks.

Ulster Water Supply Near.—A bill intended to compensate the people of Ulster County against any possible loss by reason of New York City going there for water and permitting of indirect damages to real-estate owners and also compelling New York City to rebuild more than half the system of Kingstons which will have to be torn up in laying New York pipes, will make it possible for both the city and the county to reach a final agreement.

Bills to Help Sick Poor.—The Assembly cities committee held hearings on March 6 on bills affecting the plans of the city for the relief of the sick poor. One was the Wadeweyer bill, which prohibits New York City from establishing a consumptive sanatorium on Staten Island. Robert W. Hebbard, commissioner of charities, spoke in behalf of the city, showing how necessary it was that the consumptives of the city should be adequately taken care of, and that local prejudice should not be allowed to interfere with this work. The hearing on the Tompkins bill authorizing New York City to establish a recreation colony for convalescents and sick persons on Long Beach developed the fact that the town of Hempstead was anxious to hold Long Beach for speculative purposes. Drs. J. W. Larnan of Bellevue and Allied Hospitals; S. S. Goldwater, superintendent of Mount Sinai Hospital, and others urge the humanitarian side of the question, and consequently the bill is to be amended to have the colony known as a recreation park under the jurisdiction of the park department.

New York City.

Harvey Society Lecture.—The thirteenth and last lecture for the year in the Harvey Society course will be delivered by Prof. W. H. Howell of Johns Hopkins University at the New York Academy of Medicine, March 17, at 8:30 p. m. Subject, "The Cause of the Heart Beat."

Personal.—Dr. Henry Russell was quite severely burned about the face and hands while trying to extinguish a fire in his office. He was taken to Roosevelt Hospital. —Dr. M. E. Lewis, interne of the first surgical division at Bellevue Hospital, is confined to his room and it is feared that he has contracted diphtheria.

Adulterated Milk.—The permit of a large dairy company was revoked by the board of health after the report of the chief sanitary inspector had been submitted. The milk was not tampered with in the country or at the stations, but at a large milk depot in this city, where chronic adulteration on a large scale was cleverly carried on.

After Doctors Who Do Not Report.—The health department is after Brooklyn physicians who do not report contagious diseases which they attend. The increase in the number of cases of measles in Brooklyn has shown that physicians are not diligent in reporting cases. It is stated that hereafter negligent physicians will have to make their explanations in court.

Special Lectures.—Dr. L. Duncan Bulkley will give four special lectures at the New York Skin and Cancer Hospital, Second Avenue and Nineteenth Street, March 21 and 28, and April 4 and 11, in the Out-patients' hall of the hospital at 4:15, on "The Principles and Application of Local Treatment of Diseases of the Skin." These lectures are free to members of the medical profession.

Can Not Stop Steam Whistles.—In regard to the complaints of residents of Riverside Drive against the blowing of whistles in the harbor and the request that additions be made to the sanitary code to allow prosecution of the offenders, the health board has decided that the present code covers the question as fully as the city can regulate it and that any further action will have to be taken by the federal government.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended March 3, 1,903 cases of measles, with 45 deaths; 475 cases of tuberculosis, with 225 deaths; 405 cases of diphtheria, with 61 deaths; 222 cases of scarlet fever, with 5 deaths; 37 cases of typhoid fever, with 7 deaths; 29 cases of cerebrospinal meningitis, with 21 deaths, and 180 cases of variella, making in all 3,251 cases, with 364 deaths.

New Metropolitan Hospital.—At the annual meeting of the Metropolitan Hospital and Dispensary board, March 8, it was decided to purchase a site for a new building at once. The following gave \$500 each: L. Leipsziger, R. F. Rudell, L. Gottlieb, C. Helborn, M. Featherston, S. Weiner, L. D'Annello, G. A. Semel and H. G. Ramsperger and S. Ulfelder, and in all \$5,000 was subscribed. The building committee was authorized to sell the present hospital site and the woman's auxiliary was requested to obtain the necessary furnishings for the new hospital.

Raid on Spitters.—It is said that for the past three months from eight to ten arrests have been made each day for spitting, but little attention was paid to the matter, so the health department decided to call the attention of the public to this class of offenders by arresting men in the theater district. On the evening of March 8, nine arrests were made in the lobbies of theaters and the offenders held in \$500 bail for appearance in court. Only a few were fined, as it was held that the theater lobbies were public places within the meaning of the sanitary code and that cuspidors should have been provided.

Nurses and Hospitals Criticised.—At the meeting of the alumni of Bellevue Hospital Medical College at the Yale Club, Dr. W. Gilman Thompson was especially severe on the nurses, stating that the profession was in the hands of a "nurses' trust." Other speakers on this occasion pointed out the desirability of establishing hospitals at convenient points throughout the city which could be reached readily in case of necessity. Dr. Russell Bellamy made a plea for cheaper hospital construction. Hospitals should be built like barracks, as a distinguished English physician had said, and should be burned down once in every five years and then built over again.

Warned Against Malpractice.—The postal authorities some time ago decided to start a campaign against persons guilty of malpractice in this city who advertise and use the mails for this purpose. Postoffice Inspector Snow of Boston, who recently conducted a similar campaign with success, was ordered to come to New York to take charge. He found in several papers advertisements of a character that left no doubt as to the advertiser's intent. The County Medical Society's detectives furnished, in some instances, practically legal proof. More than fifty of the best known of the advertisers were asked to call at the Federal Building and see Inspector Snow. The majority of the callers were women; all were warned, and not a few will leave the city. Some arrests may be made.

Measles and Diphtheria.—Dr. Darlington, the health commissioner of this city, has appealed to the people of New York, asking that every precaution be taken to prevent the spread of measles and diphtheria, since both diseases have been increasing rapidly in all sections of the city. In January and February there were 616 more cases and 77 more deaths from diphtheria than during the same period of last year. The record of March, 1904, when 7,000 cases were reported, will be broken unless the epidemic is curbed. In February, 6,310 cases of measles were reported, and during the first week in March, 1,899 more. Dr. Darlington has advised a generous use of antitoxin even before the examining physician has reached a decision. The report of the health department, covering a period of thirteen weeks, shows that Ellis Island is one of the most fertile spots for the breeding of disease in the city. There were 168 cases of measles taken from the island in the period above mentioned.

OHIO.

Physician Fined.—Dr. Alexander Grytza, Toledo, was fined \$50 and costs, February 24, for practicing without a license.

Byron Stanton's Semi-Centennial.—Twenty professional friends and associates of Dr. Byron Stanton, Cincinnati, celebrated the fiftieth anniversary of his entrance into the medical profession, February 23, with a banquet, at which a loving cup was presented to Dr. Stanton by Dr. N. Pendleton Dandridge on behalf of those present.

Want Hospital Instead of Library.—Twenty-one hundred of the citizens of Mansfield have signed petitions requesting that the Carnegie Library building, now in course of erection, be made into a city hospital and that the \$10,000 already advanced by Mr. Carnegie be returned to him unless he is willing to have the building used as a hospital.

Fires.—Two fires have recently occurred in the Branch Hospital, Cincinnati.—A fire from a defective grate in the apartments of the superintendent of Longview State Hospital in Cincinnati caused a loss of \$1,000.—The office of Dr. Minor M. Jacobs, Hamilton, was destroyed by fire February 14, with a loss of about \$1,400, partially covered by insurance.

Academy Meeting.—At the regular meeting of the Cincinnati Academy of Medicine, March 5, the following officers were elected for the ensuing year: President, Dr. John E. Greiwe; vice-presidents, Drs. Henry W. Bettman and Ellen McCarthy; secretary, Dr. Stephen E. Cone; treasurer, Dr. Alexander G. Drury; trustees, Drs. N. Pendleton Dandridge, J. F. Hesse and Asa B. Isham; and censors, Drs. Edwin W. Mitchell, E. Gustav Zinke and David I. Wolfstein.

Appointments by the Board of Public Service, Cincinnati.—Physician to the workhouse, Dr. J. A. Flanagan, vice Dr. Otto P. Geier, salary \$100 per month; physician to House of Refuge, Dr. Moses Sulzer, vice Dr. F. A. Kautz, salary \$37.50 per month; physician to City Infirmary, Dr. J. M. Adams, \$112.50 per month; medical superintendent of the Branch Hospital for Consumptives, at \$100 per month, and contagious disease expert to the health department at \$75 per month, succeeding Dr. B. F. Lyle, Dr. Albert Fallner.

Tuberculosis Hospital Has Waiting List.—The Cincinnati Branch Hospital has become so popular among the tuberculous poor of the city that accommodations can not be supplied for all applicants and quite a large waiting list has arisen. For

the most part, those waiting are being treated at their homes, but, unfortunately, not a few have to be kept in the main building of the hospital. The failure of the board of public service to provide accommodations for the tuberculous poor, if necessary, by means of tents, is defeating the purpose for which the branch was built, the separation of the consumptives from those afflicted with other diseases, in this way preventing the spread of the disease.

Condemns Drink Cure.—The Montgomery County Medical Society, at its meeting March 2, expressed its disapproval of the exploitation by the lay press of the Oppenheimer method, which is claimed to cure drunkenness. The censors in their report noted that the exploitation of this so-called cure provided for a committee of prominent citizens which did not contain the name of a single member of the medical profession, but was made up of eight clergymen and nine other gentlemen, who presumably were not qualified to pass on the correctness or incorrectness of the claims made by the proprietors of this alleged cure. The censors advise the society to place the stamp of disapproval on this attempt of mercantile medicine to obtain a standing in the community under the cloak of charity.

Personal.—Dr. Alonzo B. Walker, Canton, has been elected president of the Union Medical Association of the sixth councilor district.—Dr. Wm. A. Dickey, Toledo, was struck by a car, February 25, and rendered unconscious.—Dr. Milton V. Cunningham has been appointed city physician of Youngstown, vice John J. Thomas.—Dr. Charles S. Hamilton has succeeded Dr. Starling Loving as dean of Starling Medical College, Columbus.—Dr. J. Hollis Ward, Vinton, is seriously ill with pneumonia at the home of his parents in Columbus.—Dr. Martin Stamm, Fremont, has been elected president of the Sandusky Medical Society, vice Dr. Robert H. Rice, Fremont, deceased.—Dr. Edward Reinert, Columbus, was operated on for appendicitis, February 28.—Dr. Charles A. Cooperider, Columbus, was made seriously ill by an overdose of a drug taken to relieve pain, March 4.—Dr. Charles M. Showman, North Baltimore, is seriously ill with appendicitis.

Celebrate Twenty-fifth Anniversary.—The following ten Cincinnati physicians celebrated the twenty-fifth anniversary of their graduation in Medicine, February 28: Dr. F. W. Langdon, neurologist, Miami Medical College, Cincinnati Hospital and Cincinnati Sanitarium; Dr. Frank W. Harmon, superintendent Longview Insane Asylum; Dr. Allen B. Thrasher, laryngologist, trustee of the Cincinnati Hospital; Dr. John L. Davis, medical director Union Central Life Insurance Company; Dr. Edward S. McKee, gynecologic department of the Medical College of Ohio for twenty-three years; Dr. George A. Fackler, of the staff of Cincinnati Hospital; Dr. Benjamin F. Clark, surgeon of the Big Four Railway and Cincinnati fire department; Dr. David DeBeck, ophthalmologist, Medical College of Ohio and Good Samaritan and St. Mary's hospitals; Dr. John H. Blau, practitioner of Covington, Ky.; Dr. N. Irwin Scott, practitioner of Norwood, and Dr. Adolph Grimm, practitioner of Cincinnati, and for many years in the laryngological department of the Medical College of Ohio.

PENNSYLVANIA.

Philadelphia.

Announcement.—The annual meeting of the American Society of Tropical Medicine will be held in Philadelphia, March 21.

Bequest.—By the terms of the will of the late Rev. Benjamin H. Sanderlin, the Methodist Hospital will receive \$5,000 for the endowment of a free bed to be known as "the Memorial Methodist Episcopal Church bed, donated by the Rev. Benjamin H. Sanderlin and wife."

Non-Suit Accepted.—After a partial trial in Common Pleas Court No. 1, March 9, the action brought by Emil Krueger against Dr. H. Augustus Wilson to recover \$10,000 damages for injuries in an automobile accident, was ended by counsel for the plaintiff suffering a voluntary non-suit.

Hospital Reports.—During February the Methodist Hospital admitted 92 patients and treated 454 new patients in the various outdoor departments.—The Polyclinic Hospital admitted 103 patients to the wards and treated 1,598 new patients in the dispensaries. In all 7,791 visits were made to the out-patient departments.

Personal.—Dr. and Mrs. J. Norman Risley are in England.—Dr. and Mrs. Boardman Reed have returned from Europe and are now in California.—Dr. William G. Niles, resident physician in the Presbyterian Hospital, is seriously ill.—Dr. James Anderson is confined to his house with influenza.—Dr. Hiram Langrehr was thrown from his bicycle, March 6, and severely injured.

Discussion on Quackery.—On March 19 the Philadelphia Medical Jurisprudence Society will discuss, "Quackery: What Are We Going to Do About It?" Hon. Champe S. Andrews, counsel of the New York County Medical Society, will deliver the opening address, and Philadelphia physicians hope that this meeting may mark the start of a movement against the horde of quacks now preying on the Philadelphia public that will equal the success of that against those of other culprits, the abortionists.

Work of Visiting Nurses.—At the annual meeting of the Visiting Nurses' Society it was reported that the number of new cases visited aggregated 2,311, and the number of old cases visited was 121, making the total number of cases visited 2,432. The number of visits paid was 38,282. The school nurses' report is as follows: The number of schools assigned, 6; number of treatments given to old cases, 6,692; number of new cases, 1,708; number of children attended at home, 476; number of visits to homes, 843. Mrs. Henry C. Lea was elected president.

Lectures and Addresses.—Dr. John B. Deaver addressed the Stillé Medical Society of the University, March 2, on "The Relation of the Physician to Modern Surgery."—Dr. Edward C. Spitzka, New York City, delivered a free public lecture on "The Brain" at the rooms of the American Philosophical Society, March 16.—Dr. M. P. Ravenel of the state veterinary board addressed the Pennsylvania State Veterinary Medical Association on "Hydrophobia" at the annual meeting in this city, March 6.—Dr. Ward Brinton, secretary of the Pennsylvania Society for the Prevention of Tuberculosis, delivered a lecture on "Consumption," March 8, at St. Ambrose's Protestant Episcopal Mission.

Health Report.—The total number of deaths reported for last week numbered 633. This is a decrease of 37 from those reported the week before, and an increase of 34 over the number reported in the corresponding period of last year. The principal causes of death were: Typhoid fever, 35; measles, 12; diphtheria, 10; consumption, 76; cancer, 13; apoplexy, 15; heart disease, 45; acute respiratory disease, 122; gastritis, 8; enteritis, 36; Bright's disease, 48; premature birth, 19; accidents, 29; marasmus, 2. There were 357 cases of contagious disease reported, with 52 deaths, as compared with 469 cases and 56 deaths in the previous week. There was a marked decrease in the cases of typhoid fever reported during the week, the number being 231 as compared with 352 reported in the previous week. The situation concerning typhoid in relation to its distribution is the same as it has been during the past six months, the bulk of the new cases being reported from wards comprising the northeastern section of the city, which receives the water supply by direct pumpage from the Delaware River. Measles is still prevalent, the number of cases this week reaching 630, or 6 more than those reported last week. Notwithstanding the large number of cases the death rate is comparatively small, 12 deaths being reported from this disease during the week.

TENNESSEE.

Attempt at Suicide.—Dr. Edward P. Gould, Chattanooga, formerly of Royal Center, while temporarily deranged from overwork, attempted suicide January 9 by cutting his throat. Fortunately, aid came in time and he has recovered.

Found Guilty of Murder.—Dr. Y. Safford Troyer, Memphis, charged with murder in the second degree on account of criminal malpractice, was found guilty February 10 and sentenced to imprisonment for ten years in the penitentiary.

Ground Broken for New College.—On March 1 the ground for the new Memphis College of Physicians and Surgeons was formally broken in the presence of the faculty and students by Dr. Maximilian Goltman. The building will cost about \$60,000 and will be ready by September 1.

New Hospitals.—Lincoln Memorial Hospital, Knoxville, erected by the Tennessee Medical College at a cost of \$40,000, was opened February 12. In addition to four large wards it has two private wards, an obstetrical ward, an operating pavilion, nurses' ward, etc.—Dr. William J. Matthews has opened a private hospital in Johnson City.

Society Meetings. The Rutherford County Medical Society held its annual meeting in Murfreesboro, Dec. 6, 1905. The following officers were elected: Dr. James B. Murfree, Sr., Murfreesboro, president; Dr. James J. Rucker, Averall, vice-president; Dr. Rufus Pitts, Murfreesboro, secretary and treasurer; Dr. Enoch H. Jones, Murfreesboro, censor; Dr. V. K. Earllman, Murfreesboro, delegate to the state association, and Dr. Harry C. Rees, Murfreesboro, alternate.—The Union City Academy of Medicine was organized at that place Janu-

ary 26. Dr. D. M. Pierce was elected president; Dr. J. M. Rippy, vice-president, and Dr. Marion A. Blanton, secretary.—Greene County Medical Society has elected the following officers for the ensuing year: President, Dr. H. H. Ruble, Greeneville; secretary, Dr. S. Walter Woodward, Greeneville. The society is in prosperous condition and includes in its membership the majority of the eligible physicians in the county.

Personal.—Dr. Marcus Haase, Memphis, formerly secretary of the local health board, who resigned in order to pursue his studies in Johns Hopkins and in Berlin, was given \$1,200 by a number of his friends, January 14.—Dr. John C. Bell has been appointed chief sanitary inspector of the Memphis board of health, vice Dr. James L. Andrews, promoted to secretary of that board.—Dr. W. Frank Glenn has been elected president of the board of health of Nashville.—Dr. George P. Edwards, Nashville, has sufficiently recovered from his recent operation to be removed to his home.—Dr. and Mrs. E. R. Hochstetter, Ridgedale, are spending the winter in California.—Dr. E. E. Shivers has been made surgeon for the Louisville & Nashville Railway and assistant surgeon for the La Follette Coal, Iron & Railway Company at Somerville.—Dr. John R. Rathmell has been made dean of the Medical Department of Grant University, Chattanooga, vice the late Dr. Edward A. Cobleigh, and Dr. William G. Bogart has succeeded Dr. Rathmell as secretary of the faculty.—Dr. Rufus E. Fort, Nashville, has been appointed a member of the State Board of Health, vice Dr. William J. McMurray, deceased.—Dr. Thomas H. Marable, Clarksville, has been appointed local surgeon for the Illinois Central Railway Company.—Dr. William B. Rogers has been appointed president of the Memphis board of health.

TEXAS.

Medical Books for Library.—Two hundred volumes of medical books have been bequeathed to the Carnegie Library, Houston, by the late Dr. William H. Harrison, Brunner.

Malpractitioner Pardoned.—Dr. Hannah Reum, El Paso, who is serving a penitentiary sentence of two years on the charge of criminal malpractice, has been pardoned because of the critical condition of her health.

Railway Hospital at Sherman.—The management of the Frisco System has issued an order designating St. Vincent's Sanitarium, Sherman, as the general hospital for the southwestern division of the system.

Fires.—The residence of Dr. Aaron L. Jones, Prairie Dell, was destroyed by fire January 9. Very little was saved and no insurance was carried.—The building at Melissa, owned by Dr. J. E. Hunter and occupied by Dr. A. V. Rutledge, was destroyed by fire, January 20.

Smallpox.—Several cases of smallpox are reported in and around Madison.—A number of cases have been reported in San Angelo.—The public school at Frost has been closed on account of smallpox.—Six cases of smallpox are reported in the southeastern part of Comanche County.—On February 14 several new cases of smallpox were reported at Boyd.

Gift to Dr. Tabor.—Before State Health Officer Tabor left for Europe eighteen of the leading citizens of Galveston forwarded him a check for \$1,000 and steamship transportation for himself and wife in token of their appreciation of the efficient work of Dr. Tabor in keeping Galveston and its trade territory free from yellow fever.

State Society Meeting.—The annual meeting of the Texas State Medical Association will be held in Fort Worth, April 24, 25 and 26. Dr. William R. Thompson is chairman of the committee of arrangements; Dr. Bacon Sanders of the subcommittee on finance; Dr. Frank D. Thompson of the subcommittee on transportation; Dr. John R. Fraser of the subcommittee on reception, and Dr. Frank D. Boyd of the committee on entertainment and place of meeting.

Personal.—Dr. J. H. Florence, quarantine officer at Brownsville, is acting as state health officer during Dr. Tabor's stay in Europe.—Dr. John W. Burns, Cuero, is visiting in New York.

—Dr. William J. Matthews, Austin, is seriously ill from overwork.—Dr. Thomas W. Wiley, McKinney, has been appointed chief surgeon of the Texas, New Mexico & Pacific Railway.—Dr. Charles W. Trueheart, city health officer of Galveston, is reported to be critically ill.—Dr. William Myers, Seguin, was thrown from his buggy in a runaway accident and his hip and clavicle broken.

Medical Society Meetings. The Tri-State Medical Society of Arkansas, Texas and Louisiana held its second annual meeting in Texarkana, Ark., December 6. The following officers were elected: Dr. Oscar Dowling, Shreveport, La., president;

Drs. Charles M. Rosser, Dallas, Texas; M. G. Thompson, Hot Springs, Ark., and Luther Longino, Minden, La., vice-presidents; and Dr. Robert H. T. Mann, Texarkana, Ark., secretary. —The South Texas District Medical Association held its annual meeting December 13 and 14, at which the following officers were elected: Dr. D. Stuart Wier, Beaumont, president; Dr. Perry G. Swearingin, Center, censor; Dr. Jordan, Liberty, vice-president; and Dr. Albert A. Nelson, Nacogdoches, secretary and treasurer. Houston was selected as the next place of meeting. —The Seventh Councilor District Medical Society held its annual meeting in Austin, December 21, at which the following officers were elected: Dr. Joseph A. Holloway, Round Rock, president; Dr. Joseph Gilbert, Austin, secretary; and Drs. Andrew J. Sibley, Creedmore; E. Matt Thomas, Georgetown; James C. Anderson, Granger; Homer B. Hill, Austin, and S. E. Hudson, Austin, censors. —At a meeting held February 16, the Negro Medical Association of Fort Worth was organized with the following officers: Dr. Peter R. Robinson, president; Dr. W. T. Hughes, treasurer; Dr. J. M. Mosely, reporter, and Dr. Franklin W. Adams, secretary.

GENERAL.

A Moral Victory for the Ladies' Home Journal.—A jury of the Supreme Court, at Buffalo, N. Y., recently awarded the World's Dispensary Medical Association, proprietors of a "patent medicine" known as Dr. Pierce's Golden Medical Discovery, \$16,000 damages in a suit for libel against the Curtis Publishing Company, publishers of the *Ladies' Home Journal*. The libel consisted in a statement that this particular medicine contained opium, digitalis and alcohol. The suit was originally brought for \$200,000 damages and the award was so small that the plaintiff immediately made a motion for a new trial on the ground of inadequate damages.

Health Report of the Philippines for October.—The health report of the Board of Health for the Philippine Islands for October states that during the month 842 births were recorded, of which 452 were males and 390 females. There were 904 deaths, or an average of 29 deaths per diem. This is a lower death rate than for the two preceding months. During the month there were 31 cases of cholera, with 29 deaths. The infant mortality, especially among children included in the groups of "under 30 days," and "between 30 days and one year," reached 468. This was 62 more than during the preceding month.

FOREIGN.

Cholera Declining in Russia.—It is reported, by way of Berlin, that the Russian cholera commission has declared the Vistula district, the districts of Wolhynia and Kurland, and the City of Lomza free from cholera.

Research on Etiology of Syphilis.—A Berlin lawyer named Salomonsohn recently founded an endowment to aid scientific research. The first grant (\$400) from the endowment has been given to J. Siegel, the discoverer of the *Cytorrhoeis luis*, to enable him to continue his studies on the etiology of syphilis.

Wealthy Physician Labors Among Poor.—Duke Carl Theodore of Bavaria is a well-known physician, having long made ophthalmology his specialty. He recently performed his five-thousandth cataract operation, assisted by Dr. Zenker, and by his wife, who was the Princess Maria of Portugal. She has always taken an interest in his work and frequently assists him. It is said that he never accepts a fee from any patient, devoting his services to the poor. He lives in Munich and has made many endowments for hospitals and other charitable purposes.

Smallpox in Mexico.—Consul Lespinasse reports from Tuxpan, February 7, that an epidemic of smallpox prevails in that vicinity, but that other settlements and municipalities included in the county are exempt from the disease. Since November 29, the date on which the first case of the epidemic occurred, 60 cases have been recorded. Of these patients 26 have recovered, 12 have died, and 22, most of whom will recover, are still under treatment. The measures adopted to check the course of the epidemic consist of isolation of the sick, necessary aid to the sufferers, and prompt disinfection of the houses in which smallpox patients have been treated.

Board and Lodgings at Lisbon International Medical Congress.—The executive committee sends word to THE JOURNAL that a large number of rooms, with one or more beds, have been secured for the accommodation of the members of the congress. The rates will be from 6 to 10 francs per bed (about \$1.50 to \$2.50). Rooms with board can also be secured for 15 francs, or \$3 a day for each person. A restaurant will be run in connection with the congress, and meals can also

be obtained at the restaurants and hotels of the city. The rooms will be assigned in turn as the demands are received. Mr. Manoel José da Silva, Palácio Foz, Praça dos Restauradores, Lisbon, has charge of this service. The French, Spanish, Portuguese and Italian railroads allow a reduction of 50 per cent, and a change of route going and coming, on condition that the trip is by rail each way. See page 597 for further particulars; see also Correspondence Department in this issue.

LONDON LETTER.

The Amalgamation of the London Medical Societies.

Considerable progress has been made in the scheme for the amalgamation of the numerous London medical societies which has been previously described in THE JOURNAL. At a meeting of the representatives in December an organizing committee was appointed to draw up a detailed scheme. In order to ascertain the amount of financial support likely to be received a circular was issued to over 5,000 doctors, asking for an immediate reply to certain questions as to the probability of their joining the new society as fellows or members. A fellow will pay a subscription of \$15 a year, which will give him the right to attend discussions in all sections, to use the general library, and to receive the proceedings and transactions of the society. A member of only a section will pay \$5 a year and will have the right to take part in the proceedings of the section, to receive its publications, and to use the general reading room. Such a member will be entitled to join other sections on payment of \$2.50 for each additional section, and to obtain the use of the general library for a further subscription of \$5. Every member of a society joining the amalgamation who desires to become a member of the corresponding section or a fellow of the new society will be able to do so without election. It is proposed that those elected subsequently shall pay an entrance fee, and that only the members of a section shall have the power to vote on matters of the section.

The Rebuilding of the London Hospital.

Within the last few weeks the reconstruction of the largest general hospital in England has been completed at a cost of over \$2,150,000. The hospital has been practically rebuilt and now presents a remarkable example of perfection in so far as a well-built structure, part of which dates from 1752, can be compared with new buildings erected regardless of the value of land. Of the sum expended at least \$1,650,000 has been subscribed by the public for the purpose. The remaining \$500,000 has been taken from the invested funds of the institution. The state of the hospital eight years ago amounted to a scandal. There were 780 beds and but one operating theater. The pressure on this single theater was such that the patients had to wait their turn in a fashion which amounted to absolute cruelty. Now there are eight operating theaters, five of which are in daily use, the other three being required not less than four days a week. There are now 937 beds in the hospital. Formerly the out-patient department was totally inadequate to deal with the 161,000 individual out-patients who there sought relief—a number which has now increased to 206,000. There were no proper seclusion and isolation wards. The ophthalmic cases were accommodated in a damp basement below the ground level. The arrangements for children were such that the constant outbreaks of infectious disease paralyzed the whole work.

The London School of Clinical Medicine.

The organization of the old Seamen's Hospital at Greenwich as a postgraduate school, which promises to be one of the most important in this country, has recently been described in THE JOURNAL. At a meeting of one of the branches of the British Medical Association, held at the hospital, special attention was directed to the advantages offered by it as a postgraduate school. Sir Dyce Duckworth, who presided, said that the hospital had done excellent work in the past, but during the last few months the staff had been materially increased and included members well known to the medical world at large as eminent in their several departments. He said that no institution so well equipped for the purpose had been organized in London, and was a great advance in the direction of supplying a want that had long been felt. He said that medical men from various parts of the world go to England and, not finding what existed in Germany and France, turned their backs on London and betook themselves to other countries. The hospital provided accommodation chiefly for sailors, and in connection with the School of Tropical Medicine, of which it formed part, it provided for observation splendid examples of tropical diseases—dysentery and beriberi. Thus an excellent field is provided for officers of the navy and army and for those who are fitting themselves for colonial practice.

Disease in the Port of London.

During the past two months 6,207 vessels entered the port of London and were inspected by the medical staff. Of these, 5,394 were British. Thirty-eight cases of infectious disease were dealt with, viz.: Chickenpox, 13; typhoid fever, 13; measles, 6; erysipelas, 1; scarlet fever, 1, and Malta fever, 1. Three cases of beriberi have been reported. A large quantity of unsound food was seized and destroyed at the docks and warehouses, particularly some extensive importations of beef and mutton from the River Plate and Buenos Ayres. The extermination of rats still continues. The total number destroyed so far amounts to 389,543.

Medical Legislation

The Pure Food Bill.

The following is the text of the Pure Food Bill as amended and now before the House of Representatives:

"An Act for preventing the adulteration or misbranding of foods or drugs, and for regulating traffic therein, and for other purposes."

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

"That the introduction into any state or territory or the District of Columbia from any other state or territory or the District of Columbia, or from any foreign country, or shipment to any foreign country of any article of food or drugs which is adulterated or misbranded, within the meaning of this act, is hereby prohibited; and any person who shall ship or deliver for shipment from any state or territory or the District of Columbia to any other state or territory or the District of Columbia, or to a foreign country, or who shall receive in any state or territory or the District of Columbia from any other state or territory or the District of Columbia, or foreign country, or who, having received, shall deliver, in original unbroken packages, for pay or otherwise, or offer to deliver to any other person, any such article so adulterated or misbranded within the meaning of this act, or any person who shall sell or offer for sale in the District of Columbia or the territories of the United States any such adulterated or misbranded foods or drugs, or export or offer to export the same to any foreign country, shall be guilty of a misdemeanor, and for such offense be fined not exceeding \$200 for the first offense, and on conviction for each subsequent offense not exceeding \$300 or be imprisoned not exceeding one year, or both, in the discretion of the court: Provided, however, that no person shall be liable to the penalty of imprisonment as provided herein unless he knowingly committed the offense charged: Provided further, that no article shall be deemed misbranded or adulterated within the provisions of this act when intended for export to any foreign country and prepared or packed according to the specifications or directions of the foreign purchaser when no substance is used in the preparation or packing thereof in conflict with the laws of the foreign country to which said article is intended to be shipped; but if said article shall be in fact sold or offered for sale for domestic use or consumption, then this proviso shall not exempt said article from the operation of all the other provisions of this act."

TO ESTABLISH METHODS OF PROCEDURE.

"Sec. 2. That the Secretary of the Treasury, the Secretary of Agriculture, and the Secretary of Commerce and Labor shall make uniform rules and regulations for carrying out the provisions of this act, including the collection and examination of specimens of foods and drugs manufactured or offered for sale in the District of Columbia, or in any territory of the United States, or which shall be offered for sale in unbroken packages in any state other than that in which they shall have been respectively manufactured or produced, or which shall be received from any foreign country, or intended for shipment to any foreign country, or which may be submitted for examination by the chief health, food, or drug officer of any state, territory, or the District of Columbia, or at any domestic or foreign port through which such product is offered for interstate commerce, or for export or import between the United States and any foreign port or country."

METHODS OF EXAMINATIONS.

"Sec. 3. That the examinations of specimens of foods and drugs shall be made in the Bureau of Chemistry of the Department of Agriculture, or under the direction and super-

vision of such bureau, for the purpose of determining from such examinations whether such articles are adulterated or misbranded within the meaning of this act; and if it shall appear from any such examination that any of such specimens is adulterated or misbranded within the meaning of this act, the Secretary of Agriculture shall cause notice thereof to be given to the party from whom such sample was obtained. Any party so notified shall be given an opportunity to be heard, under such rules and regulations as may be prescribed as aforesaid, and if it appears that any of the provisions of this act have been violated by such party, then the Secretary of Agriculture shall at once certify the facts to the proper United States district attorney, with a copy of the results of the analysis or the examination of such article, duly authenticated by the analyst or officer making such examination, under the oath of such officer. After judgment of the court notice shall be given by publication in such manner as may be prescribed by the rules and regulations aforesaid."

PROSECUTIONS.

"Sec. 4. That it shall be the duty of each district attorney to whom the Secretary of Agriculture shall report any violation of this act, or to whom any health or food or drug officer or agent of any state, territory, or the District of Columbia, shall present satisfactory evidence of any such violation, to cause appropriate proceedings to be commenced and prosecuted in the proper courts of the United States, without delay, for the enforcement of the penalties as in such case herein provided."

DEFINITION OF "DRUG" AND "FOOD".

"Sec. 5. That the term 'drug,' as used in this act, shall include all medicines and preparations recognized in the United States Pharmacopoeia or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation, or prevention of disease of either man or other animals. The term 'food,' as used herein, shall include all articles used for food, drink, confectionery, or condiment by man or other animals, whether simple, mixed, or compound."

DEFINITION OF "ADULTERATION".

"Sec. 6. That for the purposes of this act an article shall be deemed to be adulterated:

"In case of drugs:

"First.—If, when a drug is sold under the standard recognized in the United States Pharmacopoeia or National Formulary, it differs from the standard of strength, quality, or purity, as determined by the test laid down in the United States Pharmacopoeia or National Formulary official at the time of the investigation."

"Second.—If its strength or purity differ from any other professed standard or quality under which it is sold."

"In the case of confectionery:

"If it contain terra alba, barytes, talc, chrome yellow, or other mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to health."

"In the case of food:

"First.—If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength."

"Second.—If any substance has been substituted wholly or in part for the article."

"Third.—If any valuable constituent of the article has been wholly or in part abstracted."

"Fourth.—If it be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed."

"Fifth.—If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health: Provided, that when in the preparation of food products for shipment they are preserved by an external application applied in such manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, the provisions of this act shall be construed as applying only when said products are ready for consumption."

"Sixth.—If it consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that has died otherwise than by slaughter."

DEFINITION OF "MISBRANDING".

"Sec. 7. That the term 'misbranded,' as used herein, shall apply to all drugs, or articles of food, or articles which enter into the composition of food, the package or label of which

shall bear any statement regarding the ingredients or substances contained in such article, which statement shall be false or misleading in any particular, and to any food or drug product which is falsely branded as to the state, territory, or country in which it is manufactured or produced.

"That for the purposes of this act an article shall also be deemed to be misbranded:

"In case of drugs:

"*First*.—If it be an imitation of or offered for sale under the name of another article.

"*Second*.—If the contents of the original package shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if it fail to bear a statement on the label of the quantity or proportion of any alcohol therein, or of any opium, cocaine, or other poisonous substance which may be contained therein.

"In the case of food:

"*First*.—If it be an imitation of or offered for sale under the distinctive name of another article.

"*Second*.—If it be labeled or branded so as to deceive or mislead the purchaser, or purport to be a foreign product when not so.

"*Third*.—If in package form, the quantity of the contents of the package be not plainly and correctly stated in terms of weight or measure, on the outside of the package.

"*Fourth*.—If the package containing it or its label shall bear any statement, design, or device regarding the ingredients or the substances contained therein, which statement, design, or device shall be false or misleading in any particular: Provided, that an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases:

"*First*.—In case of mixtures or compounds which may be now or from time to time hereafter known as articles of food, under their own distinctive names, and not an imitation of or offered for sale under the distinctive name of another article, if the name be accompanied on the same label or brand with a statement of the place where said article has been manufactured or produced.

"*Second*.—In the case of articles labeled, branded, or tagged so as to plainly indicate that they are compounds, imitations, or blends: Provided, that the term blend as used herein shall be construed to mean a mixture of like substances, not excluding harmless coloring or flavoring ingredients: And provided further, that nothing in this act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredient to disclose their trade formulas, except in so far as the provisions of this act may require to secure freedom from adulteration or misbranding."

PROTECTION OF THE RETAILER WHO HAS GUARANTEES.

"SEC. 8. That no dealer shall be convicted under the provisions of this act when he is able to prove a guaranty of conformity with the provisions of this act in form approved by the rules and regulations herein provided for, signed by the manufacturer or the party or parties from whom he purchased said articles: Provided, that said guarantor resides within the United States. Said guaranty shall contain the full name and address of the guarantor making the sale to the dealer, and said guarantor shall be amenable to the prosecutions, fines, and other penalties which would otherwise attach in due course to the dealer under the provisions of this act."

COMMISSION OF EXPERTS.

"SEC. 9. That it shall be the duty of the Secretary of Agriculture to fix standards of food products when advisable for the guidance of the officials charged with the administration of food laws and for the information of the courts, and to determine the wholesomeness or unwholesomeness of preservatives and other substances which are or may be added to foods; and to aid him in reaching just decisions in such matters he is authorized to call on the committee on food standards of the Association of Official Agricultural Chemists and the committee of standards of the Association of State Dairy and Food Departments, and such other experts as he may deem necessary.

"And on request made to the Secretary of Agriculture prior to reaching any decision as provided for in this section, by any manufacturer or other person interested, asking for the appointment of a board to determine the wholesomeness or unwholesomeness of any preservative or other substance which is or may be added to foods, and concerning the use of which the person making the request has an interest, it shall be the duty of the Secretary of Agriculture to appoint a board of disinterested experts, which board shall consist of five members, one of

whom shall be an expert toxicologist, one an expert physiologic chemist, one an expert bacteriologist, one an expert pathologist, and one an expert pharmacologist, which board shall meet at the city of Washington, District of Columbia, or elsewhere, at the call of the Secretary of Agriculture, and pass on such question after proper notice and hearing granted to the person making such request. The compensation of the members of such board shall be fixed by the Secretary of Agriculture."

HOW SAMPLES MAY BE PROCURED.

"SEC. 10. That every person who manufactures or produces for shipment and delivers for transportation within the District of Columbia or any territory, or who manufactures or produces for shipment or delivers for transportation from any state, territory, or the District of Columbia, to any other state, territory, or the District of Columbia, or to any foreign country, any drug or article of food, and every person who exposes for sale or delivers to a purchaser in the District of Columbia or any territory any drug or article of food manufactured or produced within said District of Columbia or any territory, or who exposes for sale or delivers for shipment any drug or article of food received from a state, territory, or the District of Columbia other than the state, territory, or the District of Columbia in which he exposes for sale or delivers such drug or article of food, or from any foreign country, shall furnish within business hours and on tender and full payment of the selling price a sample of such drug or article of food to any person duly authorized by the rules and regulations herein provided for to receive the same, and who shall apply to such manufacturer, producer, or vendor, or person delivering to a purchaser, such drug or article of food, for such sample for such use, in sufficient quantity for the analysis of any such drug or article of food in his possession.

"SEC. 11. That any manufacturer, producer, or dealer who refuses to comply, on demand, with the requirements of section ten of this act shall be guilty of a misdemeanor, and on conviction shall be fined not exceeding \$100, or imprisoned not exceeding 100 days, or both. And any person found guilty of manufacturing or offering for sale, or selling, an adulterated, or misbranded article of food or drug in violation of the provisions of this act may, in the discretion of the court, be adjudged to pay, in addition to the penalties hereinbefore provided for, all the necessary costs and expenses incurred in inspecting and analyzing such adulterated articles which said person may have been found guilty of manufacturing, selling, or offering for sale."

LIMITED TO INTERSTATE COMMERCE.

"SEC. 12. That this act shall not be construed to interfere with commerce wholly internal in any state, nor with the exercise of their police powers by the several states; but foods and drugs fully complying with all the provisions of this act shall not be interfered with by the authorities of the several states when transported from one state to another so long as they remain in original unbroken packages, except as may be otherwise defined by law or provided by statutes of the United States."

SEIZURE OF GOODS.

"SEC. 13. That any article of food or drug that is adulterated or misbranded within the meaning of this act, and is transported or being transported from one state to another for sale, or if it be sold or offered for sale in the District of Columbia or any territory of the United States, or if it be imported from a foreign country for sale, or if intended for export to a foreign country, shall be liable to be proceeded against in any district court of the United States, within the district where the same is found, and seized by a process of libel for condemnation. And if such article is condemned as being adulterated or misbranded, within the meaning of this act, the same shall be disposed of as the said court may direct, and the proceeds thereof, if sold, less the legal costs and charges, shall be paid into the treasury of the United States, but such goods shall not be sold in any state contrary to the laws of that state. The proceedings of such libel cases shall conform as near as may be to the proceedings in admiralty, except that either party may demand trial by jury of any issue of fact joined in such case; and all such proceedings shall be at the suit of and in the name of the United States."

TO EXAMINE GOODS FOR EXPORT.

"SEC. 14. That the Secretary of Agriculture is authorized to investigate the character and extent of the adulteration of foods and drugs, and whenever he has reason to believe that articles are being imported from foreign countries which by reason of such adulteration are dangerous to the health of the

people of the United States, or are of kinds which are forbidden entry into or forbidden to be sold or restricted in sale in the countries in which they are made or from which they are exported, or which shall be falsely labeled in any respect, either by the omission of the name of any added ingredient or otherwise, or in regard to the place of manufacture, or the contents of the package, shall make a request on the Secretary of the Treasury for samples from original packages of such articles for inspection and analysis; and the Secretary of the Treasury is hereby authorized to open such original packages and deliver specimens to the Secretary of Agriculture for the purpose mentioned, giving due notice to the owner or consignee of such articles, who may appear before the Secretary of Agriculture and have the right to introduce testimony; and the Secretary of the Treasury shall refuse delivery to the consignee of any of such goods which the Secretary of Agriculture reports to him have been inspected and analyzed and found to be any of the kinds mentioned in this section: Provided, that the Secretary of the Treasury may deliver to the consignee such goods, pending examination and decision in the matter, on execution of a penal bond of the full invoice value of such goods, together with the duty thereon, and on refusal to return such goods for any cause to the custody of the Secretary of the Treasury, when demanded, for the purpose or excluding them from the country, or for other purposes, said consignee shall forfeit the full amount covered by the bond.

"Sec. 15. That the term 'territory' as used in this act shall include the insular possessions of the United States.

"Sec. 16. That this act shall be in force and effect from and after its passage; Provided, however, that no penalties herein named shall be imposed until after the expiration of one year from the passage of the act."

To Investigate the Proprietary Association.

The following resolution, introduced into the House of Representatives March 5, 1906, by Mr. Gillespie, was referred to the committee on judiciary and ordered to be printed. The possibilities involved in an investigation of the bodies mentioned are interesting.

WHEREAS, It is alleged that John W. Jennings, a citizen of the United States, engaged in the sale of drugs, chemicals, patent medicines and proprietary articles at wholesale and retail at number eleven hundred and thirty-two Eighteenth Street, in the city of Washington, District of Columbia, is being conspired and discriminated against by certain combinations, in violation of the Act of Congress of July second, eighteen hundred and ninety, entitled "An Act to protect trade and commerce from unlawful restraints and monopolies," namely: The Proprietary Association of America, an unincorporated association composed of upward of ninety per centum of all the manufacturers and proprietors of patent medicines, drugs, chemicals and proprietary articles within the United States, whose members reside and do business in the several states of the United States; The National Wholesale-Druggists' Association, an unincorporated association composed of upward of ninety per centum of all the wholesale druggists of the United States, whose members are the distributing agents for manufacturers and proprietors of patent medicines, drugs, chemicals and proprietary articles, purchasing the same from manufacturers in the several states of the United States and in foreign markets, and selling and supplying the same to retail druggists throughout the United States; The National Association of Retail Druggists, briefly known as the N. A. R. D., an unincorporated association having a membership composed of local associations of retail druggists and other kindred associations; and

WHEREAS, It is alleged that the aforesaid Jennings, by reason of his non-affiliation with the District of Columbia Retail Druggists' Association, the local branch of the aforesaid N. A. R. D., has been for several years past and is now blacklisted, and thereby prevented from buying in open market any drugs, patent medicines, chemicals and proprietary articles manufactured or controlled by the members of the aforesaid associations; and

WHEREAS, It is alleged that the said discrimination and blacklisting have resulted in heavy financial loss to the aforesaid Jennings and threaten the ruin of his business; and

WHEREAS, It is alleged that the aforesaid Jennings, on Feb. 15, 1905, filed before the Department of Justice a petition setting forth the aforesaid grievances; and

WHEREAS, It is alleged that up to the present time no action has been taken by the Department of Justice on the aforesaid petition: Therefore be it

Resolved, That the Attorney-General of the United States be, and he is hereby, requested, if not incompatible with the public interest, to report to the House of Representatives at his earliest convenience for its guidance, all the information within the knowledge of his department which shows or tends to show that there exists now, or within the past twelve months has existed, a combination or arrangement of manufacturers and retail druggists, or of manufacturers of patent medicines, drugs, chemicals and proprietary articles, whereby a druggist not a member of one of the aforesaid associations has been or is now being discriminated against in the sale of the articles named in the Act entitled "An Act to protect trade and commerce from unlawful restraints and monopolies," or acts amendatory thereof; also what steps have been taken by the Department of Justice looking to the prosecution of the petition of the aforesaid Jennings, filed before the department on February 15, 1905, as herein above set forth.

New Jersey Committee on Legislation.

WILLIAMSTOWN, N. J., March 2, 1906.

To the Editor:—I am inclosing a list of the National Auxiliary Legislative Committee of the state of New Jersey. This committee has been named at the suggestion of Dr. Reed, chairman of the National Committee on Legislation, so that each state should be thoroughly organized, and the National Committee on Legislation should be able to reach every county in each state.

We are trying to take up the work and to do everything in our power to assist the National Committee on Legislation, and at the same time to look after matters in our own state. We have a State Auxiliary Legislative Committee, which is composed of one member from each county medical society, and we are getting in close touch with the profession's demands throughout the state.

The "patent-medicine" bill has been introduced in our legislature and we are going to do everything that is possible to pass the bill.

We have taken up all the matters as suggested at the conference of the National Legislative Committee, with our senator and congressmen, and in most cases have received responses from them that they are ready to co-operate with us on all matters which we discussed at the meeting of the National Legislative Council.

New Jersey is, I think you will find, ever ready to do her part and to assist in any way possible for the advancement of the medical profession on sanitary matters.

L. M. HALSEY, Chairman.

LIST OF THE NATIONAL AUXILIARY, LEGISLATIVE COMMITTEE OF NEW JERSEY.

| | | |
|------------------------|--|----------------------------|
| Atlantic County..... | Dr. Edgar Darnell..... | Atlantic City |
| Bergen County..... | Dr. D. A. Currie..... | Englewood |
| Burlington County..... | Dr. W. P. Melcher..... | Mt. Holly |
| Cumberland County..... | Dr. J. H. Moore..... | Bridgeton |
| Camden County..... | Dr. Daniel Strook..... | Camden |
| Cape May County..... | Dr. M. F. Lummis..... | Holly Beach |
| Essex County..... | Dr. Ralph H. Hunt..... | 29 Harrison St., E. Orange |
| Gloucester County..... | Dr. Geo. C. Law..... | Paterson |
| Hudson County..... | Dr. Samuel A. Heller..... | Hoboken |
| Mercer County..... | Dr. Elmer Barvis..... | Trenton |
| Middlesex County..... | Dr. David C. English..... | New Brunswick |
| Mounmouth County..... | Dr. D. McLean Forman..... | Freehold |
| Morris County..... | Dr. H. W. Kice..... | Wharton |
| Ocean County..... | Drs. L. C. Lindlay and W. L. Schaffer..... | Lakewood |
| Passaic County..... | Dr. John L. Leal..... | Paterson |
| Salem County..... | Dr. W. H. Carpenter..... | Salem |
| Somerset County..... | Dr. John P. Hecht..... | Somerville |
| Sussex County..... | Dr. M. D. Hughes..... | Layton |
| Union County..... | Dr. N. L. Wilson..... | Elizabeth |
| Warren County..... | Dr. John C. Johnson..... | Blairstown |

Correspondence

Interstate Reciprocity.

DETROIT, March 10, 1906.

To the Editor:—Dr. George W. Webster states in reply to my letter in THE JOURNAL, March 3, 1906, in which I interpret his proposed plan of action to make practical his basis of reciprocity as in conflict with the authority and purposes of state medical boards, and in which also I suggest that his committee could be effective from a standpoint of education working in harmony with the Association of American Medical Colleges—as follows:

"I regret very much that Dr. Harrison seems to have utterly failed to grasp the fundamental ideas which I tried to convey, namely: that the American Medical Association is desirous of assisting the examining boards, and that the plan proposed is not simply a scheme of reciprocity but a proposed plan of education, which, if successfully carried out, will serve as a rational foundation on which reciprocity will naturally rest."

A careful review of his article failed to find even a direct or indirect reference to the medical boards as a factor in his plan to make practical the accepted basis of reciprocity, but I do find the unequivocal statements that the basis of reciprocity can only be made effective through the Council on Education of the American Medical Association. As corroborative evi-

dence of his intent may be mentioned his ignoring completely the existence of the American Confederation, which is in complete and effective possession of the field which he proposed to operate and improve. If Dr. Webster were simply desirous of assisting the medical boards and had proposed a plan of education only, he should not have ignored the two most important factors—medical boards, represented by the American Confederation, and the medical colleges, represented in a large degree by the Association of American Medical Colleges. I am pleased, however, to accept without further reservation, his statement that the Council on Medical Education proposes to limit its endeavors to the educational phase of the question.

In reference to that portion of Dr. Webster's reply which deals principally with himself and his personal achievements and services to the profession and to the causes of educational reciprocity, I have to say that I fully appreciate and gladly credit Dr. Webster's great ability as well as his activity in all matters pertaining to the good of the profession, and the objects it has in view, but I am not prepared to go the length of supporting him in his contention that either he or the National Confederation are the authors of the present method of standard adopted by the Association of American Medical Colleges, or by the American Confederation. He states that in 1903, and again in 1904, the National Confederation of State Medical and Licensing Boards adopted his standard curriculum, and that this curriculum, which assigned a certain number of hours in the course to each subject, was the first curriculum to be adopted by any organization, and that it was subsequently adopted by the Association of American Medical Colleges and the American Confederation without any important modifications. Is his statement based on facts? As early as July, 1900, the Michigan State Medical Board published and enforced an itemized medical standard, divided into lectures, teaching, and laboratory work, and in June, 1902, published a further itemized standard of both preliminary and medical education, the latter divided into lectures, laboratory, and clinics, while Dr. Webster's standard of three years later contains simply the total number of hours for each subject, without division into lectures, laboratory, and clinics, and therefore was a much less developed method, and possessed nothing of the Michigan original, except in its crudeness.

In 1904 the American Confederation adopted the Michigan method of standard, both of preliminary and medical education, but postponed the final adoption of the detail until subsequent to the 1905 meeting of the Association of American Medical Colleges, in order that the standards of the Confederation of Boards and the Association of Colleges should harmonize.

As a member of, and secretary of the confederation committee in charge of the standards, I can state that Dr. Webster's curriculum was not considered by the committee, or even known to have an existence. The committee of the Association of American Medical Colleges, of which Dr. Kober was chairman, in its printed report, which was adopted, presented in parallel columns the proposed standard of 4,000 hours, divided into lectures, laboratory, and clinics (exactly in harmony with the Michigan method) and the Michigan standard of 4,000 hours. With some slight variation in the detail of hours per subject these standards were exactly uniform.

Looking up the last two or three years' official report of the Association of Medical Colleges I find frequent reference to the Michigan standard and method, but no reference to Dr. Webster's curriculum, or the National Confederation. If those interested could see in print, for comparison, the curriculum of the National Confederation of 1903 and 1904, which Dr. Webster claims as his offspring, and the standard curriculum of the Association of American Medical Colleges, and also the Michigan curricula of each year since 1900, which have been incorporated in her application forms since 1902, the fallacy of Dr. Webster's claim of originality would be fully appreciated. Especially so in connection with his statement made at the Portland session last years, as follows:

"Dr. G. W. Webster of Illinois said that while there had been much talk of raising the standard no real standard has as yet been established."

As an additional evidence of inconsistency in Dr. Webster's claim might be mentioned the fact that the state board of

which he is president, and its most influential member, has as yet failed to adopt the method of standard which he states was originated by him in 1903, and which was actually in practical use in Michigan three years prior to this date.

In connection with the above I also desire to refer briefly to the published letter of commendation received by Dr. Webster from Dr. George M. Kober, in which it would appear that the latter indorses his claim that he alone of all others deserves credit for the standard curriculum, which at a later date Dr. Webster denies exists.

I am pleased to note that Dr. Webster, like the rest of us, is subject to the human weakness of appreciating credit for personal good works. I also received an almost similar letter from Dr. Kober, with this difference, perhaps—the one letter was based on the belief and kindly appreciation for services attempted; the other on fact. While such letters are usual, proper, and often helpful, it was never contemplated by their author that they should be used in the manner Dr. Webster used the one received by him. They should never be taken too seriously or literally by the fortunate recipients, besides, such letters are not material to the cause which Dr. Webster and myself have at heart, and the methods of obtaining which we are now agreed on. Indeed, the discussion seems to have been diverted from the original subject of reciprocity to one of personal claims and credit, for which I do not hold myself responsible.

B. D. HARRISON.

Lisbon and Its People.—Some Interesting Facts for Those Attending the International Congress.

BALTIMORE, March 1, 1906.

To the Editor:—Having received numerous letters of inquiry regarding Lisbon and its people I take this opportunity to give a few facts to those who are to attend the congress. Being well acquainted with the people of Portugal, I regret that I can not do them greater justice, but material for a medical journal has its limits.

Contrary to the general opinion, Portugal differs sensibly from Spain in its social, intellectual and moral life. Ethnographically the inhabitants of the two countries are the same race, but apart from this there is a great difference between the two races.

The primitive traits of the Portuguese have been changed by long series of mixtures between the original inhabitants and foreigners. This amalgam, which was produced during and directly after Portugal's great geographical discoveries, has brought about a physiognomic difference which is noticeable the moment the traveler reaches the Spanish-Portuguese frontier.

Throughout Portugal the national type remains the same, but the mode of life, costumes, habits and morals vary in different parts of the country. These differences are distinct; for instance, the Minhotos are cultivators of the soil, intelligent and serious in their work, but on fête days they are gay, joyous and great admirers of pretty women and jewelry. The grape pickers and winggrowers of Douro, the inhabitants of the Beira, sometimes shepherds, sometimes fishermen, are hard workers, but their tasks finished they enjoy themselves in sports and drinking. The mountaineers are a strong, virile race with meditative manners and austere morals.

One feature, however, is characteristic of all Portugal. This is the beautiful, brilliant and desirous eyes of the women. The latter are handsome, have blooming complexions and in all anatomic traits accentuate their sex. Short in stature, they are well proportioned, esthetic in carriage, opulent in physiologic functions, and have pretty, tiny feet and hands. Their shining and jetty hair makes a striking contrast to their milk-white foreheads, rosy cheeks and pink lips.

Intellectually and morally the Portuguese offer an interesting melange of good qualities and bad faults. They are a lovable race when you know them well. They are invariably kind to the poor, gentle to their beasts, and open-hearted to the properly introduced foreigner.

It is announced that the members of the congress will be invited to witness a bullfight in Lisbon. I advise everyone to go. You may with perfect security to any sensitiveness take your wives and daughters. A Portuguese bullfight differs

from a Spanish bullfight as much as a game of bean-bag differs from a college football game. There is no bloodshed, nothing repugnant, but plenty of hilarity, and frequently great athletic ability is displayed by men, horses and bulls. On the short horns of the latter are placed large rubber balls. Sometimes the horse manages to kick the bull in the ribs, when he utters a roar of indignation and returns the insult by butting the horse with his rubber buffers. This pleases the risible centers of the happy Portuguese and the bullfight is over.

There is much that pertains to the Orient in the customs and architecture of Portugal, and the many social laws are, undoubtedly only modified conditions that existed when the Moors ruled the peninsula.

The higher classes in Lisbon and Oporto well appreciate the value of educating their daughters, yet conditions are such that the girls must be confined to conventual supervision. In order to maintain this oversight on the young women, yet have them free to enjoy the learning of other countries, they are taught by English and Irish women. The great convent schools of Bom Sucesso and Salesias, where the girls of the best society are sent, are controlled exclusively by English and Irish sisters.

This naturally brings me to what I shall have to confine myself in this article—educational matters—though I feel no adequate justice can be done to the charming Portuguese people by neglecting to tell of their home life, or of the struggle educated people, including the king, are making for freedom in religious thought.

There exists in Portugal only one educational institution bearing the honor and title of a university. This was founded in Lisbon in 1288 and transferred in 1307 to Coimbra (pronounce, but do not indite, *Quimbre*). A bull of Gregory XI was issued October, 1376, which authorized the university to give degrees in letters and theology. In 1377 the university was again transferred to Lisbon, but 200 years later removed to its former home, Coimbra, where it has remained. It has been the battleground for science and religion through many a century. In 1836 came the great movement of the reformers and then were established under the direct control of the government the departments of medicine, law and the arts. Gradually it became a school of modern ideas, and has kept well up in the progress of nations.

The university is composed of five faculties: medicine, law, theology, mathematics and physics. This last faculty has under its control all instruction in the natural sciences and attached to it are excellent botanical and zoological gardens. The chairs of Greek and Hebrew are under the charge of the theological faculty. The university buildings are massive, handsome and unique in their architectural designs. They should be well studied, for nowhere throughout the world will the traveler find their equal. The library is large, its decorations are rich and immensely valuable, and combine all the Oriental splendor of the Alhambra with the utility of the libraries in St. Mark's, Venice.

The course of instruction at the great Portugal university is essentially modern in that it is free from church interference and generously supported by the estate. The professors and those foreigners who are invited to talk to the students have the freedom of the air to say what they think. (This in some respects differs from a few of our universities.)

The professors of Coimbra, all Portuguese, are divided into fifty-three lecturers (*lentes*) and twenty-two associate lecturers (*substitutos*). The members of the different faculties are designated by their capes and hats, as follows: Medicine, yellow, 18 members; law, red, 21 members; mathematics, blue, 13 members; philosophy, blue and white, 11 members, and theology, white, 9. On all official occasions and at examinations the professors are dressed in their distinctive robes and hats. The students are obliged to wear a uniform of black cloth, composed of short breeches, cape and black hat, of a disgraceful shape and size. For this latter reason the students go bareheaded except on official occasions.

The last statistics show that there are 1,180 students in all departments, divided as follows: Law, 510; mathematics, 130; medicine (and pharmacy), 140; and in the natural sciences,

360, while it will undoubtedly surprise many readers to learn that in the department of theology there are only 40 students.

The course is five years, and the charge for instruction about \$30 a year, except in medicine, where it is somewhat greater. The minimum age is 16 years, but the average age of the students is about 19. Women are rarely seen at the university, the woman of eunuchal tendency not yet having arrived at Portugal. One lone woman of mixed inheritance received a degree of philosophy in 1894. She has disappeared. There are few foreigners at the university, unless we class the Brazilians as such. These latter of Portuguese blood, attend in large numbers.

In Oporto there is a school of medicine where instruction is of a high type. No degrees are conferred by this school, applicants having to pass the examination at Coimbra.

WILLIAM LEE HOWARD, M.D.

The Physician and the Pharmacopeia.

NEW YORK, Feb. 18, 1906.

To the Editor:—I thank you for your courtesy in printing my letter with the above title in your pages (February 17, p. 526). Your answer, however, requires a reply on my part. You say: "We do not believe anyone suggests that we should be limited to Pharmacopœial preparations." And further you make the statement: "Our correspondent, like too many others, has set up a straw man to knock down." Now, I am not given to setting up straw men, and I am not very likely to make absurd statements, when the subject of proprietary remedies is under discussion, as I have studied the question from all sides, in all its phases, and at a time when too many who show now such commendable zeal on the subject were an absolute *terra incognita*. I could name you a dozen good, but ignorant men, who just did show themselves so narrow-minded and so bigoted as to condemn—condemn utterly—every proprietary and non-Pharmacopœial preparation. But I can do better than that. In THE JOURNAL of the American Medical Association, January 20 (p. 221, col. 1), Dr. Frank G. Wheatley makes the statement that "the time has come when there are no ethical preparations. We should ignore the whole list. If we will confine our prescribing to articles recognized by the national authority, [The Pharmacopœia], we shall confer one of the greatest boons on the public, and incidentally on ourselves, that the annals of medicine record." And on the same page, column 2, Dr. James C. White is reported as saying, that "though in practice fifty years he had never prescribed a single remedy outside of those contained in the Pharmacopœia." (I wonder if he used cocaine between 1884 and 1894, as it was only in the latter year that cocaine became official, while Koller discovered it in 1884.) So you see, there are men, so ill-informed, so narrow-minded, as to advocate the non-use of any non-Pharmacopœial preparations. And it was against them that my letter was directed. For I fear that through excess of zeal, through misdirected energy, through intemperate statements of ill-informed persons, who are not familiar with the actual needs of the every day practitioner, our entire work, our labor for years, may go for naught.

WILLIAM J. ROBINSON, M.D.

Poison Ivy.

WASHINGTON, D. C., March 6, 1906.

To the Editor:—In THE JOURNAL, Jan. 27, 1906, page 301, you quote from the *Cincinnati Lancet-Clinic* from an article by Dr. E. S. McKee on the subject of poisoning by poison oak or ivy. Is it possible that the work of Pfaff, published in the *Journal of Experimental Medicine* (1897, vol. ii, No. 2), is not yet known to the profession?

Dr. McKee "has been poisoned twice by these plants and feels that he knows many times more about the trouble than he possibly could have known had he not had this experience." I have been poisoned about eighty times and feel that I also know something of the condition.

As a result of the work of Pfaff, we know that the irritant substance of *Rhus toxicodendron* and *Rhus venenata* is a fixed oil which is soluble in alcohol and which is precipitated by lead subacetate. The oil is similar to cardol, but is probably not

identical. The use of lead salts in dermatitis resulting from action of the oil is rational, but the precipitated lead compound must be removed from the skin as it is gradually decomposed; the oil is set free and its action continues.

The use of soap and water and a good hand brush is the simplest method of getting rid of the oil. The action is entirely mechanical and is perfectly efficient. Alcohol dissolves and removes the oil, but successive portions must be allowed to flow over the affected part, as, after contact, the alcohol may contain sufficient oil to spread the irritation. Ordinary alcohol must be used and not 50 per cent. alcohol, as the latter does not dissolve the oil. The action is purely a solvent one and not one of neutralization.

In every case the above methods of treatment are at once effective: further irritation is stopped and healing of the lesions begins. In some cases when actual sloughing has taken place a week or two may be necessary for complete healing, but ordinarily two or three days' time is sufficient. The use of ointments or fatty substances is both theoretically and clinically wrong, as such substances serve only to spread the oil.

It should be remembered that the clothing may have been in contact with the plants and that oil may be transferred from it to the skin and the irritation continued in this way. I have been poisoned by handling shoes worn while collecting the plants a year previously. Pollen from the flowers contains sufficient oil to give rise to a dermatitis in unusually susceptible persons.

A. W. BALCH,

P. A. Surgeon, United States Navy.

American Association of Medical Journal Advertisers.

MEMPHIS, TENN., March 10, 1906.

To the Editor:—I am sending herewith for publication in THE JOURNAL copy of constitution of the American Association of Medical Journal Advertisers. This constitution has been agreed on through correspondence between the medical directors of a number of institutions as the basis of a temporary organization to stand until the annual meeting to be held in connection with the session of the American Medical Association in June. It will come up for confirmation or amendment at that meeting. Owners or superintendents of institutions who are in accord with the objects of this organization, who have not already been reached by direct correspondence, are requested to send their application for membership to the secretary.

GEO. E. PETTEY, Secretary.

CONSTITUTION OF THE AMERICAN ASSOCIATION OF MEDICAL JOURNAL ADVERTISERS.

NAME.

This Association shall be known as the American Association of Medical Journal Advertisers.

OBJECT.

To assist in maintaining proper ethical standards and for the advancement of truth and of honorable dealing.

To establish and promulgate definite rules of conduct with reference to various questions which arise in institution work, which questions are left open to more or less doubt and to variable constructions, by the general provisions of the Principles of Medical Ethics of the American Medical Association.

MEMBERSHIP.

Membership in this association shall be limited to physicians who are responsible owners, superintendents or medical directors of "reputable" institutions devoted to the treatment of mental and nervous diseases and of alcohol and drug addictions who subscribe to the Principles of Medical Ethics of the American Medical Association.

OFFICERS.

The officers of the association shall be a president, a vice-president and a secretary, who shall be elected annually at a meeting to be held at the time and place of session of the American Medical Association, and shall hold their offices for one year and until their successors are elected.

The president and vice-president shall discharge such duties as are incumbent on a presiding officer.

The secretary shall be the executive officer of the association and shall conduct the correspondence, keep the records and transact such other business as may be committed to him by vote of the Association or by direction of the executive committee.

The president, vice-president and secretary and two other members, to be elected annually, shall constitute an executive committee who shall have authority to pass on and decide all matters affecting the interest of members or applicants for membership, which may arise and require action in the intervals between the meetings.

The secretary shall keep an account of the expense incurred in conducting the correspondence and in carrying out any other orders of the association and the same shall be prorated among the members and paid annually.

MEETINGS.

This association shall meet annually at the time and place of meeting of the American Medical Association.

GENERAL PROVISIONS.

Since advertising in medical journals is the principal means the members of this association have in bringing their work to the notice of the profession and since it is unsatisfactory and unfair for men who have won an honorable place in the profession by conscientious and diligent study and by honorable and fair dealing to be brought into competition, on terms of equality, with irregular and disreputable institutions, it is done when the advertisements of such disreputable institutions appear in the pages of the same journals containing the cards of institutions of good standing, therefore the members of this association pledge themselves not to run an advertisement in any medical journal or medical directory which admits to its pages the advertisements of irregular institutions.

Any institution or physician guilty of any of the following acts shall be deemed irregular for the purposes of this organization.

1. Use of a secret remedy or secret form of treatment.
2. Publishing testimonials of cures.
3. Guaranteeing cures.
4. Sending out prepared or home treatments for drug addictions.
5. Paying commissions to physicians for sending patients.
6. Advertising in the lay press in any manner except the insertion of a simple card giving the name and location of the institution or physician, class of patients treated, office hours of the superintendent or medical director and telephone number; provided, however, that the publication of such notices shall be confined to the lay press of the county in which the institution or physician is located.

[*Explanatory Note.*—The reason for each of the provisions above given would seem sufficiently clear, except probably the fourth. To those who have not given attention to such matters it might seem that to prohibit the sending out of home treatments for the drug addictions would be an unreasonable restriction and one that would interfere with the natural rights of individuals and of physicians, but that is not the purpose of the rule. The reason for such restrictions is this: In almost every instance remedies advertised as home cures for the morphia and other drug addictions are merely some concealed form of opiate. It is not difficult to switch the drug user from his morphia or other opiate on to the "cure," which he is assured is merely a harmless tonic. This assurance he accepts as true and under the belief that he has been freed from his drug slavery and in the buoyancy and hope that such a deliverance would bring, he writes glowing testimonials of his cure while still under the influence of the supposedly harmless tonic. When he attempts to leave off this tonic, he finds that he is totally unable to do so, in fact that he is as much a slave to the "cure" as he was to his original drug, and that now, instead of being able to buy his drug supply in the open market at a reasonable price, he is compelled to send ten or more dollars per month to his home cure vendor for his drug supply, as he can not readily leave it off and resume his former drug. These "cures" usually contain a combination of narcotics by the use of which the victim acquires a double or triple addiction instead of the single one which he had before the use of such "cure." These home treatments do not really cure the morphia or other drug addiction. This fact is known to their vendors as well as to us, therefore we are compelled to conclude that one who continues to advertise and send out such a "cure" does so with fraudulent intent, and is, therefore, unworthy of association with gentlemen, and should not be allowed to practice his deception on unsuspecting public by using space in the columns of medical journals.]

Marriages

W. H. BURKE, M.D., Prairieburg, Iowa, to Miss Dolan, recently.

WILLIAM H. BUTTRAM, M.D., to Miss Cora Tipton, both of Niota, Tenn., recently.

W. J. WEST, M.D., Knoxville, Tenn., to Miss Alice V. Naylor of Little Rock, Ark., March 1.

WILLIAM M. COOLEY, M.D., to Miss Ella Victoria Engstrom, both of Peoria, Ill., February 21.

GEORGE LAMB BUST, JR., M.D., to Miss Adelaide Richardson, both of Brooklyn, N. Y., February 27.

WILLIAM JESSE JENNINGS, M.D., to Miss Sarah Tillman Flowers, both of Biakely, Ga., March 6.

SCHUYLER COLFAX GRAVES, M.D., Grand Rapids, Mich., to Miss Caroline E. Launt of Walker Township.

HARRY F. RUEL, M.D., to Miss Clara Sander, both of Le Mars, Iowa, in Sioux City, Iowa, February 26.

FRANK THOMAS RIDLEY, M.D., Frederick, Va., to Miss Nellie Morris Godwin of Charlottesville, Va., March 14.

A. LEO FRANKLIN, M.D., Cumberland, Md., to Miss Lelia Weston Jordan at Charlestown, W. Va., March 8.

H. B. JOHNSON, M.D., Pomona, Kan., to Miss Agnes Charlotte Thesrup of Williamsburg, Kan., March 6.

RALPH WALDO LOBKENTINE, M.D., New York City, to Miss Anne Munroe Williams of Ocala, Fla., at Flushing, N. Y., March 8.

Deaths

Charles Augustus Lindsley, M.D., one of the foremost sanitarians of America, died suddenly at his home in New Haven, Conn., March 9, aged 79. His death was due to heart disease, from which he had suffered for several years. He was born in Orange, N. J., Aug. 19, 1826; was graduated from Trinity College, Hartford, with the degree of A.B. in 1849, and received his M.A. degree in 1852. He studied medicine at the College of Physicians and Surgeons in the City of New York and in the Medical Institution of Yale College, New Haven, and was graduated from the latter institution in 1852. From 1860 to 1883 he was professor of materia medica and therapeutics at this institution; from 1883 to 1897, professor of theory and practice of medicine, and thereafter emeritus professor; dean of the faculty from 1863 to 1885, and lecturer on sanitary science from 1898 to 1899. He was attending physician at the Connecticut State Hospital from 1864 to 1876, and secretary of the General Hospital Society of Connecticut from 1865 to 1877. He was health officer of New Haven from 1874 to 1888.

His society affiliations were numerous; he was president of the New Haven Medical Association in 1877; president of the New Haven County Medical Association, 1875-1876; president of the Connecticut Medical Society in its centennial year, 1892. For many years he was a member of the American Medical Association, and its vice-president in 1890, and orator in State Medicine in 1892; vice-president of the American Public Health Association in 1877, and president of the International Conference of State and Provincial Boards of Health from 1893 to 1895. He was also an honorary member of the state medical societies of New York and New Jersey.

He was made a member of the Connecticut State Board of Health in 1878, and has been its secretary and executive officer since 1884. He has been vice-president and president of the New Haven Dispensary from the time of its foundation in 1872. He has been a prolific writer on subjects connected with public health and sanitation. His greatest work was as secretary and executive officer of the State Board of Health, which under his wise administration has become one of the most noteworthy in the United States. Dr. Lindsley was also a pioneer in the investigation of typhoid fever epidemics in the state.

Samon R. Hewett, M.D. Rush Medical College, Chicago, 1867; local surgeon at Charles City, Iowa, of the Chicago, Milwaukee & St. Paul Railway; health officer of Charles City; a member of the International Association of Railway Surgeons, Austin Flint-Cedar Valley Medical Society, and for many terms president of the Floyd County Medical Society; assistant surgeon in the United States Marine-Hospital Service during the Civil War, died at his home in Charles City, March 4, from heart disease, aged 75.

Henry Emory Rothe, M.D. College of Physicians and Surgeons in the City of New York, 1880; deputy county physician of Hudson County from 1879 to 1895; hospital steward during the Civil War; treasurer of Harrison, N. J., and assessor of the Third Ward of Newark for nine years, died at his home in Harrison, Newark, March 4, from cerebral hemorrhage, after an illness of six days, aged 65.

Lewis Williams, M.D. Miami Medical College, Cincinnati, 1857, a member of Grant County (Ind.) Medical Society, died at his home in Marion, March 5, after a long illness from senile debility, aged 89. The medical society held a special meeting March 7, passed resolutions regarding the death of Dr. Williams, and voted to attend the funeral in a body.

John F. Dyer, M.D. Medical Department of Western Reserve University, Cleveland, 1902; a member of the American Medical Association, the North Texas Medical Society, and president of the Lamar County Medical Society in 1904; formerly a practitioner of Chicota, Texas, died at his home in Mineral Wells, Texas, Nov. 23, 1905, aged 39.

Henry T. Calkins, M.D. University of Louisville, Medical Department, 1869; said to have been the oldest practitioner in northern Michigan; a member of the American Medical Association and of the Michigan State Medical Society; division surgeon of the Grand Rapids & Indiana Railroad; health officer of Petoskey, Mich., died suddenly at his home in that city, from heart disease, March 5.

Charles Boaz Whitfield, M.D. College of Physicians and Surgeons in the City of New York, 1871; member and sometime president of the Marengo County (Ala.) Medical Society; a veteran of the Civil War, was found dead in the road about five miles from his home in Demopolis, Ala., March 1, supposedly from heart disease, aged 67.

James M. Selfridge, M.D. Jefferson Medical College, Philadelphia, 1856; one of the founders of Fabiola Hospital, Oakland, Cal.; attending physician to the State Institution for the Deaf, Dumb and Blind from 1872 to 1878, died at his home in Oakland, March 4, from cancer, after an illness of several years, aged 81.

Arthur R. Cobb, M.D. Hahnemann Medical College, Philadelphia, 1891, of Philadelphia, died in the Hahnemann Hospital in that city, March 2, from injuries received as a result of jumping from the window of a cottage in Cape May, N. J., February 17, while suffering from delirium consequent on overwork, aged 35.

R. C. Volker, M.D. Central College of Physicians and Surgeons, Indianapolis, 1872, formerly medical director of the St. Louis, Iron Mountain & Southern Railway, and in charge of the railway hospital at Fort Smith, Ark., died at his home in St. Louis, February 22, after an illness of six months, aged 67.

Martyn Taylor, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1852; one of the oldest practitioners of Scioto County, Ohio; acting assistant surgeon in the Army during the Civil War, died at his home in Sciotoville, March 3, after an illness of several weeks, aged 78.

Frank L. Wisdom, M.D. New Orleans School of Medicine, 1860, captain and surgeon in the Confederate service during the Civil War, and chief of staff at the Division Hospital, Brunswick, Ga., in 1861, died suddenly at his home in Texarkana, Texas, March 1, from heart disease, aged 70.

Ira H. Gillum, M.D. Rush Medical College, Chicago, 1874; a veteran in the Civil War; a member of the Indiana legislature; chairman of the Iroquois County (Ill.) board of supervisors, and alderman of Milford, Ill., died at his home in that city, March 7, from cerebral hemorrhage.

John Harris Pettie, M.D. Harvard University Medical School, Boston, 1897, of Boston, died at the home of an acquaintance in Newton Highlands, Mass., from general collapse, due to worry over the publicity attending his connection with the "dress suit-case mystery," March 5.

John Phillips, M.D. Medico-Chirurgical College, Philadelphia, 1904, of Lickdale, Pa., formerly resident physician in the Allentown Hospital, died in the Lebanon Hospital, February 23, from septicaemia following a mastoid operation, after an illness of three weeks, aged 28.

David D. Richardson, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1871, chief resident physician of the State Hospital for the Insane, Norristown, Pa., died suddenly from heart disease, in his apartments at the hospital, March 6, aged 60.

John P. Cotton, M.D. Medical College of Ohio, Cincinnati, 1842; a member of the American Medical Association, and for more than sixty years a practitioner of Charleston, W. Va., died at his home in that city, March 3, after a lingering illness, aged 85.

John Eaton Pugh, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1853, of Albemarle, La., surgeon in the Confederate service during the Civil War, died at the home of his son-in-law, near Napoleonville, La., February 27.

James L. Jones, M.D. Montana State Board, 1889; coroner of Beaverhead County for two terms and county physician in 1892, died at his home at Wisdom, Mont., February 25, from heart disease, after a prolonged illness, aged 48.

C. R. Mason, M.D. Cincinnati College of Medicine and Surgery, 1870, one of the wealthiest practitioners of Hartford City, Ind., was found dead in his office, March 7, aged 60.

Simon G. Miller, M.D. Bellevue Hospital Medical College, New York City, 1874, of Francis, Fla., was run over by a train near his home and instantly killed, January 17, aged 59.



C. A. LINDSLEY, M.D.

Andreas A. Naegeli, M.D. Medical College of Indiana, Indianapolis, 1885, one of the foremost practitioners of Sibley County, Minn., died at his home in Gibbon, from dilatation of the heart, March 3, after an illness of only a few hours, aged 64.

J. P. Bowers, M.D. University of Louisville, Medical Department, 1872, of Fort Worth, Texas, committed suicide at Sanger, Texas, by cutting his throat, February 27, while despondent from ill health and financial reverses, aged 61.

Robert C. Hutchinson, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1880, surgeon of the American line steamship *St. Louis*, died at sea, from pneumonia, February 27, after a short illness, aged 49.

Joseph A. Tipton, M.D. New York University, New York City, 1860, surgeon both in the Confederate army and navy during the Civil War, died at his home in Roanoke, Va., March 5, after a long illness, aged 69.

Sanford W. Adams, M.D. University and Bellevue Hospital Medical College, New York City, 1899, police surgeon of Mount Vernon, N. Y., died at his home in that city, March 7, after an illness of three months, aged 29.

Stuart A. Watson, M.D. University of Louisville, Medical Department, 1873, a prominent practitioner of Bastrop County, Texas, died at his home in Elgin, March 3, from pneumonia, after an illness of eight days.

Matthew Wallace, M.D. University of the Victoria College, Coburg, Ont., 1881, died at his home in Toronto, March 3, from malignant disease, for which an operation was performed in September last, aged 57.

George W. Williams, M.D. Missouri Medical College, St. Louis, 1848, one of the oldest practitioners of Missouri, died at his home in Farmington, March 2, from senile debility, after a short illness, aged 87.

Isaac Newton Brown, M.D. Eclectic Medical Institute, Cincinnati, 1860, a surgeon in the Civil War, died at his home in Ironton, Ohio, March 1, from long-standing disease of the throat, aged 66.

Thomas A. Davis, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1851, of Selma, Ala., died in Tuscaloosa, Ala., February 27, from influenza, after a short illness, aged 82.

Charles H. Witham, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1875, a practitioner of Boston, died at his home in Cambridge, Mass., Dec. 24, 1905, aged 51.

Joseph Torkington, M.D. Jefferson Medical College, Philadelphia, 1885, died at his home in Pawtucket R. I., February 27, from pneumonia, after an illness of one week, aged 56.

Theodore F. Laing, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1883, of Locust Grove, Ga., died at a private sanitarium in Atlanta, Ga., March 2, aged 61.

Solomon Baird Wolfe, M.D. Shelby Medical College, Nashville, Tenn., 1862, of New York City, died suddenly from heart disease in his office, Dec. 14, 1905, aged 61.

Alexander P. Landry, M.D. Harvard University Medical School, Boston, 1870, died at his home in Eel Brook, Yarmouth, N. S., Nov. 6, 1905, after an illness of six weeks.

Elmer W. Heltman, M.D. Toledo (Ohio) Medical College, 1886, an oculist of Toledo, died at his home in that city, March 3, after an illness of six months, aged 44.

William Stross, M.D. Miami Medical College, Cincinnati, 1903, died recently at his home in Cincinnati from chronic nephritis after a prolonged illness, aged 48.

George W. Pleasanton, M.D. Hahnemann Medical College, Philadelphia, 1887, died suddenly at his home in Milford, Del., February 26, from heart disease, aged 45.

Miles Laha, M.D. Hospital College of Medicine, Louisville, 1893, died at his home in New Haven, Ky., February 21, from tuberculosis, after a long illness, aged 48.

William E. Swiler, M.D. Jefferson Medical College, Philadelphia, 1857, died at his home in Mechanicsburg, Pa., March 8, from cerebral hemorrhage, aged 73.

Vandy M. Neal, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1860, died at his home in Hillsboro, Miss., December 19, aged 70.

W. H. Burke, M.D. Rush Medical College, Chicago, 1902, of Prairieburg, Iowa, died March 1 from pneumonia, after an illness of less than two weeks.

Mabel Wells, M.D. Medical Department of the Johns Hopkins University, Baltimore, died at her home in Wellesley, Mass., March 3, aged 32.

Richard H. Kenning, M.D. College of Physicians and Surgeons, Manitoba, Winnipeg, 1883, died at his home in Chicago, March 6, aged 58.

James Macdonald, M.D. Harvard University Medical School, Boston, 1864, died at his home in Boston, March 8, from heart disease, aged 73.

William H. McCormick, M.D. Jefferson Medical College, Philadelphia, 1864, died at his home in Cumberland, Md., March 6, aged 80.

David M. McFall, M.D. Jefferson Medical College, Philadelphia, 1837, died at his home in Nashville, Tenn., Dec. 20, 1905, aged 72.

James Gates M.D. University of Louisville, Medical Department, 1882, died at El Paso, Texas, Oct. 22, 1905, aged 71.

Nelson H. Church, M.D. Rush Medical College, Chicago, 1869, died March 5, at his home in Chicago, aged 63.

Eugene S. Atwood, M.D. Rush Medical College, Chicago, 1877, died at his home in Chicago, March 2.

Deaths Abroad.

Max Nitze, M.D., professor of urology at Berlin and inventor of the cystoscope, died suddenly, February 22, aged 58. The twenty-fifth anniversary of this invention was celebrated in March, 1904, when honors were showered on Nitze, who was then only a privat docent.

Leon Colin, M.D., formerly inspector general of the French military sanitary service, and president of the Académie de Médecine, died recently at Paris.

Book Notices

MANAGEMENT OF A NERVE PATIENT. By A. T. Schofield, M.D. Author of "The Unconscious Mind," "The Force of Mind," "Unconscious Therapeutics," etc. Cloth. Pp. 267. Price, \$1.50. Philadelphia: P. Blakiston's Son & Co., 1906.

This little volume is largely in the same line as that of Dr. DuBois (which we reviewed March 10, page 744), and contains a valuable amount of useful suggestions and hints. The author does not discard medical and physical treatment, however, to the same extent or reject hydrotherapy and electricity as does DuBois. These all play a more or less prominent part in his therapy, and he considers that mental treatment has in it the danger of leading the specialist to consider it too much of a cure-all in itself. Every curative agent, he says, has more claimed for it than it deserves, and this is pre-eminently true of mental action in disease. He does not enter much into the psychology, but has much to say about the unconscious mind and thinks that certain individuals possess a sort of healing gift; he thinks this may be explained by some action on this unconscious mind. However one may view this as a vagary or otherwise, the main part of Schofield's work is sensible and clear and can be profitably read by the medical practitioner. In this country legitimate psychotherapeutics is not necessarily in discredit, however it may be in England; that country, he says, is so overrun with an invasion of American mystics (Eddies?) that it is hard to obtain for psychotherapy a respectful hearing among medical men. It would be a good thing, however, if a little more systematic instruction on these points in psychics therapeutics were included in the medical curriculum, both here and elsewhere.

A TEXT-BOOK OF PHARMACOLOGY AND THERAPEUTICS, or the Action of Drugs in Health and Disease. By A. R. Cushny, M.A. M.D. Fourth Edition. Thoroughly Revised. Illustrated with 53 Engravings. Cloth. Pp. 752. Price, \$3.75 net. Philadelphia: Lea Brothers & Co., 1906.

This work has been revised to conform with the new Pharmacopoeia and seems to be confined to pharmacopoeial preparations. The general arrangement of the text is the same as in previous editions. Part I is devoted to a consideration of organic substances acting locally. Part II takes up organic substances which act after absorption, and considerable space is occupied by discussion of the various anesthetics. Alcohol is mentioned under this head and attention is directed to the dangers attending the use of wood alcohol. In the chapters on ether and chloroform reference is made to Embley's researches, showing that fatal arrest of the heart's action frequently occurs at the beginning of the anesthesia through excessive inhibitory action. Acetanilid, though official in the U. S. Pharmacopoeia,

under this name, is referred to as antifebrin, the name by which this drug is known in the British Pharmacopœia. Part III deals with the alkalies, alkaline earths, acids and allied bodies. Part IV is devoted to a consideration of the heavy metals, and in Part V ferments, secretions and toxalbumins are discussed. Part VI takes up menstrua and mechanical remedies, and the book concludes with a classification of drugs according to their therapeutic action. Cushman's textbook has long been recognized as a standard and the new edition will add to the prestige it had already earned.

SURGICAL ASPECTS OF DIGESTIVE DISORDERS. By J. G. Mumford, M.D., in Association with A. K. Stone, M.D. Cloth. Pp. 385. Price, \$2.50. New York: The MacMillan Co., 1905.

The title of this book does not suggest its real contents. The first chapter describes "ancient conceptions of the digestive organs." It is a brief history of our knowledge of these organs. The second is an account of methods of clinically studying diseases of the stomach, such as physical, chemical, microscopic and x-ray examinations. The chapters following, however, are the ones which give greatest value to the book. The authors are to be congratulated on having written a readable and unusually instructive book. It is not a systematic treatise on diseases of digestive organs, but a collection of new facts and well-known ones bearing on the natural course and results of certain diseases and on the relative success of different kinds of treatment. It is quite as interesting and instructive to the physician as to a surgeon. The following titles of succeeding chapters will best explain the scope of the book: "The Stomach", "Dilatation of the Stomach Treated Without Operation", "Ulcer of the Stomach and Duodenum", "Operative Intent of Non-Malignant Disease of the Stomach", "Cancer of the Stomach", "The Bile Passages", "Surgery of the Bile Passages", "The Pancreas", "Abdominal Ptosis", "The Appendix Vermiformis."

There is in these chapters much statistical matter which is new, well analyzed and important. The judgments of the authors are conservative and rarely deserve criticism.

REFRACTION, Including Muscle Imbalance and the Adjustment of Glasses. By R. S. Gifford, A.M., M.D., and A. E. Ivershoff, M.D. Cloth. Pp. 144. Price, 1.50 net. Philadelphia: Boerliche & Tafel, 1906

Although within recent years there have been many publications dealing with the problems of refraction, muscular insufficiency and the correct adjustment of lenses for ocular purposes, we believe that none of them is better suited to the beginner than this small work. It is sufficiently illustrated with good, clear cuts, and the literary portion of it is everything that one could desire. No doubt the authors might easily have added to (or, perhaps, padded) their small work, but in the absence of such elaboration we believe that it will have a wider sale than many a larger treatise. If we were disposed to criticize the work from the textbook standpoint the principal objection we would raise is to the small space devoted to skiascopy. That important objective test is not as carefully or as fully considered as it ought to be. On the whole, however, the book is a very useful compendium and can be safely recommended to students of elementary ophthalmology.

MANUALE DELLE MALATTIE DELL'OCCHIO Ad Uso Degli Studenti E Del Medico Pratico Traduzione Italiana Sulla Quarta Edizione Americana. Con note ed Aggiunte del Dr. Edmondo Trombetta and Dr. Carlo Enrico May. Con 360 illustrazioni originali e 21 Tavole con 70 figure colorate. Cloth. Pp. 555. Price 8 lire. Turin: S. Torino: Unione Tipografico-Editrice, 1906.

This is the Italian translation of Dr. C. E. May's well-known work on diseases of the eye, with notes by Dr. Trombetta, instructor in ophthalmology in the University of Turin. It does not differ in any essential respect from the original work, so well known to American students of ophthalmology. As stated in the Italian edition, a number of additions have been made to this textbook, of which Italian readers will reap the benefit. We have reviewed the various editions of this excellent work of Dr. May's and have nothing to add to what has been previously said, except that we have reason to congratulate ourselves that the writings of American authors are beginning to be better appreciated in foreign countries than they have been in times past. We hope and believe that the Italian edition will receive as cordial a welcome as the four American, one British and the German editions of this popular manual.

Miscellany

Epidemics of Yellow Fever in Maryland.—At the last meeting of the General Alumni Association of the University of Maryland, Dr. James Carroll read an interesting paper on this subject. He referred first to the fact that Dr. Nathaniel Potter, a pupil of Dr. Benjamin Rush, and first professor of medicine in the university, held the view that yellow fever was not directly contagious. Dr. Potter believed that he was the only person in America who held that opinion at that time and prepared to defend his belief in an inaugural thesis to be read at the commencement exercises of the University of Pennsylvania. He was dissuaded from this, however, on the grounds of propriety and expediency. Dr. Carroll said that on account of its importance as a seaport, Baltimore must have been the seat of many outbreaks of this disease, yet the only recorded epidemics occurred in the years 1794, 1797, 1800 and 1819. He called attention to the important fact that all the epidemics originated at Locust Point or along the wharves and can be traced directly to the shipping. This is not to be wondered at, as the city was in constant communication with the West Indies. In these days yellow fever was frequently confounded with malaria, and it was sometimes contended that the two diseases were identical. The general restriction of the disease to certain localities and the fact that persons who visited these localities even for only a few hours proved that the disease was one of locality. It was also observed that if the wind blew strongly from the infected district toward the city, within a few days yellow fever appeared in the city. From this it was concluded that the poison must exist in the atmosphere and must be transported by the wind. It was recorded by a Baltimore physician that during an epidemic mosquitoes became an intolerable pest, while only a short time before no mosquitoes were observed. This observation, Dr. Carroll states, agrees with our present knowledge of the facts that the yellow-fever carrying mosquitoes can be conveyed by vessels from one place to another, that in the warmer seasons they breed on shore and that they become infected only after feeding on a patient. This also explains why shipping localities were infected while other places equally favorable for the development of the disease escaped. In the epidemic of 1794 Dr. Drysdale reported that he saw his first case August 7, at Bowley's wharf, and that on August 14, 20, 22 and 23, he saw five additional cases at the same place. Other interesting references to this epidemic were published by Dr. John B. Davidge. Three physicians investigated the cases reported by Dr. Drysdale and stated that the disease was "the common epidemic of the season," "the bilious remittent fever." The outbreak of 1819 followed the arrival of an infected ship from Havana. The fever appeared in July and persisted till the end of October. Among the records of this epidemic are letters and other documents published by order of the mayor, and containing the actual experiences of several physicians. These records show a remarkable unanimity of belief that yellow fever was not contagious.

Foundation of a Medical Society for Demonstrations Only.—At the meetings of most medical societies the demonstration of patients and specimens is secondary in importance to the discourses. When too much attention is devoted to them, the scientific papers are belated. A number of physicians in Berlin have organized an informal society for demonstrations only, each demonstrator being limited to ten or fifteen minutes and only five minutes being allowed for discussion at the time. When it is desired to have discussions exceed this limit they must be transferred to the arena of the already established medical societies. The first meeting of the new organization was held in January. Among others, Brieger exhibited specimens of syphilitic lesions of the liver, simulating tumors, while Karewski presented some patients with these lesions, incorrectly diagnosed at first. Albu exhibited cases of stenosis of the pylorus and Pinkus demonstrated the *Spirochaeta pallida*. The society bears the euphonic name of the "Zwanglose Demonstrationsgesellschaft." The description in the *Allg. Med. Ct.-Ztg.* states that the meetings are held at the amphitheater, Ziegelstrasse 18.

Toxicity of Bile.—Meltzer and Salant state that according to the present almost universally accepted view, bile contains a toxic element which is capable of producing nervous depression, coma and paralysis, but does not contain any element which can produce excitation and convulsions. They conducted a series of experiments, however, which proved that, contrary to this generally accepted view, the bile does contain a tetanic element, or an agent which causes increase of excitability of the nervous system. The experiments demonstrated that bile from the common duct of many rabbits causes marked hyperesthesia and tetanic attacks when injected into frogs; stagnant bile (as in the gall-bladder) invariably produces coma and paralysis; the depressive and exciting elements of the bile are mutual antagonists, the effect of both, when simultaneously present, being that of an algebraic sum; the depressive element, when present in a highly effective dose, is the stronger of the two, while the tetanic element becomes effective apparently in a dose far below that which constitutes the minimum for the depressive element.

Death from Thirst.—Dr. W. J. McGee, director of the St. Louis Public Museum, formerly chief of anthropology of the Louisiana Purchase Exhibition, discussed this subject before the St. Louis Medical Society. He has recently made observations in the arid regions of Arizona, and he reported the case of a Mexican who was lost in the desert without drink for eight days. He traveled 108 miles in a stuporous condition and, half dead, finally stumbled into Dr. McGee's camp, where he was revived after great difficulty. Dr. McGee called attention to thirst as a disease, treating of physiologic thirst, thirst beyond physiologic limits and thirst in extremis. The last might be called living death; death of the tissues takes place from below upward, owing to the impoverished state of the blood and to want of circulation. The victim's toes drop off and breaks in the skin do not bleed because of the non-fluid state of the blood.

Suprarenal Preparations in Treatment of Hemorrhagic Purpura.—M. Labbé of Paris has recently reported a case of severe "myeloid purpura." No treatment proved effectual until a suprarenal preparation was given. Even 4 gm. of calcium chlorid a day failed to prevent the appearance of the severe hemorrhages. They were apparently uninfluenced until a small amount of a suprarenal preparation was injected subcutaneously every day. The hemorrhages ceased at once from the first injection. The aspect of the tissues also changed, the skin became pale and exsanguinated, and it was difficult to draw blood from the finger tip. The suprarenal preparation evidently induced intense vasoconstriction. The results suggest that the trouble in purpura is not so much in the blood itself as in the vessels.—*Bull. de la Soc. Méd. des Hôp. de Paris*, Dec. 28, 1905.

The Doctor.—In the name of thousands of unbroken homes in which midnight hand-to-hand fights with death have been fought and won; in the name of thousands of lives rescued from abnormality and made useful; in the name of unshed tears and forestalled pain and baffled death—I doff my hat to-day to The Doctor. May he never have use for his own medicine. May each moment of pain he has saved others shine in the crown of his life like a bright star. May the children to whom he has saved parents and the parents to whom he has saved children take time to acknowledge the doctor's worth. May his patients pay him his bill. And in the inevitable hour may a certain grim adversary recognize a noble foe and deal gently with the doctor.—W. J. C., in *Detroit News*.

Campaign Against Tuberculosis in Spain in the Seventeenth Century.—The records of the city of Valencia bear a decree dated 1698 demanding that physicians must inform the municipal authorities when they encounter a case of consumption, and that the clothing and bedding used by a consumptive shall be burned after his death, with the exception of metal articles. A large fine is imposed for buying articles known to have been used by deceased consumptives, and also for neglect to declare the cases to the authorities. The decree provides for the public proclamation of its provisions in all parts of the town by the town crier. The fac simile of the quaint wording and seal is given in the *Siglo Medico* No. 2641, 1904.

Queries and Minor Notes

COMPOSITION OF CASTORIA.

McBAIN, MICH., March 1, 1906.
To the Editor:—Two years ago I was called to attend a baby aged one week. The father had given it, so he said, only half a teaspoonful of castoria. When I saw the child it was dying, and breathed its last half an hour later. A few weeks ago I was called to attend a child of 10 months, suffering from diarrhea. The parents gave hardly any answer to questions. The child was comatose, the pupils did not react to light, pulse was 132, and the body was cold. The parents said that the child had had innumerable pain-sages. Two days later, when the child was better, I learned that they had given it five teaspoonfuls of castoria within a short time. I would like to know the ingredients of castoria. Can you give me this information?

J. G. REINBERG, M.D.
ANSWER.—According to the patent, the formula is as follows: To 125 pounds of senna leaves add 35 gallons of water at 65° C., in which has been dissolved 48 ounces of sodium bicarbonate. Exhaust the senna by percolation until 240 pounds are obtained. In this dissolve 210 pounds of sugar and 4 ounces of Rochelle salts, then add spirits of gaultheria, 18 pints, and spirits of peppo, spirits of chenopodium (wormseed), spirits of peppermint and spirits of anise, of each 2 ounces.

CHARITIES AND THE COMMONS.

TISKILWA, ILL., March 10, 1906.
To the Editor:—In your issue of March 10, 1906, under title of "Public Instruction in Sexual Hygiene," page 729, you speak of the periodical *Charities and the Commons*. Where can I get this paper?

C. F. HOANER.
ANSWER.—*Charities and the Commons* is a weekly review of philanthropy and social advance, published under the Charities Publication Committee of the New York Charity Organization Society, 105 East 22d St., New York, and edited by Edward T. Devine, Graham Taylor and Paul U. Kellogg. The first weekly issue of each month appears as an enlarged magazine number. Subscription, two dollars a year. Single copies, ten cents each.

DISCUSSION WANTED ON CONTRACT PRACTICE.

YORK, PA., March 6, 1906.
To the Editor:—I would like to have your opinion relative to some important questions that threaten the dignity and usefulness of the medical profession. Recently I was appointed chairman of a committee "to investigate the propriety of contract practice and to make a report at the next regular business meeting of the York County Medical Society as to what forms of contract practice this committee considers consistent, and what forms inconsistent with the Principles of Ethics of the American Medical Association." Is life insurance work contract practice? Is any or all of it, mere inspections for twenty-five cents, and examinations for which from three to five dollars are paid, consistent with the Principles of Ethics of the American Medical Association? Is there anything inconsistent in the contract practice of railroad surgeons? Likewise of physicians who accept contract work of operators of mines and factories? Also of physicians who accept temporary contracts of construction contractors who employ foreign labor in the construction of railroads, trolley lines, reservoirs, sewer systems, etc.? What would you say of physicians who accept a contract to attend members of clubs and secret organizations for \$1.50 a year, or \$2 a year per member, and do all the work in said member's family, except to attend labor cases and venereal diseases? These questions are beginning to assume serious aspect in some sections, and we believe they are better dealt with in the beginning than later. What action has been taken by other societies to prohibit contract practice which is inconsistent with the Principles of Ethics and derogatory to the dignity and usefulness of the medical profession?

G. E. HOLZAPFEL.
ANSWER.—The questions asked above are important ones, and have been asked by many other correspondents during the last three or four years. We have discussed the subject in some of its phases several times (see *THE JOURNAL*, Dec. 9, 1903, p. 1817; Jan. 27, 1906, p. 295; Feb. 17, 1906, p. 517; Oct. 29, 1904, p. 1222; Oct. 15, 1904, p. 1158; Sept. 10, 1904, p. 742; Oct. 8, 1904, p. 1067; Feb. 20, 1904, p. 548). But we believe that a discussion in our paper will be valuable. We would especially like to hear what societies have already acted on the matter, and what action was taken. It is a subject that has caused our profession in other countries serious trouble, and is already a difficult problem with us in many localities. The Principles of Medical Ethics refers to the matter only in a general way. Section 1 of Article VI says: "By the members of no profession are eleemosynary services more liberally dispensed than by the medical, but justice requires that some limits should be placed to their performance. Poverty, mutual professional obligation, and certain of the public duties named in Sections 1 and 2, of Chapter III, should always be recognized as presenting valid claims for gratuitous services; but neither institutions endowed by the public or the rich, or by societies for mutual benefit, for life insurance, or for analogous purposes, nor any profession or occupation, can be admitted to possess such privilege."

State Boards of Registration

COMING EXAMINATIONS.

GEORGIA Medical Examining Board (Regular), the Capitol, Atlanta, April 7. Secretary, E. R. Anthony, Griffin.

UTAH State Board of Medical Examiners, Salt Lake City. April 2. Secretary, R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, April 2-3. Secretary, Axel Martin, Phoenix.

CALIFORNIA Board of Medical Examiners, San Francisco, April 2-3. Secretary, Charles L. Tisdale, San Francisco.

IDaho State Board of Medical Examiners, Pocatello, April 3. Secretary, J. D. Conant, Jr., Genesee.

MONTANA Board of Medical Examiners, Senate Chamber, the Capitol, Helena, April 3. Secretary, William C. Riddell, Helena.

NORTH DAKOTA State Medical Examining Board, Grand Forks, April 3. Secretary, H. M. Wheeler, Grand Forks.

OHIO Board of Registration and Examination, State House, Columbus, April 3. Secretary, D. N. Kinsmann, Columbus.

MINNESOTA State Board of Medical Examiners, State Capitol Building, St. Paul, April 3-5. Secretary, O. E. Linjer, Minneapolis.

MISSOURI State Board of Health, Kansas City, April 3-5. Secretary, J. A. E. Adeock, Warrensburg.

RHODE ISLAND State Board of Health, State House, Providence, April 5. Secretary, Gardner T. Swarts, Providence.

KANSAS State Board of Medical Society, Little Rock, April 10. Secretary, J. P. Runyan, Little Rock.

MISSOURI State Board of Health, St. Louis, April 10-12. Secretary, J. A. B. Adeock, Warrensburg.

WEST VIRGINIA State Board of Health, Parkersburg, April 10-12. Secretary, H. A. Barbee, Point Pleasant.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, D. C., April 12. Secretary, William C. Woodward, Washington, D. C.

ILLINOIS STATE BOARD OF HEALTH, Great Northern Hotel, Chicago, April 18-20. Secretary, J. A. Egan, Springfield.

Maryland December Report.—Dr. J. M. Scott, secretary of the Board of Medical Examiners of Maryland, reports the examination held at Baltimore, Dec. 13-16, 1905. Of the 62 applicants who were present, 25 participated in the examination for the first time, of whom 16 were successful. Thirty-four applied for re-examination in branches in which they had previously failed; of these 15 were successful, working off all branches. Primary examinations require a general average of 75 per cent. Those re-examined are required to make 75 in each branch. Three took the examination for second year students and have completed studies in anatomy, chemistry, materia medica and physiology. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent |
|---|---|-------------------|----------|
| Johns Hopkins University | (1902) 89; (1903) 87; (1904) 88 | (1904) 83 | 83 |
| University of Pennsylvania | (1904) 80 | (1905) 80, 82, 88 | 85 |
| Howard University | (1902) 83; (1904) 82; (1905) 80, 80, 85 | (1905) 75 | 75 |
| University of Maryland | (1902) 83; (1904) 82; (1905) 80, 80, 85 | (1905) 75 | 75 |
| College of P. and S., Boston | (1905) 75 | (1905) 75 | 75 |
| Baltimore Med. Coll. | (1905) 92 | (1904) 84 | 84 |
| Woman's Med. Coll., Philadelphia | (1904) 84 | (1904) 84 | 84 |
| College of P. and S., Baltimore | (1904)* | (1904)* | 84 |
| Baltimore University | (1904)* | (1904)* | 84 |
| University of Maryland, 2 candidates (1900) * 3 | (1905)* | (1905)* | 84 |
| candidates | (1905)* | (1905)* | 84 |
| Maryland Med. Coll. | (1901) * (1902) * 2 candidates, | (1904) * | (1904) * |
| (1904) * (1905) * 84 | (1904) * | (1904) * | (1904) * |
| Baltimore Med. Coll. | (1904) * | (1904) * | (1904) * |
| George Washington University | (1904) * | (1904) * | (1904) * |

| College. | PASSED. | Year Grad. | Per Cent |
|--|------------------------------|---------------|----------|
| University of Maryland | (1904) 62; (1905) 58, 62, 63 | (1905) 61, 65 | 64 |
| Maryland Med. Coll. | (1905) 61, 65 | (1904) 64 | 64 |
| University of Pennsylvania | (1904) 64 | (1904) 64 | 64 |
| Georgetown University | (1904) 64 | (1904) 64 | 64 |
| Baltimore Med. Coll. | (1905) 61 | (1905) 61 | 61 |
| Maryland Med. Coll. (2 candidates) (1904), * 9 candidates (1905) * | (1905) * | (1905) * | (1905) * |

| College. | PASSED. | Year Grad. | Per Cent |
|-----------------------------------|--------------------------------|------------|----------|
| Baltimore University | (1899) * | (1903) * | (1903) * |
| University of the South | (1904) * | (1904) * | (1904) * |
| Christ Institute | (1904) * | (1904) * | (1904) * |
| University of Maryland | (1902) * 2 candidates (1905) * | (1905) * | (1905) * |
| Baltimore Med. Coll. | (1905) * | (1905) * | (1905) * |

* Re-examined, no percentage assigned.

† Graduates of this institution (the character of which is well known) was at first refused recognition by the board, but a writ of mandamus was sued out against it, and on a hearing and examination of the law prescribing what colleges should be recognized by the board of medical examiners, the court ordered that as this institution was legally incorporated, its graduates should be received by the Board of Medical Examiners of Maryland. The court ruled, furthermore, that under the law equipment, curriculum, hours of study, etc., could not be considered if the institution was legally incorporated; therefore the board was obliged to receive the graduates of this institution.

Virginia December Report. In the report of the examination held at Richmond in December, 1905, published in THE JOURNAL, Feb. 24, 1906, page 608, it is stated that a graduate of the Medico-Chirurgical College of Philadelphia failed. This is an error; it should have been the Medico-Chirurgical Department of Christ Institute, Baltimore.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending March 10, 1906:

Kirby-Smith, R. M., asst.-surgeon, advanced to rank of captain from February 28, 1906.

Appel, D. M., deputy surgeon-general, relieved from duty in the Philippines Division to take effect at such time as will enable him to comply with the order, and to proceed on transport sailing from Manila, P. I., after April 27, 1906, to San Francisco, where, on arrival, he will report by telegraph to the military secretary of the Army for further orders.

Wales, Philip G., surgeon, relieved from duty in the Philippines Division, and will proceed on transport sailing from Manila, P. I., after July 1, 1906, to San Francisco, where, on arrival, he will report by telegraph to the military secretary of the Army for further orders.

Whitmore, E. R., asst.-surgeon, relieved from duty at Fort Jay, N. Y., and ordered to Fort Warren, Mass., for duty.

Keefer, Frank R., surgeon, having reported at San Francisco, in compliance with orders heretofore issued, will proceed to the Presidio of Monterey, Cal., and report to the commanding officer of that post for duty.

Clayton, J. E., asst.-surgeon, granted 2 months' leave of absence, to take effect on being relieved from temporary duty at the United States Military Prison, Fort Leavenworth, Kansas.

Page, Henry, asst.-surgeon, on arrival at San Francisco, will proceed to Fort Leavenworth, Kansas, and report to the commandant of the United States Military Prison at that post for duty, and by letter to the commanding general, Department of the Missouri, relieving Captain Jere B. Clayton, asst.-surgeon.

Woodbury, Frank D., asst.-surgeon, advanced from grade of first lieutenant to that of captain, from March 6, 1906.

Shook, Jay R., asst.-surgeon, advanced from grade of first lieutenant to that of captain, from March 6, 1906.

Cose, William E., asst.-surgeon, advanced from grade of first lieutenant to that of captain, from March 6, 1906.

Kieffer, Chas. F., surgeon, sick leave of absence extended twenty days.

Stephens, Wm. N., asst.-surgeon, ordered to proceed from Fort Logan, Colo., to Fort D. A. Russell, Wyoming, for temporary duty.

Huggins, John B., asst.-surgeon, now at San Francisco, is assigned to duty in the Army Transport Service and will report in person to the medical superintendent of that service at San Francisco.

Mason, George L., dental surgeon, ordered to visit Key West Barracks, Fla., for three weeks; then Fort Morgan, Ala., for three weeks.

Wing, Franklin F., dental surgeon, left Fort Riley, Kansas, for duty at Fort Omaha, Neb.

Shellenberger, James E., contract surgeon, left Fort Brown, Texas, for duty at Fort Ringgold, Texas.

Keefer, Frank R., contract surgeon, left Fort Ringgold, Texas, for duty at Fort Bliss, Texas.

Wall, Francis M., contract surgeon, returned to Fort Oglethorpe, Ga., from leave of absence.

Trumbull, John M., contract surgeon, relieved from duty at Fort Trumbull, Conn., and ordered to Fort Terry, N. Y., for duty.

McMillan, Clemens W., contract surgeon, relieved from duty at Fort Terry, N. Y., and ordered to Fort Trumbull, Conn., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending March 10, 1906:

Pimmer, R. W., P. A. surgeon, detached from the Naval Recruiting Station, Kansas City, Mo., and ordered to the Naval Recruiting sub-station, St. Joseph, Mo.

McDonald, W. N., asst.-surgeon, ordered to the *Yankee*.

Schwerner, L. B., acting asst.-surgeon, ordered to the *Celtic*.

Dennis, J. B., surgeon, detached from the Naval Hospital, Pensacola, Fla., and ordered to the Naval Proving Grounds, Indian Head, Maryland.

Seaton, F. L., surgeon, detached from the Naval Hospital, Brooklyn, and ordered to the Naval Hospital, Pensacola, Fla.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending March 7, 1906:

King, W. W., P. A. surgeon, directed to report to the director of the Hygienic Laboratory for temporary duty.

Ward, W. K., asst.-surgeon, granted seven days' leave of absence from March 3, 1906.

Powder, J. B., acting asst.-surgeon, granted one month's leave of absence, from March 31, 1906, and excused for a further period, April 30 to June 30, 1906, without pay.

Grace, J. G., acting asst.-surgeon, granted leave of absence for one month, from March 26, 1906, and excused from duty without pay April 26 to June 30, 1906.

Wetmore, W. O., acting asst.-surgeon, granted four days' extension leave of absence, from February 26.

APPOINTMENTS.

Dr. W. R. Brinckerhoff was appointed director of the Leprosy Investigation Station at Molokai, Territory of Hawaii, February 2.

RESIGNATION.

Mathias Valodius resigned as pharmacist of the second class to take effect March 8, 1906.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service during the week ended March 9, 1906:

SMALLPOX—UNITED STATES.

California: Los Angeles, Feb. 17-24, 2 cases; San Francisco, 10 cases.
 District of Columbia: Washington, Feb. 24-March 3, 15 cases.
 Florida: Dade County, Feb. 17-24, 5 cases; Duval County, Feb. 10-24, 27 cases; Escambia County, Feb. 10-17, 1 case; Jackson County, Feb. 10-24, 15 cases, 1 death; Orange County, Feb. 17-24, 4 cases; Polk County, Feb. 10-24, 11 cases.
 Georgia: Augusta, Feb. 19-March 5, 9 cases.
 Illinois: Chicago, Feb. 24-March 3, 1 case.
 Indiana: Terre Haute, Feb. 24-March 3, 1 case.
 Kansas: Leavenworth, Feb. 1-28, 1 case.
 Kentucky: Covington, Feb. 24-March 3, 2 cases.
 Louisiana: New Orleans, Feb. 24-March 3, 2 cases.
 Maine: Biddeford, Feb. 24-March 3, 1 case; Portland, 1 case.
 Maryland: Baltimore, Feb. 24-March 3, 2 cases.
 Missouri: St. Louis, Feb. 1-24, 3 cases.
 Montana: Helena, Feb. 1-28, 1 case.
 Ohio: Canton, Feb. 17-24, 1 case; Cincinnati, Feb. 23-March 2, 8 cases.
 Tennessee: Nashville, Feb. 24-March 3, 2 cases.
 Utah: General, Jan. 1-31, 122 cases; Ogden, Jan. 1-31, 6 cases; Feb. 1-28, 4 cases; Salt Lake City, Feb. 17-24, 25 cases.
 Virginia: Roanoke, Feb. 1-28, 5 cases.
 Washington: General, Jan. 1-31, 17 cases.
 Wisconsin: Appleton, Feb. 24-March 3, 2 cases; Beloit, 2 cases.

SMALLPOX—FOREIGN.

Brazil: Pernambuco, Jan. 15-31, 36 cases.
 Canada: Queen's County, March 1, 2 cases; St. John, 1 case; Toronto, Feb. 17-24, 2 cases.
 Gibraltar: Feb. 18-25, 12 cases.
 Great Britain: Bristol, Feb. 10-17, 4 cases; London, 2 cases.
 India: Bombay, Jan. 31-Feb. 6, 3 deaths; Calcutta, Jan. 20-27, 102 deaths; Karachi, Jan. 28-Feb. 4, 12 cases, 4 deaths; Madras, Jan. 27-Feb. 2, 27 deaths; Rangoon, Jan. 20-27, 46 deaths.
 Mexico: Tuxpan, Feb. 10-27, 4 deaths.
 Turkey: Alexandretta, Feb. 3-10, 20 cases, 2 deaths.

YELLOW FEVER—FOREIGN.

Mexico: Vera Cruz, Feb. 11-17, 1 case.
 Panama: Bocas del Toro, Feb. 22, 1 case.

CHOLERA—FOREIGN.

India: Calcutta, Jan. 20-27, 44 deaths; Rangoon, 4 deaths.

PLAGUE—FOREIGN.

Brazil: Pernambuco, Jan. 15-31, 1 death.
 India: General, Jan. 20-27, 4514 cases, 3,747 deaths; Bombay, Jan. 31-Feb. 6, 81 deaths; Calcutta, Jan. 20-27, 30 deaths; Karachi, Jan. 28-Feb. 4, 16 cases, 14 deaths; Madras, Jan. 27-Feb. 2, 12 deaths; Rangoon, Jan. 20-27, 33 deaths.
 Japan: Formosa, Jan. 1-31, 48 cases, 38 deaths.
 Peru: Cholsica, Jan. 21-31, 2 cases, 1 death; Lima, 3 cases, 1 death; Mollendo, 2 cases, 3 deaths; Trujillo, 14 cases, 5 deaths.

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Boston, June 5-8.

Association of American Medical Colleges, Pittsburgh, Pa., March 19.
 Medical Association of the District of Columbia, Washington, April 3.
 Tennessee State Medical Association, Memphis, April 10.
 Medical Association of the State of Alabama, Birmingham, April 17.
 Medical Society of the State of California, San Francisco, April 17-19.
 Florida Medical Association, Gainesville, April 18.
 Medical Association of Georgia, Augusta, April 18.
 Mississippi State Medical Association, Jackson, April 18.
 South Carolina Medical Association, Columbia, April 18.
 State Medical Association of Texas, Fort Worth, April 24-26.
 Arizona Medical Association, Phoenix, April 24-25.
 Medical and Chirurgical Faculty of Maryland, Baltimore, April 24-26.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Meeting of the Middle Section, held in Chicago, Feb. 24, 1906.

DR. WILLIAM L. BALLENGER, Chicago, in the Chair.

Bullet Wound of Mastoid; Operation; Recovery.

DR. JAMES E. LOGAN, Kansas City, Mo., cited the case of a man, 48 years of age, who was shot in the right ear on Christmas day, 1896. The bullet, 38-caliber, passed through the fleshy portion of the right shoulder and entered the external meatus, lodging in the middle floor of the ear. Facial paralysis on the right side followed immediately. An operation was performed at once for the removal of the bullet, but without success. The middle ear began to suppurate while the patient was still in the hospital. The discharge stopped after six weeks. These attacks of suppuration came on at intervals, followed by periods of cessation, until 1902, after which time the suppurative process continued without interruption. Pain at times was very severe in the region of the ear and on the top of the head, but there were no other symptoms referable to the head, except the constant facial paralysis.

The man was operated on July 6, 1905, by Dr. Bisby, who was unable to locate the bullet. The suppuration process continued with increasing activity, and the patient was sent to Dr. Logan, Dec. 11, 1905. There was very little pain; temperature, 99.2 F.; pulse, 80; tongue coated. The tissues covering the mastoid and extending over the occiput were highly inflamed and a fistulous opening existed just beneath the lobe of the ear, allowing some of the discharge to pass through this channel. Much necrosis was evident, which accounted for the terrible odor emitted from the wound. On September 18 the mastoid was opened just back of the auricle and after thoroughly opening up the infected area and enlarging the meatus, the bullet was located in the floor of the middle ear. Extensive necrosis had taken place, so that all of the anatomic outlines were destroyed. The facial nerve had been severed and the bony roof of the antrum was absent, exposing a part of the dura. Necrosis of the external plate extended as far back as the emissary vein. Dead bone was removed wherever found. A noticeable feature was the excessive hemorrhage that occurred during the operation.

The wound was treated as in an ordinary radical operation. The horizontal incision was sutured and three stitches were taken in the upper portion of the post-auricular incision, the lower portion being left open. The cavity was thoroughly packed with iodoform gauze and the usual external dressing was applied. The patient made a rapid and uneventful recovery.

Anesthesia in Tonsil and Adenoid Operations.

DR. L. C. CLINE, Indianapolis, Ind., suggested the following points for discussion: 1. Is it necessary to use a general anesthetic in all or in the majority of operations for adenoids and tonsils? 2. If so, what is to be the choice of an anesthetic? 3. Can not these operations be done just as efficiently, with less shock and danger to life and postoperative complications, without a general anesthetic?

The author believes that in the majority of cases it is possible to do as clean and as thorough an operation with a local as well as with a general anesthetic. It is his custom to have two assistants. One takes the child on the lap or on the right knee, leaning forward against the patient's shoulder, grasping the body, holding arms of patient at sides, and feet off the floor, if possible. The second assistant grasps the top of the head over the right shoulder of the first assistant to hold the patient firmly. A tongue depressor is passed over the tongue, touching the pharyngeal wall, when the mouth will at once come wide open; the forceps or curette is then placed in position behind the palate. The tongue depressor is now withdrawn partially, if not completely, so that there is no obstruction to breathing. The majority of children, if held firmly in this position, will struggle but little. The curette is passed high up in the vault and moved about until the mass of the tonsil or adenoid is felt to be grasped. A firm sweep with a little rocking motion will remove the mass. A second and third sweep on the sides will complete the work. If forceps are used he usually finishes with the curette.

DISCUSSION.

DR. M. A. GOLDSTEIN, St. Louis, is a firm advocate of the quicker and simpler forms of anesthesia for removing adenoids and tonsils, such as nitrous oxid gas, etc. He does not consider that either the operation for adenoids or for the removal of the faucial tonsil has a sufficiently lengthy technic to place a patient under a general anesthetic. There is a certain amount of risk attending the use of a general anesthetic in these cases.

DR. JOS. C. BECK, Chicago, considers either the safest general anesthetic for the removal of tonsils and adenoids, particularly where the operator has to dissect out tonsils in children. In adults cocaine and adrenal preparations can be used.

DR. EDWIN PYNCHON, Chicago, said the selection of the anesthetic depends entirely on the age of the patient and the condition of the tonsils. In children, who can be held, and in whom the tonsils protrude, the patient should be held firm and rigid, so that the operator can go ahead and remove the tonsils. If the tonsil is buried and has to be removed by being dissected out carefully, a general anesthetic is necessary.

where a local anesthetic can be used he is in favor of it. He has used local anesthesia in children as young as 6 years for cautery dissection operations. For children over 13 and for adults he uses local anesthesia whenever possible.

DR. DERRICK C. VAIL, Cincinnati, believes in giving a general anesthetic for these operations, because most of them are major procedures and should, if possible, be done in hospitals.

DR. H. W. LOEB, St. Louis, indorsed what the essayist said in reference to the removal of ordinary adenoids and uncomplicated tonsils without general anesthesia. After an experience of ten years in the use of chloroform he has practically discarded it except in cases requiring careful dissection of the tonsils in young children.

DR. JOHN F. BARNHILL, Indianapolis, said that in the average case adenoids can be removed so simply and quickly, and painlessly, under local anesthesia, we are not justified in giving a general anesthetic. However, the personal equation is an important factor.

DR. GEORGE F. KEIPER, Lafayette, Ind., has never found it necessary to have complete anesthesia for the removal of tonsils or adenoids, because when there is complete general anesthesia the danger from the anesthetic itself is greatly increased.

DR. WILBUR W. BULLETTE, Pueblo, Colo., reported the death of a child, 5 years of age, from general anesthesia for the removal of adenoids and tonsils, and since then he has been a little chary in using a general anesthetic for these operations.

Indications for the Submucous Resection of the Nasal Septum.

DR. ROBERT LEVY, Denver, said that a condition which is very commonly responsible for difficult nasal respiration, reflex disturbances or naso-pharyngeal discharge, is the presence of exostoses and enchondroses from the septum. These are nearly always associated with more or less deflection, and it is frequently difficult to determine whether a large spur or ledge alone is sufficient to produce the symptoms, or whether the deflection is sufficient to materially increase the difficulty. In deciding on the treatment and the character of the operation indicated, one must not only determine the nature of the difficulty to be overcome, but must also consider the effect on the patient. Operations should be chosen, all things being equal, with a view to simplicity; the shorter the operation, the less shock and discomfort to the patient.

The window resection presents the ideal method for the correction of certain deformities of the septum. It has none of the elements of mutilation that other operations have, nor is it the simple incision of a structure which so frequently characterizes rhinological operations. A contraindication to all operations on the nasal septum is the existence of syphilis, either hereditary or acquired. He does not wish to detract from the importance and immense value that the submucous resection of the nasal septum offers. It is the most ideal operation for deflected septum. It is, however, an operation requiring a decided perfection of manual dexterity and perfect technic; it also requires more endurance and consequently produces more shock; therefore, before deciding on its performance, the symptoms should be weighed carefully and judgment exercised, so that it can not be charged against rhinologists that they operate because of some simple anatomic abnormality rather than because of definite disturbing symptoms.

Evils of Mouth-Breathing.

DR. C. P. LINHART, Columbus, Ohio, said that in trying to find the origin of many cases of chronic pharyngitis his suspicions were attracted to mouth-breathing as one of the common causes of this complaint. It is only in later childhood, subsequent to hypertrophy of the adenoid tissue in the vault of the pharynx and hypertrophy of the tonsils, that children begin to breathe through the mouth. Children are often housed in overheated and illy-ventilated rooms, and coddled in heavier wraps than are necessary for their health. These hothouse surroundings ill prepare them for the vigorous and sudden changes that they undergo in passing from warm rooms into the winter air. One of the probable evils of mouth-breathing in early life is the raising of the palatine arch by undue pressure from the inhalation of air through the mouth.

This excessive arching of the hard palate, which is also the floor of the nose, encroaches on the space in the nose. During development the septum naturally grows so as to fill the space allotted to it in the nose. That space is consequently narrowed in its perpendicular diameter, and it naturally follows that the septum will bend to one side or the other. When a person has a high arched palate one may expect either to find a deflected septum in the shape of a large curve, or a sharp kink or spur. The latter is nearly always seen along the line where the vomer joins the perpendicular plate of the ethmoid. There is no doubt that mouth-breathing, with its consequent high arching of the palate, is responsible for the peculiar shaping of the face seen in many children suffering from adenoids. It is also a factor in causing the protruding and misshapen teeth of the upper jaw.

Any obstructions should be removed by surgical means and the patient encouraged to breathe through the nose. Even later in life, when the bones of the mouth and nose are completely ossified, the openings of the nares can be enlarged by proper breathing exercises. The following axioms are recommended for keeping the nose in a normal condition: Cool living rooms; well ventilated sleeping rooms; cold bath, especially for the neck and spine; dry clothing; simple foods; regular habits; moderate daily exercise, and always breathe through the nose.

Treatment of Hypertrophic and Intumescent Rhinitis.

DRS. E. FLETCHER INGALS and STANTON A. FRIEDBERG, Chicago, drew the following conclusions: 1. The galvano-cautery, when properly used, offers one of the best, if not the best, methods for the treatment of the intumescent and hypertrophic forms of rhinitis. 2. The dangers of middle ear infection have been greatly exaggerated, not any case in the series, and only one among several thousand cauterizations, having come under their observation. 3. The liability to adhesion formation is not great, providing sufficient care is taken not to injure the opposite septal mucous membrane; and providing in cases in which the subsequent swelling is marked a probe be passed between the opposing surfaces in four or five days. 4. A 4 per cent. solution of cocaine, according to the formula published, is sufficient in the vast majority of cases to induce complete local anesthesia, three to six applications on a cotton-wound flat applicator being sufficient for this purpose. As a result of experience, especially in cases of marked intumescence, they believe that a spray of adrenalin or suprarenalin, grain $\frac{1}{4}$ to the ounce, materially assists in producing anesthesia. 5. The objection that the galvano-cautery destroys too much of the mucous membrane does not obtain, if the cauterization is linear, and if it is done properly, whereby very little mucous membrane is destroyed. 6. Scab and crust formation does not occur any oftener following cauterization than after other nasal operations. In fact, it was noted in but very few instances, and in some of these a change in the spray solution caused a cessation of this trouble. 7. No packing is needed to prevent hemorrhage, and this factor makes the discomfort following the operation very much less than after some other methods. 8. There is very little pain after galvano-cauterization of the turbinated bodies.

Instruments were exhibited and cases presented by Drs. Frank Allport, Joseph C. Beck, William L. Ballenger and Norval H. Pierce, Chicago; H. W. Loeb and Max A. Goldstein, St. Louis; W. R. Dabney, Marietta, Ohio, and John J. Kyle, Indianapolis.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting held Jan. 20, 1906.

The President, DR. P. K. BROWN, in the Chair.

Atheroma of the Aorta.

DR. WILLIAM OPHÜLS showed specimens of atheromatous aorta which had been injected at blood pressure with paraffin. Contrary to Thoma's contention, these showed no bulging of the muscle beneath the atheromatous plaques. Since they were taken from an early stage in the disease, they showed very clearly that the thickening of the intima is not caused by any

primary weakening of the muscularis. The newer histologic methods favor the view that arteriosclerosis is an inflammatory condition.

Genu Recurvatum.

DR. H. M. SHERMAN showed a boy, 15 years old, who suffered from an extreme genu recurvatum. As an infant he had had a spinal kyphosis that had been cured by a plaster jacket. A little later he developed a tuberculosis of the left knee joint. At 8 years an erosion of the joint was done, and two later operations were performed on the knee, in one of which the external popliteal nerve was cut. The deformity of the knee is extreme and is increasing. The boy suffers pain after walking a few blocks. Dr. Sherman stated that in his own experience erosion of the knee joint is practically always followed by a tendency to flexion, which later takes place even though the joint is in splints. This flexion proceeds to about 35 degrees and then stops. It is much less likely to take place if the continuity of the extensor tissues over the front of the joint is preserved. The patient exhibited extension instead of flexion.

Hydrocyanic Acid Poisoning.

DR. T. C. McCLEAVE reported a series of cases of hydrocyanic acid poisoning that resulted from an attempt to exterminate roaches in a lodging-house. The poisonous fumes diffused to distant parts of the house, especially through an open clothes-chute. The patient most severely affected stated that after noticing the odor of the gas she felt nauseated and dizzy and then vomited profusely. After a brief period of fullness and whirling in the head she became unconscious. When discovered, shortly afterward, she was extremely cyanotic, the mucous membranes were injected and the muscles rigid. Urine was voided involuntarily. She remained unconscious for about eight hours. She was given artificial respiration, oxygen and the usual cardiac and respiratory stimulants. The use of an adrenal preparation seemed to favor recovery more than anything else did. Headache, nausea and vomiting persisted for some days. The cyanosis also lasted for some days and seemed to be dependent on changes in the blood itself. All those who had assisted in removing this patient from the room were more or less affected, being prostrated with headache, vertigo, nausea and vomiting. The blood examination of one of these showed 4,000,000 red cells, 9,000 leucocytes and a normal differential count. The urine was scant and smoky, but showed no albumin.

DR. RIXFORD spoke of the value of suprarenal preparations in surgical shock. He has seen the blood pressure rise markedly after injections of this substance, and in one case in which strychnin and salt solution had been previously administered he felt confident that the adrenal solution had saved the patient's life.

Operations on Thyroid.

DR. W. I. TERRY reported a series of nine operations on the thyroid gland, with no deaths. Eight of these patients had more or less severe symptoms of exophthalmic goiter and all were improved as a result of the operation. In several the x-ray and the serum treatments had been tried previously without success. In all the right lobe was much larger than the left. The operation was essentially that elaborated by Kocher. A local anesthesia was employed. In one patient, while tying the inferior thyroid artery the voice suddenly became squeaky, and it only needed a readjustment of the ligature to free the nerve which was not itself seen. The collar incision was preferred because it gives a better exposure of the gland and because it leaves a better cosmetic result. The individual vessels were isolated and tied. As a rule the stump of the gland was cauterized with carbolic acid and a small drain was left in for twenty-four hours.

Paroxysmal Tachycardia Associated with Exophthalmic Goiter.

DR. P. K. BROWN reported in detail the case of one of the patients operated on by Dr. Terry. A woman, 41 years old, gave a history of paroxysmal tachycardia since she was 12 years old. One of her children also has these attacks. She was observed in several paroxysms of tachycardia, during which her pulse rate reached 280 per minute. Gradually a small goiter developed, associated with tremor, general nervousness, pigmentation of the skin and marked general weakness. Over a period of two years she was treated with various medical remedies, in-

cluding two kinds of dried serum from thyroidectomized animals and the x-ray, but without any other effect than could be accounted for by the rest in bed. After a part of the gland was removed she improved immediately and considerably.

DISCUSSION.

DR. CHENEY said that many cases of exophthalmic goiter seem to run a self-limited course, and if the symptoms can be relieved the disease will terminate of itself. Others must come to the surgeon, but the operation should be a last resort and should not be performed until medical treatment has been given a fair trial.

DR. S. STILLMAN stated that he has under his charge for other conditions two patients who previously suffered from exophthalmic goiter, with enlargement of the thyroid, rapid pulse and tremor. They both recovered spontaneously. He is not in favor of early operations on comparatively mild cases.

DR. DUDLEY TAIT recently visited Jaboulay's clinic in Lyons and saw some of the results that follow sympathectomy. The exophthalmos and enlargement of the thyroid are nearly always improved. Patients with marked nervous symptoms and those with pronounced tachycardia are not considered favorable subjects for this operation. The operation is comparatively free from danger. The difficulty with local anesthesia in this country is that the people do not realize the dangers of general anesthesia and are not tolerant to pain. For this reason many operators find it necessary to use ether in goiter operations.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Treatment of Pneumonia.

In an article in the *Medical Review of Reviews*, Dr. Henry P. Loomis gives an account of the treatment followed out by four of the large hospitals of New York. The general outline is as follows: On admission the patient is usually given calomel in small and repeated doses, followed by a saline cathartic. Local applications are usually restricted to those cases in which there is intense pain and distress. As a general rule, however, local applications are not used. In the height of the disease the diet is composed almost exclusively of milk, either plain or modified to suit the individual case. While the treatment of the temperature is not the same in the different institutions, it is regarded that a temperature of 104 F. or even higher is not regarded as a necessary indication for special treatment, unless there is marked nervous manifestation, increased restlessness, or delirium. The temperature may be combated by cold packs applied to the anterior portion of the chest, or by alcohol sponging. Sponging with tepid water at a temperature of from 80 to 85 F. may be employed to reduce temperature. Tub baths are given only in cases of toxicæmia or in alcoholic cases with marked nervous manifestations. To control the cough, codein is recommended in doses of $\frac{1}{4}$ to $\frac{1}{2}$ grain, (.015-.03) each, every four hours. Heroin may occasionally be given in doses of $\frac{1}{12}$ grain each (.005), and in severe cases morphin may be used. Where there is evidence of pulmonary edema, hypodermics of adrenalin are resorted to; also atropin, cupping and stimulation. Insomnia may be a disturbing factor in the course of the disease and may require special treatment.

According to Loomis, oxygen is not so generally given now as formerly. Its use is restricted to those cases complicated by marked dyspnea and cyanosis.

In the treatment of the heart, cardiac stimulants are resorted to when indicated in the different cases. Alcohol, he says, ranks first as a cardiac stimulant; strychnin and digitalis are also used. The latter preparation, however, is not used to the extent that either alcohol or strychnin is employed. Nitroglycerin may be resorted to, according to this author, only occasionally. Saline enemata are of service, especially in

alcoholic cases and in those cases in which nutrition is rapidly failing. Eight ounces of a normal saline solution may be introduced into the bowel through a funnel attached to the end of a catheter. These injections may be repeated once in four hours. If the amount of fluid is limited to 8 ounces it is retained, with marked beneficial results. Loomis, therefore, emphasizes the following important points in the treatment of pneumonia: First, the more general use of morphin hypodermically in the early stages of the invasion of pneumonia, which is the stage in which very many cases present shock to the nervous system from a sudden increased toxemia associated with marked pain almost reaching the pain of pleurisy. [While Dr. Loomis advises the general use of morphin, it should be remembered that this drug locks up the secretion and should be used with great caution.—En.] Second, the amount of alcohol used in the treatment of pneumonia should be very judiciously and cautiously used. Third, the avoidance of promiscuous drugging of patients, which produces more damage than assistance in a greater percentage of cases.

Bronchial Asthma.

In the treatment of bronchial asthma, J. P. Oliver, in the *New York Medical Journal*, states that the successful treatment consists first, in treatment during the paroxysms; second, in treatment during the intervals; third, in proper attention to sanitation and diet. In the treatment of the paroxysms Oliver recommends morphin sulphate hypodermically in doses of from $\frac{1}{4}$ to $\frac{1}{2}$ grain combined with atropin sulphate in doses of from 1/150 to 1/100 grain, repeated, if necessary, in two or three hours. [In this condition also morphin must be used with care, as there is danger of creating a habit.—En.] If the patient is a neurasthenic, he recommends apomorphin hydrochlorid in doses of from 1/20 to 1/10 grain, and strychnin nitrate, in doses of from 1/60 to 1/40 grain, the latter preparation being used to prevent depression from the effects of the apomorphin. The constitutional treatment consists of the following combination:

| | | |
|------------------------------------|--------|------|
| R. Potassii iodidi | 3ii-vi | 8-24 |
| Hydrargyri chloridi corrosivi..... | gr. ss | 03 |
| Ammonii chloridi..... | gr. x | 65 |
| Liquoris potassii arsenitis..... | 3ss | 58 |
| Aque dest., q. s. ad to make..... | 3iii | 90 |

M. Sig.: From one teaspoonful to a desertspoonful in a half a glass of water three or four times a day, beginning with the smaller dose, and gradually increasing to the larger dose.

He advises against the use of tobacco in all forms, especially cigarettes. Alcohol should not be used in any form, as it not infrequently tends to provoke severe attacks. The nasal passages and the mouth and throat must be kept in an aseptic condition. The teeth must be carefully cleansed, and if caries are present, they should be properly attended to by the dentist. Flannel should be worn next to the body during the winter and early spring. The sleeping apartment should be well ventilated, especially at night, as the paroxysms not infrequently occur between 2 and 4 o'clock in the morning, consequently all draughts of air should be avoided. Feather beds and pillows for sleeping should not be used. Overeating and late dinners should not be indulged in. F. L. Nelson, in the same periodical, recommends hyoscin hydrobromid given hypodermically in doses of 1/150 grain each, and also adrenalin in doses of from 4 to 8 minims of a 1 to 1,000 solution, hypodermically.

In the internal treatment he recommends hot black coffee, belladonna when innervation is disordered, or when there is spasm of the muscular fibers of the bronchi. Chloral hydrate is of service in some cases, given in large doses, but should be used with care.

In the treatment of the nose in severe cases he recommends a spray of a 4 per cent. solution of cocain in order to rid the passages of the secretions. The administration of this preparation, however, should be carefully guarded by the physician himself. If the patient is weak he should be given iron, quinin, cod-liver oil, phosphorous and nux vomica, as indicated. To relieve the distressing cough Nelson recommends lobelia and ammonium chlorid.

The patient should be instructed to live in the open air, avoiding winds and locations where there are extreme varia-

tions of temperature. Humid atmosphere is bad. The underwear should be of woolen. The functions of the skin and the other excretory organs should be carefully watched; moderate physical exercise is recommended, and the patient is advised to avoid indigestible and fermenting foods, which are liable to result in the formation of gas, in constipation and chemical irritation. Fats and sweets should be limited, starchy foods must be thoroughly cooked and slowly masticated. Among those articles of food which should be avoided are pork, veal, cheese, malt liquors, heavy wines and champagne. The heavy meal should be taken in the middle of the day, the supper should be light in order that gastric digestion may be completed before the patient retires. Water should not be allowed with the meals.

Cold Fresh-Air Treatment of Pneumonia.

W. P. Northrup, in the *Boston Medical and Surgical Journal*, relates a case of a wandering grip pneumonia involving the entire left side, which was combated by what he calls the cold fresh air treatment. In this case he placed the head of the bed between two open sashes in a bay window. The sashes were lowered and left widely open. As this was in March the room temperature was 40 F. The nurses were compelled to wear heavy wraps night and day. The patient had no oilskin jacket and no cover over the chest, and the arms were left out. The boy's respirations ranged from 35 to 40, and the temperature reached from 104 to 105 during the day; the pulse was seldom above 120. Going on the theory that the boy was overheated and prostrated with poison, Northrup adopted this means of treatment. The fresh air moved the hair on the patient's forehead, passing in at one window and out at the other. Muttering delirium, hot dry skin and a dry tongue were the indications for plenty of water and air, consequently the author adopted this method to cool and dilute the blood stream, to aid the system in unloading its toxic material, and to increase the natural drain. He mentions the fact that patients can not catch cold while the fever is present, and states that with this treatment they are more comfortable, bear the disease better, and recover earlier and more perfectly, and with less danger.

Quillaja as an Emulsifying Agent.

According to L. F. Hemmans, in *British Medical Journal*, the value of quillaja as an emulsifying agent is not sufficiently known. The following emulsions are easily prepared and, according to this author, remain permanent on the addition of either alkalies or acids:

To make a chloroform solution:

| | | |
|-----------------------|------|-----|
| R. Chloroformi | 3ix | 36 |
| Tinct. quillaje | 3iii | 12 |
| Aque | 3x | 130 |

M. Ft. emulso.

| | | |
|--------------------------|-----|-----|
| Aqua menthae piperitæ: | | |
| R. Olei menth. pip. | 3iv | 16 |
| Tinct. quillaje | 3ii | 8 |
| Aque | 3x | 130 |

Aqua camphoræ conc:

| | | |
|-------------------------|------|----|
| R. Pulv. camphoræ | 3i | 4 |
| Spiritus rectif. | 3iii | 12 |
| Dissolve and add | | |
| Tinct. quillaje | 3iss | 6 |
| Aque | 3iii | 90 |

Emulso ol. santali:

| | | |
|-----------------------|-----|----|
| R. Olei santali | 3i | 4 |
| Tinct. quillaje | 3ss | 2 |
| Aque | 3i | 30 |

Emulso olei terebinthinæ:

| | | |
|----------------------------|-------|-----|
| R. Olei terebinthinæ | | |
| Tinct. quillaje, aa. | m. xx | 130 |
| Aque | 3i | 30 |

Emulso paraldehyd:

| | | |
|-----------------------|-------|-----|
| R. Paraldehyd | 3i | 4 |
| Tinct. quillaje | m. xx | 130 |
| Aque | 3i | 30 |

Cure of Eczema by Bier's Hyperemia.

Dr. George Richter, St. Louis, in the *St. Louis Medical Review*, February 24, reports the cure of a case of eczema by

Bier's method of congestive hyperemia. The patient was a boy of 16, otherwise healthy, who belonged to a good family, in which absolute cleanliness is insisted on. When he consulted Dr. Richter, Nov. 22, 1905, there were many fresh and a few older papules and crusts on the forehead, both cheeks, upper and lower eyelids, both lips and in the border of the hair near the right ear. The lesions closely resembled those of impetigo contagiosa. A 5 per cent. salicylic acid salve was prescribed, but by November 25 the trouble had extended over a larger surface. Resorcin salve, 2 per cent., was ordered and the patient was sent to a hospital. The itching had lessened and the condition of the skin had improved about the forehead and eyes, but the eczema had extended over the chin and to the right eye, completely closing the latter. The right ear was also involved. By December 2 the left eye was also involved, though the right eye showed a little improvement. Hebra's salve was applied on chamois and a few days later slight improvement was noted, but this consisted really in the clearing up of some places with fresh lesions in others. A 3 per cent. boric salve was then tried. During all this time the salves were applied once a day and the face was gently cleaned by rubbing it with olive oil. On December 16 Dr. Richter decided that no real progress toward recovery had been made and determined to try the congestive hyperemia advocated by Bier in other inflammatory conditions.

He ordered the face covered with plain vaseline and applied a half-inch silk-woven rubber band with a self-locking device round the throat, just tight enough to cause a slight congestion of the face, but without causing the patient any great discomfort. After about twelve hours there was edematous swelling of the eyelids. The itching disappeared, and within forty-eight hours the effect was remarkable. Sleep was uninterrupted. The temperature never rose above 98.4; the slightly coated tongue cleared up; crusts no longer formed; the oozing of serum stopped and the inflamed border of the affected area vanished. Thirteen days after the application of this method of treatment the eczema had disappeared; no trace of a skin affection could be seen.

Medicolegal

Care Required of Surgeon Volunteering Services.

The Supreme Court of the United States says, in the case of the Guardian Trust and Deposit Company vs. Fisher, that an individual may be under no obligation to do a particular thing, and his failure to act creates no liability; but if he voluntarily attempts to act and do the particular thing, he comes under an implied obligation in respect to the manner in which he does it. A surgeon, for instance, may be under no obligation, in the absence of contract, to assume the treatment of an injured person, but if he does undertake such treatment he assumes likewise the duty of reasonable care in such treatment.

Board of Health Diagnosis Conclusive.

The Court of Appeals of Kentucky holds, in the case of the City of Bardstown vs. Nelson County, an action brought to recover the expenses of a quarantine against smallpox, that the jury should have been instructed that the action of the board of health in diagnosing the case of a person sick and declaring him ill of smallpox, and in directing the quarantine to be established by the city, was conclusive as to it and the fiscal court of the county, and should be so regarded by the jury in arriving at a verdict. Furthermore, the court holds that the trial court should have sustained an objection to and a motion to exclude the testimony of certain witnesses that the man did not have the smallpox, when the witnesses were not and did not claim to be experts and were not familiar with the disease or experienced in its treatment. The prejudicial effect of this testimony, the court says, was not lessened by an admonition to the jury that it might be considered by them in determining the reasonableness of the city's charges for the articles furnished and services rendered by it in preventing the spread of the smallpox. The court is unable to see that this testimony was any more competent for the purpose the jury were told to consider it than it would have been on the question of whether or not the man had the smallpox.

Not Waiver of Right to Object to Disclosures.

The Supreme Court of Indiana says that, in Indianapolis & Martinsville Rapid Transit Co. vs. Hall, a personal injury case brought by the latter party, the plaintiff and his daughter testified to his condition after his injury. While so testifying they stated that the plaintiff made complaint of certain pains to the attending physicians, and also incidentally testified to declarations claimed to have been made by such physicians, while treating the plaintiff, as to the nature and probable result of his injury. Counsel for the company contended that the disclosures by the plaintiff and his daughter, testifying on his behalf, as to his condition and the circumstances attending the visits of the physicians, should have been accounted a waiver of the right to object to said physicians as disqualified, or, in other words, it was claimed that the company was at liberty to examine said professional witnesses generally; and it was particularly contended that they were competent for the purpose of denying or explaining the statements attributed to them. But the court holds that there was no general waiver on the part of the plaintiff of the right to object to the physicians as witnesses for the company. It says further that there were many matters within the company's offer to prove by the physicians concerning which they remained wholly incompetent. The question as to the competency of the physicians as witnesses to explain or deny the statements attributed to them was not presented. It was only in the course of an offer to prove that there was a tender of any such evidence. It is a settled rule of practice that there must be a question asked which is calculated to elicit the testimony excluded to present any question concerning the ruling. Moreover, it is the duty of a party to select the competent from the incompetent in offering testimony, and he can not impose this duty on the trial court. It is too much to expect that a court, without even the aid of an opposite question, shall sift out of a long offer to prove, consisting largely of that which is incompetent, an item of proposed testimony which would only be admissible because of certain testimony which had been previously offered by the other side. The sustaining of an objection to the question in such circumstances is not error.

Construction of Health Policy as to Blood Poisoning.

The Supreme Court of North Carolina says, in the case of Jones vs. Pennsylvania Casualty Company, that the plaintiff, a holder of a health policy, received a small scratch on the hand, which began to inflame, blood poisoning developed and the arm was of necessity amputated. The policy contained a definite stipulation for indemnity in case of disability arising from certain specified diseases, blood poisoning being one expressly named. But, having given this assurance of indemnity, from which, this disease being evidently the direct and controlling cause of the disability, as a matter of first impression the right of the plaintiff to recover would seem to be clear, the policy then took up the matter of provisos by way of restriction, and stipulated further: 1. That the policy should not apply to any illness or disease whatever except those named. 2. That it should not apply to any disease which was complicated with, or resulted from, any disease not therein named, etc. 3. Nor to any disease or illness which resulted from injury, etc. 4. Nor, in effect, to any disease which developed or resulted from those diseases that were named, etc. There were many other limitations and restrictions in the policy, but those set out were enough to show that, if these provisos could prevail, blood poisoning was entirely withdrawn from the operation of the policy, and any and all stipulation for indemnity concerning it effectually removed. Now, so far as the court is informed, blood poisoning is not considered as one of the primary or idiopathic diseases. It is a toxic condition of the blood, caused either from or through a surface wound or some internal lesion or from the breaking down of tissue incident to an existent or precedent disease, and thereby producing suppuration. As to this disease, therefore, these provisos removed every possible condition where the disease could occur, and if upheld would, as stated, entirely set aside the definite contract for indemnity contained in a former clause of the policy. Such a result could not be permitted and is not sustained by authority. It is established doctrine in construing these policies that doubts shall be resolved in favor of the insured. Another principle applicable

to this case, and equally well established, is that, while clauses in a contract apparently repugnant must be reconciled if it can be done by any reasonable construction, yet a proviso which is utterly repugnant to the body of the contract and irreconcilable with it will be rejected; likewise, a subsequent clause irreconcilable with a former clause and repugnant to the general purpose and intent of the contract will be set aside. The court's conclusion, therefore, is that, as to blood poisoning, the various restrictive provisos in this policy were entirely repugnant to the definite stipulation of indemnity contained in the main body of the contract, where contrary to the general intent and purpose of the policy and could not avail to defeat the plaintiff's recovery of indemnity.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

March 3.

- 1 *Epidemic Cerebrospinal Meningitis. W. M. Leszynsky, New York.
- 2 *The Heart in Tuberculosis. W. Hutchinson, Redlands, Cal.
- 3 Massage and Motion in Fractures. G. Norström, New York.
- 4 Syphilitic Empyema of the Accessory Sinuses of the Nose. J. H. Abraham, New York.
- 5 Splenic Leukemia. H. J. Thompson, La Porte, Ind.
- 6 *Aspiration of the Tympanic Cavity After Paracentesis; a Valuable Aid in the Treatment of Acute Otitis Media. F. Fridenberg, New York.

1. **Epidemic Cerebrospinal Meningitis.**—Leszynsky presents a clinical report and an analysis of the special symptoms in 30 cases representing nearly all types of the disease. The mortality was 50 per cent. Good nursing and proper feeding were the most important features in the treatment. When the weather permitted, the patient was kept in the open air the greater part of the day. Hot saline rectal irrigation or hypodermoclysis often proved extremely valuable in improving the patient's vitality. The hot bath, given several times a day, usually allayed excessive irritability and delirium, and temporarily improved the patient's general condition. The ice-bag was applied to the head and neck in every case, but Leszynsky doubts its utility. Whisky, strychnin, digitalis, morphin and ergot were employed when indicated. In several acute cases salicylate of sodium was administered by rectum, but without benefit. Lumbar puncture was performed one or more times in every case, either for diagnostic or therapeutic purposes. It was never followed by unpleasant results. In two of the patients who recovered, lysol solution was injected into the spinal canal. In one instance a 1 per cent. solution was used without apparent effect. In the other a 10 per cent. solution was used, and it seemed to have some influence in hastening recovery. It was also used in several of the fatal cases without benefit.

2. **Heart in Tuberculosis.**—Hutchinson has found, after careful investigation, that a weak, undersized, muscular deficient heart, indicated by a weak, rapid pulse and defective first sound, approaching embryocardia, is one of the most constant and significant conditions present in consumption. This condition, in a considerable percentage of cases, precedes the development of tuberculosis. The earlier in the disease this condition presents itself, and the more striking its degree, the more serious the prognosis. This undersized and inadequate heart is normal at about the period of puberty. Hutchinson urges that the condition of the heart should be the principal guide in the diagnosis, prognosis and treatment of consumption. A persistent rapid pulse, without other ascertainable cause, should always arouse suspicions of incipient tuberculosis.

6. **Aspiration of Tympanic Cavity.**—The procedure described by Fridenberg is the evacuation by suction of the tympanic cavity immediately after cutting the drum. For this purpose he uses a small glass bulb about five-eighths of an inch wide, shaped like an olive, with a very blunt tip. The neck of the glass bulb is stuffed with sterile cotton and attached to a short rubber tube after both bulb and tube have been thoroughly boiled. Immediately after the paracentesis is made

the glass bulb is pressed against the external meatus, plugging the canal hermetically. Suction is then applied and gradually increased until there is a flow of fluid from the middle ear and the glass bulb fills more or less. Fridenberg has found the effects of this aspiration strikingly gratifying. There seems to be less pain after the paracentesis than when an incision only is made. The otitic pain is more promptly and lastingly relieved. A second incision of the drum is less often required and drainage is much more free.

American Medicine, Philadelphia.

March 3.

- 7 *The Public Health Laboratory. F. F. Wesbrook, Minneapolis, Minn.
- 8 *Cause of Epilepsy. O. Lerch, New Orleans, La.
- 9 *Chronic Urethritis and an Improved Method of Applying Medication to the Urethra. E. G. Ballenger, Atlanta, Ga.
- 10 Practical Side of Mosquito Extirpation. H. C. Weeks, Bay-side, L. I.
- 11 Effect of Tissue on Cardiac and Vascular Murmurs. R. D. Rudolf, Toronto, Canada.
- 12 Disinfection of Ships. J. D. Long, Manila, P. I.

7. **Public Health Laboratory.**—Wesbrook discusses the function and scope of the public health laboratory, and takes occasion to group laboratory work and laboratory workers in the classes in which the present demands and growth seem to place them.

8. **Cause of Epilepsy.**—Lerch advances the theory that the basis of epilepsy is a diseased brain, congenital or acquired. The widely accepted theory of autointoxication he considers, with the rest of etiologic factors, as a remote cause producing congestion and edema. He thinks that the large number of patients in whom a neuropathic constitution and epilepsy can be traced directly, and the large variety of lesions that are found in the epileptic brain favor the correctness of his theory. He says that the same train of symptoms, occurring under the most varied conditions, in patients of all ages, uninfluenced by sex, climate and disease, calls for one direct cause to produce the attack. This cause is congestion and edema.

9. **Treatment of Chronic Urethritis.**—Ballenger's method consists in the employment of a sound which has been coated with the solidified ointment of Unna, which contains, in addition to silver nitrate and cocoa butter, balsam of Peru and white wax, to harden the ointment after it has been smeared on the sound. To facilitate the hardening of the ointment, the sound is cooled in ice-water. This method of treatment has proved so satisfactory that Ballenger has adopted it as a routine method of applying medicine to the urethral canal in any chronic condition.

The sounds are prepared in the following manner: From 2 to 3 gm. (30 to 45 gr.) of silver nitrate or the medicament desired, is powdered and mixed with 180 gm. (3vi) of melted cocoa butter, which is placed in a tall wide-mouth bottle. It should be sterilized occasionally by boiling in a water bath. When the mixture is to be used it is placed in hot water or on a steam radiator until it liquefies. The largest sound that can be passed easily and another three sizes smaller are sterilized and placed in a pitcher of ice-water. The large sound is lubricated, introduced, and left in place for from three to eight minutes, according to the conditions. The smaller one is dipped into the melted ointment, withdrawn and manipulated for a moment while it cools to obtain a uniform layer, and is then placed in the ice-water. The cold hardens the cocoa butter and the sound may be introduced before this melts, while the canal is cool from the larger sound which is passed first, to prepare the way by overcoming any spasmodic obstruction, and to dilate the stricture, if one exists. The stimulating action of the cold is also desirable. The canal may be irrigated before each treatment. Massage along the urethra can be done painlessly by steadying the sound with the right hand to furnish counter-pressure against the fingers of the left, which devote special attention to the bulb and indurated points. Force of any kind should never be used, nor is the treatment applicable to any acute condition. The intervals between treatments vary from one to four days, according to the reaction which follows and the condition being treated. The strength of the ointment is increased as the urethra becomes more tolerant.

Boston Medical and Surgical Journal.

March 1.

- 13 *The Medical Profession and the Medical Journals in Relation to Nostrums. F. Billings, Chicago.
 14 *Ready-made Remedies. F. G. Wheatley, North Abington.
 15 *Photophobia: A Nasal Reflex. E. D. Spear, Boston.

13-14.—See abstract in THE JOURNAL, Jan. 20, 1906, page 220.

15. Photophobia a Nasal Reflex.—Spear contends that photophobia is a nasal reflex. He says that it is a common experience to have a bright light induce sneezing. Hence, there must be a degree of hypersensitiveness of the nasal membranes. When light causes one to blink or to wrinkle the forehead, the nose is at fault rather than the eyes. He says that the so-called hay-fever paroxysms form an exaggerated type of physiologic reflex. These may include all the normal nasal reflexes, lachrymation, sneezing, coughing, hiccup, and sometimes vertigo, with nausea and retching. He cites the case of a bellboy who was obliged to await calls in front of a row of electric arc lamps. The young man was unable to endure what had become a source of torture to him without constantly shading his eyes with his hands. Examination showed no defect of vision, but the nose was obstructed throughout the middle fossæ by large hypertrophied turbinates. Direct applications to these swellings produced none of the nasal reflex symptoms. Several weeks of treatment, however, brought about a normal degree of sensitiveness, and as the young man's condition improved, a bright light would bring on a paroxysm of sneezing, the onset of which was delayed longer each time until finally the light ceased to cause reaction.

New York Medical Journal.

March 3.

- 16 *A Point in the Technique of Breast Amputation for Cancer. R. F. Weir, New York.
 17 Two Cases of Angioneurotic Edema with Associated Nervous and Mental Symptoms. T. Diller, Pittsburgh.
 18 Sporadic Trichinosis. D. Bovald, Jr., New York.
 19 Retroantegrade Amnesia. A. Gordon, Philadelphia.
 20 Contribution to the Study of Pseudoneuritis Optica. M. Talney, New York.
 21 Gonococcal Infections and the Physician's Responsibility. J. B. Clark, New York.
 22 Theory of Protein Metabolism. O. Folta, Waverley, Mass.
 23 Suggestions on the Nature and Treatment of Rheumatism. W. E. Deeks, New York.

16. Cancer of the Breast.—Before the radical operations for the removal of a cancerous breast came into vogue, Weir found that in following up the enlarged lymph glands to the very point where the axillary vessels pass under the clavicle, he could often carry his finger under the clavicle to one of the sides of the vessels by pulling the arm vertically upward and thus reach glands, etc., well under and slightly above the clavicle. When no enlarged glands can be felt through the skin of the neck, the little finger or the forefinger can be carried under or beyond the clavicle its full depth into the neck, and the supraclavicular space behind the sternomastoid muscle can be fully explored. If enlarged glands are found in this region Weir makes the customary incision along the edge of the clavicle to the root of the sternomastoid muscle and up a short distance along its posterior border. The space is then cleared of glands and fat tissue. If nothing is found the breast wound is closed and a small cigarette drain is placed in the hole bored alongside the vessels, to be withdrawn at the end of twenty-four or forty-eight hours.

St. Louis Medical Review.

February 17.

- 24 Vascular Hypertension. J. R. Lemen, St. Louis.
 25 Operative Treatment of Chronic Nephritis: A Third Communication. (Concluded.) R. Gutters, New York.

Lancet-Clinic, Cincinnati, Ohio.

March 3.

- 26 *Fractures About the Elbow Joint. W. D. Haines, Cincinnati.
 27 *Pyroplasty with the McGraw Ligature. J. H. Carstens, Detroit, Mich.
 28 Diseases, Diagnosis and Surgical Treatment of the Right Upper Abdominal Cavity. (Concluded.) B. M. Ricketts, Cincinnati.
 29 Diagnosis of Surgical Diseases of the Kidney. J. G. Sherrill, Louisville, Ky.

26.—See abstract in THE JOURNAL, Jan. 13, 1906, page 146.

27. Id.—Nov. 4, 1905, page 1435.

Maryland Medical Journal.

February.

- 30 Ancient and Modern Theories of Age. M. L. Price, Baltimore.
 31 *Medical Support of Nostrums. S. H. Adams, New York.

31. Medical Support of Nostrums.—In discussing this question Adams points out that most patent medicines originate with the medical profession. A physician devises some combination of drugs which he uses with effect, real or imagined, in his practice. The mixture acquires a considerable local fame. Finally it occurs to the doctor that he can make a good thing of that by selling it beyond the little circle of his immediate practice. So he goes to the United States Patent Office and obtains, not a patent, for that would necessitate his giving out the formula, but trade-mark registration. Such is the origin of peruna and many other nostrums. Again, medical testimonials are very easy to get in the so-called ethical field; but they do not seem very impressive when one comes to look into them. The geographical location of the physicians who lend their names to testimonials is interesting, perhaps even significant. Curiously enough, says Mr. Adams, it is just the same class of places that furnishes the familiar "God-bless-peruna" letters which appear in the dailies. If this has any special meaning, it would seem to be that the order of intelligence which prevails in the small town finds similar expression both in the layman and the physician. Foreign testimony from men of standing is much easier to obtain than domestic, because these men, as a rule, are not known in America, nor do they care anything for America.

Adams believes that it might be worth while for physicians in each city to know just which of their fellow practitioners are prostituting themselves to this trade. He suggests that THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION might supplement its list of the proprietary associations of America by a list of physicians owned by the proprietary associations. He goes on to say that a vital weakness in the medical opposition to "patent medicines" is the lack of an intelligent idea by the profession of the forces it is fighting. The medical profession is dangerously swift to jump at conclusions. It is fighting a very keen and powerful enemy in the "patent-medicine" man. Its most effective weapon is the truth, and the profession has not found it yet. Through reckless statements it is in danger of forfeiting that public confidence which should be its most potent ally. Mr. Adams says: "Find out where the foe is before you strike. Don't hit out with your eyes shut."

He points out that the greatest present hope is in legislation, and suggests that every medical organization in the country appoint a committee on legislation, made up of its most representative members. The Proprietary Association of America is rent with dissensions. There was never before so brilliant an opportunity for the enemies of fraudulent nostrums. This spring there will be introduced in many state legislatures a patent-medicine bill looking to an effectual guardianship of the public health. Mr. Adams believes that if every physician will stand behind this bill, not alone as a physician, but as a citizen with a vote and a voice for the betterment of his commonwealth, the nostrum business will be so restricted within the bounds of decency and fair dealing that fraud and poison will become unprofitable in those markets. If the medical profession will mobilize its forces and for once speak its mind in the legislative halls, it will result in the effectual crippling of a traffic which takes its profit from suffering and death.

St. Louis Courier of Medicine.

February.

- 32 *Is Syphilis or Mercury Responsible in the Etiology of Dementia Paralytica and Locomotor Ataxia? O. L. Wolter, St. Louis.
 33 Tumors of the Cerebellum. (Concluded.) E. A. Babler, St. Louis.
 34 Treatment of Respiratory Diseases in Children. J. Zahorsky, St. Louis.
 35 Posterior Basic Meningitis. L. M. Warfield, St. Louis.

32. Syphilis or Mercury.—Wolter holds that the theory that paralytic dementia and tabes, in 90 per cent. of all cases, are meta-syphilitic conditions is not so sound as the theory that

the diseases are usually a metamercorial condition. He does not deny that paretics and tabetics are syphilitic, but believes that it is equally true that they have been mercurialized. As the result of considerable study he inclines to the belief that mercury and not syphilis is responsible in the etiology of dementia paralytica and locomotor ataxia. He says that there are important reasons for the belief that syphilis plays a minor rôle in the etiology of sclerosis of the brain and cord. Although the negro is very prone to contract syphilis, paresis and posterior spinal sclerosis are seen rarely in the colored race. The average negro most frequently receives no treatment for lues, and the most severe secondary and tertiary lesions are found in the colored man. Having become a syphilitic, he allows the disease to run a typical course without interference. If he does take mercury it is with no system; it is taken irregularly and for no prolonged period of time. Yet, in spite of all this, he does not become the victim of paresis and tabes. On the other hand, the man of brains, the professional man, the highly educated man, falls a ready victim to paresis. The requisites of thorough anti-syphilitic treatment are brains and money, and, since these are the essentials in obtaining the treatment, Wolter believes that there is the reason why paretics and tabetics are usually individuals of prominence. Wolter also discusses the reasons why paresis takes a long time to develop; how mercury may produce the pathologic changes found in paresis and tabes, and the fact that anti-syphilitic treatment does no good, but actually does harm, pointing out always that the syphilitic etiology of the diseases under discussion appears questionable.

Journal of the Medical Society of New Jersey, Newark.

February.

- 30 *Considerations Regarding Prescription Writing To-day. F. M. Corwin, Bayonne, N. J.
- 37 Obstetric Technic in Relation to Subsequent Pelvic Manifestations. J. C. Applegate, Philadelphia.
- 38 Examination of the Eyes and Ears of School Children by School Teachers. L. Emerson, Orange, N. J.

36. Prescription Writing To-day.—Corwin discusses the reasons for the decadence of the old-time prescription and the ascendancy of the prescription calling for proprietaries and "patent medicines." He says that a peep at the shelves and into the closets behind the prescription counters of drug stores reveals a vast array of broken original packages of the wares of the different manufacturing pharmacists, of more or less repute, who have managed, by dint of persistent pushing of literature and samples, to get their preparations prescribed by physicians. Many of these proprietary articles are ethical and many are not. Of those which might in themselves be classed as ethical, some are exploited in a manner which puts them without the class, and makes their use by the medical profession entirely inadvisable.

One of the first and most apparent reasons why physicians prescribe any of these remedies, says Corwin, is that the manufacturing pharmacist can and does turn out a better article than the average retail pharmacist. The combination end concentration of capital, the possession of special apparatus, the employment of skillful chemists, the laboratory facilities for research and experiment, the procuring and handling of crude materials in large quantities, enable the manufacturer of these proprietary articles to turn out a product which shall be as pleasing as possible to the eye, nose and palate. Furthermore, it takes a number of years for a really meritorious formula to find its way into the United States Pharmacopœia, or in other words, to become official. The result is that until a given preparation has been put in the Pharmacopœia, the latter published and in the hands of pharmacists, the mixture obtained in twenty different stores may have been made from almost as many different formulas. Even if each store is provided with the same formula, the conditions behind the prescription counter will readily explain why the products differ. Corwin places much of the blame for the undesirable preponderance and unmistakable attractiveness of these factory-made products on the Pharmacopœia.

Speaking of the objections to prescribing these proprietary articles, Corwin says that the effect on the mind and resourcefulness of the prescriber is detrimental, narrowing, blunting and destructive of individuality, of the ability to adapt a

prescription to the special case before him. The result is that prescription writing is liable to become a lost art. He points out that not only is it the duty of the physician to shun these offending articles, but to do all he can to discourage their use. As soon as one of the monopolized chemicals, under the coined name, becomes recognizable and is put in the market under its chemical cognomen, physicians should take pains to familiarize themselves with the fact, and to make use of the preparation. The use of but one word, and that a coined word, for the name of a remedy is objectionable in that it readily catches the eye, and is in turn learned by patients. The consequences to the latter are likely to be disastrous because, if the remedy works well, especially for the relief of some frequently recurring condition, such as headache, the patient falls a ready prey to the drug.

University of Pennsylvania Medical Bulletin, Philadelphia.

January.

- 39 *Has Experience Sustained the More Radical Operations for Cancer of the Uterus? J. G. Clark, Philadelphia.
- 40 Complications Arising in Sixty-three Consecutive Cases of Ovarian Tumors, with Special Reference to Malignancy. C. Norris, Philadelphia.
- 41 Sketch of the Life of Thomas Bond, Clinician and Surgeon. J. A. Scott, Philadelphia.

39. Radical Operation for Cancer of Uterus.—Clark states that while the operative statistics up to this time must dampen the enthusiasm of even the most ardent optimist, on the other hand, they are sufficiently encouraging to cheer even the pessimist if he will only give the study of ultimate results an unprejudiced critical review. He believes that more is lost than is gained in the radical operation when the glands are painstakingly extirpated, and that to remove here and there a palpably large gland will certainly not promote the patient's interest so far as a radical cure is concerned. Of all the various methods of operating employed he still adheres to the abdominal one, removing all possible tissue in the vicinity of the primary site of the growth, and using the cautery rather than the knife. In general, he follows the principles laid down by Wertheim, stopping short, however, with the removal of a considerable cuff of vagina with the uterus, and as much parametrium as possible, not prolonging the operation by a search for glands. He says that when one takes into consideration the fact that there is no regularity of metastatic distribution, that in even the earliest cases metastasis may have occurred, and that when the lower accessible glands are involved, the upper inaccessible glands, with the exception of only 13 per cent., are also involved, little argument is left in favor of the extensive dissection of the glands with the largely added mortality that must necessarily follow this step, from shock, infection and other complications.

American Journal of the Medical Sciences, Philadelphia.

February.

- 42 *Extirpation of the Mosquito. A. H. Doty, New York.
- 43 Cystinuria. W. McK. Marriott and C. G. L. Wolf, New York.
- 44 *Present Status of Blood Cryoscopy in Determining the Functional Activity of the Kidneys. E. Beer, New York.
- 45 Case of Hypertrophema. W. J. Taylor, Philadelphia.
- 46 Case of Double Pyonephrosis. M. Krotoszyner, San Francisco, Cal.
- 47 Abscess of the Brain. H. F. Stoll, Hartford, Conn.
- 48 Primary Cavernous Sinus Thrombosis. W. Zentmayer and T. H. Weisenburg, Philadelphia.
- 49 *Case of Myxedema with Ascites. A. E. Hertzler, Kansas City, Mo.
- 50 Spinal Cord Degenerations in a Case of Acromegaly, with Tumor of the Pituitary Region. A. M. Barrett.
- 51 Operations for Relief of Pelvic Diseases of Insane Women. L. Brown, New York.
- 52 *Researches on the Blood of Epileptics. B. Onuf and H. Lacrosse, Seneca, N. Y.
- 53 *Gunshot Wounds of the Abdomen. G. T. Vaughan, Washington, D. C.
- 54 *Complete Amputation of the Thigh, with Replantation. A. Carroll and C. C. Guthrie, Chicago.
- 55 Tetany. C. P. Howard, Baltimore.

42.—This interesting article covers practically the same points as the article by Dr. Doty which appeared in THE JOURNAL, Aug. 26, 1905, page 555.

44. Status of Blood Cryoscopy in Determining Functional Activity of Kidneys.—Experiments have convinced Beer that cryoscopy of the blood gives but little absolutely accurate information as to the present activity of the kidneys. The kidneys, though the most important organs in regulating the molecular concentration and osmotic pressure of the blood, are

not the only organs concerned with this intricate process. An anatomically normal or almost normal kidney may be so disturbed in its functional activity as to appear seriously diseased, being temporarily incapable of excreting its quota of molecules. The concentration of the blood may be normal, equal —56 C., even though the kidneys are functionally inactive and anatomically very badly diseased. The concentration of the blood may be increased to —60 C. or higher even though the second kidney is anatomically normal but is suffering from a functional disturbance produced by nervous reflexes, or by toxins which come to it through the circulation from the other diseased kidney. The concentration of the blood may be markedly increased, even though both kidneys are in good condition.

In bilateral disease if nephrectomy is done with normal concentration the operator may remove in the diseased organ the majority of the functioning tissue of the kidneys and thus bring on uremia and death, because the renal tissue left in the patient is inadequate for the excretory work. The list of patients who have survived a nephrectomy, despite high molecular concentration, —60 C., is steadily growing. Patients with normal freezing point do not necessarily survive the operation and are not in any way insured against subsequent uremia. In a large number of cases high concentration corresponds to bilateral kidney tissue, but as yet it is impossible to decide which cases of high concentration are not of renal origin, and, vice versa, which patients with low concentration are suffering or likely to suffer from renal insufficiency.

49. Myxedema with Ascites.—The interesting points in the case reported by Hertzler were the presence of ascites and of leukoplakic spots on the backs of the hands.

52. Blood of Epileptics.—Onuf and Lograsso undertook the study of the formed elements of the blood with the purpose in view of determining whether there existed any connection between the behavior of the formed elements and the epileptic seizures. Nineteen cases were selected, 8 men and 11 women, all of whom had been without bromids for a period of at least two months preceding the examination, and all of whom were idiopathic cases, so far as could be determined. They found that a leucocytosis may already be present directly before a seizure, and, if so, is then not a purely secondary phenomenon produced by the seizure. Furthermore, a grand-mal seizure need not necessarily be preceded or ushered in by a leucocytosis. These observations teach the important fact that there is no absolute parallelism between seizure and leucocytosis. They also show that the leucocytosis is, in part at least, independent of the seizure.

53. Gunshot Wounds of Abdomen.—In Vaughan's series of 14 cases of gunshot wounds of the abdomen there were 8 cases of wounds of the small intestine, 6 of the large intestine (5 of the colon and 1 of the rectum), 5 of the diaphragm and pleura, 5 of the liver, 2 of the stomach, and 2 of the kidneys. Several patients had a number of wounds in one organ, while in others several organs were wounded. One patient had 11 bullet holes in the intestine, while another had perforation of the liver, stomach and colon. One of the patients was not operated on, 1 was operated on late, and 12 were operated on in from one to twenty-eight hours after the reception of the injury. Nine patients died, a mortality of 64 per cent. In 6 cases the cause of death was hemorrhage, in 1 case peritonitis, in 1 case exhaustion, and in 1 case shock or the anesthetic, or both. Vaughan says that he knows of nothing more which could have been done to save the 6 patients who died from hemorrhage, except to have operated sooner.

54. Amputation of Thigh with Replantation.—Carrel and Guthrie attempt to show that a permanently successful replantation of an amputated thigh is possible. The experiment was performed on a dog. The thigh was amputated at the union of its lower and middle thirds. The limb was removed and enveloped with sterilized moist compresses. After a few minutes the amputated portion of the limb was placed on the operating table close to the remaining stump of the thigh. The continuity of the artery and of the vein were immediately re-established by end-to-end suturing. Absolutely no blood escaped from the vessels at the lines of anastomoses. The

pulsations of the popliteal artery immediately became normal and the femoral vein filled with circulating dark blood. The two ends of the bone were closely approximated and sutured together with silver wire. The sciatic nerve was sutured with silk, and the muscles, aponeurosis and skin with catgut. A gauze and collodion dressing was applied. Afterward the lower portion of the abdomen, the hip, the thigh and the leg were enveloped with cotton and the large plaster-of-Paris bandage.

Twenty-four hours after the operation the animal was in good condition and the replanted foot was very much warmer than the other foot. There was considerable swelling, however, which was thought to be due to the inactivity of the vasomotor nerves. Fifty hours after the operation the dog was killed, the development of gangrene being inevitable. The failure of the operation was due only to a fault of technic. A circular constriction produced by the gauze collodion dressing had stopped the venous circulation. The thigh and the leg were dissected. There was no stenosis of the vessels. The anastomoses were perfect. The cut ends of the muscles had united satisfactorily. The connective tissue of the thigh and of the popliteal region seemed normal, while in the leg and foot below the ring of constriction it was markedly infiltrated and edematous. The veins of the foot and leg were extremely dilated and filled with coagulated blood.

Indiana Medical Journal, Indianapolis.

February.

- 56 Camp Morton During the Civil War. P. H. Jameson, Indianapolis.
- 57 The Regimental Surgeon. L. D. Waterman, Indianapolis.
- 58 Eyesight, Literature and Civilization. F. C. Heath, Indianapolis.
- 59 *New and Rational Operation for the Correction of Prominent Ear. J. T. McShane, Indianapolis.
- 60 Medical Treatment of Postoperative Peritoneal Adhesions. T. B. Eastman, Indianapolis.
- 61 The X-Ray in the Treatment of Certain Diseases of the Skin. F. H. New, New York.

59. Operation for Correction of Prominent Ear.—The ears of the young man whose case is reported by McShane extended at right angles from the head and measured at the distal margin one inch and three-quarters. An elliptical section of integument two inches in length and something more than a half-inch in width was removed from the posterior aspect of the ear. The connective tissue was then carefully dissected away and the perichondrium roughened by the use of a curette. Strong catgut sutures were used in the cartilage in such a manner as to fold it on itself. The needle was introduced into the cartilage near the margin of the denuded section and thrust in as deeply as possible, care being taken not to pierce the skin on the anterior surface of the ear. The needle was returned and brought out an inch and a half from the point of insertion. The needle was then carried across the denuded area and a similar hold was taken near the margin of the skin on the opposite side. Four or five of these sutures were introduced, and when they were tied the ear presented the normal anterior ridge in its proper position, the ear was contracted to the normal size and at the same time brought back to the proper distance from the head. Silk sutures were used in bringing the margins of skin together, and the catgut sutures were thus buried. The ears were dressed with antiseptic gauze and cotton compresses and bandaged close to the head so as to relieve the sutures of as much tension as possible. Two weeks later all dressings were removed. The ears are normal in appearance and size.

Medical Fortnightly, St. Louis.

February 10.

- 62 *Foudroyant Gangrene. W. H. Wilder, Birmingham, Ala.
- 63 Tuberculosis, Socially and Financially. C. A. Bolce, Washington, D. C.
- 64 Present Status of the Alkaloidal Movement. W. C. Abbott, Chicago.
- 65 Tuberculous Adenitis of the Neck. R. J. Christie, Jr., Quincy, Ill.
- 66 Chronic Nephritis in the Aged. J. P. Matthews, Carlisle, Va.

62. Foudroyant Gangrene.—Two cases of this kind are reported by Wilder. The first patient dropped a pistol from his pocket, and the fall caused the weapon to explode, the ball entering the fleshy part of the calf of the right leg on the inner side, four inches below the knee, passing through the

limb behind the bones which were not injured, and coming out two inches higher on the outer surface. The patient, not believing that his injuries were dangerous, continued to work for two days before seeking medical attention. When first seen the wounds looked healthy, the circulation was good, there was little swelling, but much pain. The leg was dressed antiseptically. The following morning there was more swelling. Hot applications were applied and changed frequently for twenty-four hours, at the end of which time the pain had increased. The pulse was 120, temperature 102 F., and marked gangrene had made its appearance. The thigh was amputated rapidly at the junction of the middle and upper third, but the patient died six hours after the operation, just four days after the injury.

The second patient sustained a compound fracture of the left radius near the wrist. On the fifth day following the injury evidences of sepsis set in about the hand, which was freely incised and dressed in hot bichlorid gauze. During the next twenty-four hours the pulse ran up to 116, and the temperature to 104 F. The skin on the arm began to show a dusky brown color which spread rapidly toward the shoulder, crepitation in the cellular tissues could be felt, and gangrene was evident. Amputation was advised, but was not consented to until four hours later, when the arm was amputated near the shoulder. The stump was left wide open and dressed with hot bichlorid gauze for ten days. After a long and stormy convalescence the patient made a good recovery.

American Journal of Obstetrics, New York.

February 9.

- 67 Toxemia of Pregnancy. I. Strauss, Ithaca, N. Y.
- 68 "Surgical Treatment of Retrodisplacements of the Uterus. J. W. Bové, Washington, D. C.
- 69 "One Hundred Consecutive Abdominal Sections, Without a Death. W. J. S. McKay, Sydney, Australia.
- 70 "Fibroma Molluscum Gravidarum; New Clinical Entity. S. M. Brickner, New York.
- 71 The Dermatoses of Pregnancy. S. Pollitzer, New York.
- 72 "Abdominal Pregnancy, Persisting Beyond the Normal Period of Gestation. C. A. L. Reed, Cincinnati.
- 73 "Further Consideration of Mesenteric Cysts. O. G. Pfaff, Indianapolis.
- 74 Treatment of Face Presentations. A. E. Clarke, Cambridge, Mass.
- 75 Treatment of Puerperal Eclampsia. E. G. Zinke, Cincinnati.
- 76 Intermittent Hydrosalpinx. P. Findley, Chicago.
- 77 Pus Collections in the Female Pelvis. H. Grad, New York.
- 78 Case of Melena Neonatorum. A. E. Blount and S. M. Gardner, Chicago.

68. Retrodisplacements of Uterus.—Bové insists on the utmost importance of being absolutely familiar with the conditions, pathologic and anatomic, in each individual case. Inasmuch as no one surgical operation is applicable to every case, the surgeon who excludes from his curriculum some of the procedures that are based on principles that do not violate laws of function and pathology, and sees no necessity for anything but shortening round ligaments or ventrosuspension, or what not, will necessarily fail from misapplication. Many cases will need no operation on the uterus for the displacement *per se*; but many times diseased and adherent appendages will demand appropriate treatment. This may be, indeed in a large proportion of cases will be, ablation. The careful observer will find that this procedure, properly executed, has remedied the displacement. Bové warns the pelvic surgeon against the improper application of ligatures in removal of the appendages, to-wit, placing them so as to shorten the posterior surface of the broad ligament or to approximate the distance between the uterine cornua and the sacral promontory.

He suggests that a uterine body very jagged and bleeding on its posterior aspect after separation of adhesions, as a rule, should be removed if the appendages are sacrificed. Future trouble from new adhesions with the subsequent retroversion, endometritis, etc., is so frequently experienced that it may be confidently expected when this rule is violated. When tumors are plainly the cause of retrodisplacement and are removed, due care should be taken to learn whether or not this operation does not entirely remedy the condition. Usually it will do so, and in such an event nothing further should be done. A floating spleen should be removed, a stomach that mechanically acts as an etiologic factor should receive appropriate treatment, as should a lacerated cervix, endometritis, injuries

to the pelvic fascia, subinvolution and cervical hypertrophy in any diameter. The sound principles to employ as guides are, principally, address study and treatment to the existing abnormalities, whether of a congenital or an acquired variety, and to regard the displacement as of secondary importance.

69. Prophylaxis in Abdominal Sections.—McKay emphasizes the importance of prophylactic measures in cases of abdominal sections. He believes that the good results obtained by operators are attributable entirely to the careful preparation of the patient before operation.

70. Fibroma Molluscum Gravidarum.—Brickner describes this condition as a lesion of the skin appearing in the latter half of pregnancy, bearing the histologic characters of fibroma molluscum, but differing from it clinically in its total disappearance postpartum at a time when the other regenerative processes are being completed. Its distribution is limited to the neck, the breasts and the submammary area. The lesions are frequently pigmented, but this is not always the case and is not an essential element of the condition. The pigment runs from a light yellowish brown to a dark brown. The disease forms a clinical entity, hitherto undescribed, whose essential elements are the appearance of fibrous mollusca during pregnancy and their disappearance postpartum. Pathologically the group belongs to the group of fibrous molluscum.

72.—See abstract in THE JOURNAL, Oct. 14, 1905, page 1193.

73. Id.—Sept. 30, 1905, page 1022.

Virginia Medical Semi-Monthly, Richmond.

February 9.

- 79 Operation for the Radical Cure of Inguinal Hernia Under Cocain Anesthesia. S. McGuire, Richmond.
- 80 Operative Treatment for Tumors of the Neck. J. S. Horsley, Richmond.
- 81 Appeal for Nature's Balance Wheel.—Moderation. E. T. Brady, Abingdon, Va.
- 82 Carcinoma of the Uterus. G. B. Johnston, Richmond.
- 83 "How Physicians Encourage the Use of Patent Medicines. J. T. Graham, Wytheville, Va.
- 84 Galvanic Treatment of Habitual (Chronic) Constipation. M. W. Peyser, Richmond.
- 85 Principles of Surgery. S. McGuire, Richmond.
- February 23.
- 86 Acute Primary Meningitis. J. B. DeShazo, Ridgway, Va.
- 87 Have We Progressed? D. L. Field, Jeffersville, Ind.
- 88 Skin Cancer. N. T. Dalaney, Bristol, Tenn.
- 89 Headaches. O. Wilkinson, Washington, D. C.
- 90 Our Business Opportunities. R. O. Huffaker, Chucky, Tenn.
- 91 Case of Gastro-Duodenostomy. J. S. Horsley, Richmond.
- 92 Cause of Pneumonia. H. G. Graham, Gresham, Neb.

83. How Physicians Encourage the Use of Patent Medicines.—A too great indifference to patients' complaints is mentioned by Graham as one of the many ways in which physicians encourage the use of patent medicines. Even though the symptoms are purely imaginary, the physician should give them careful attention so that the patient will not be gobbled up by the luring advertisements of some patent medicine which gives him relief from his imaginary condition. There is another habit that many physicians have formed, and that is using too many stock formulas. Their use begets the habit of prescribing by routine, and although many of these compounds are good, they will not suit every case for which they are recommended. Then there is the habit of prescribing proprietary medicines. These relieve the patient but do not cure him. By studying each individual case carefully and treating it as indicated, Graham says that these evils can be overcome.

Journal of the Minnesota State Medical Association and the Northwestern Journal, Minneapolis.

February 1.

- 93 Venesection, Then and Now. C. F. Warden, Mankato.
- 94 Systematic Effects of Cardiac Insufficiency. J. S. Holbrook, Mankato.
- 95 Anemia and a Satisfactory Septum Operation. R. A. Campbell, Minneapolis.
- 96 "Case of Renal Decapsulation for Chronic Bright's Disease. L. F. Schmuss, Mankato.
- 97 Skin-Grafting in Burns of the Hands. A. E. Wilcox, Minneapolis.
- February 15.

- 98 Renal Insufficiency from Autotoxic Strain as Related to Nephritis, and Its Treatment. G. F. Butler, Chicago.
- 99 The State Board of Medical Examiners—A Criticism. A. Sweeney, St. Paul.
- 100 Considerations on Eye-strain and the Neurologists. E. J. Brown, Minneapolis.
- 96.—See abstract in THE JOURNAL, Sept. 9, 1905, page 812.

Oklahoma Medical News-Journal, Oklahoma City.

February.

- 101 Far from the Maddening Crowd. W. B. Pigg, South McAlester, I. T.
- 102 Multiple Neuritis. M. A. Bliss, St. Louis.
- 103 Medicine as a Business. A. D. Updegraff, Anthony, Kansas.
- 104 Latent Rheumatic Conditions. J. R. Phelan, Oklahoma City.
- 105 Physiologic Therapeutics. E. C. Edwards, La Junta, Colo.
- 106 Limitations of Medicine. R. V. Pierce, Howard, Kans.

Journal of the Missouri State Medical Association, St. Louis.

February.

- 107 Recurrent Zoster and Neuralgic Repeating Herpes. J. Grindon, St. Louis.
- 108 Congenital Dislocation of the Hip. N. Allison, St. Louis.
- 109 Benign Tumor of the Breast. R. Hill, St. Louis.
- 110 Rectal Palpation. E. A. Babler, St. Louis.
- 111 Medical Observations in the Far East. M. McLean, St. Louis.

American Practitioner and News, Louisville, Ky.

February.

- 112 Injuries of the Urinary Bladder. I. Abell, Louisville.
- 113 Vernal or Spring Conjunctivitis. W. Cheatham, Louisville.
- 114 Paraffin Injections. W. B. Pusey, Louisville.
- 115 Prophylaxis of Scarlet Fever. E. S. King, Bluff City, Tenn.
- 116 Injuries of the Head. S. Anderson, Louisville.

Canadian Practitioner and Review, Toronto, Canada.

February.

- 117 Cataract and Optic Nerve Atrophy. J. P. Morton, Hamilton.
- 118 Medical Thoughts, Facts and Fancies. J. S. Sprague, Stirling, Ont.

Journal of Nervous and Mental Disease, New York.

February.

- 119 Progressive Muscular Atrophy: A Study of the Causes and Classifications. C. L. Dana, New York.
- 120 Hysterical Stigmata Caused by Organic Brain Lesions. H. H. Hoppe, Cincinnati.
- 121 Case of Cerebral Monoplegia Probably Representing the Early Stage of a Unilateral Ascending Paralysis Due to Degeneration of the Pyramidal Tracts. C. K. Mills, Philadelphia.
- 122 Separate Sensory Centers in the Parietal Lobe for the Limbs. W. G. Spiller, Philadelphia.

New York State Journal of Medicine.

February.

- 123 Present Status of Vaginal Cesarean Section. M. Stamm, Fremont, Ohio.
- 124 Acid Intoxication of Pregnancy. H. M. Painter, New York.
- 125 Experiences with Apomorphia. G. H. Peddie, Perry, N. Y.

Kansas City Medical Index-Lancet.

February.

- 126 Thoughts on Infection; Particularly its Secondary Action on the Heart. C. B. Hardin, Kansas City.
- 127 Lectures on Nervous and Mental Diseases. J. Punton, Kansas City.
- 128 Hemorrhoids and Their Treatment by the Ethical Practitioner. A. W. McArthur, Kansas City.

Vermont Medical Monthly, Burlington.

February 15.

- 129 Diseases of the Nutrition, Diabetes, Gout, Obesity and Gallstones. A. Lorand, Carlsbad, Austria.
- 130 Legal Requirements of the Medical Profession. C. J. Russell, Burlington.
- 131 Reciprocal Relations of Vermont. W. Scott Noy, Underhill.
- 132 Wood Alcohol Poisoning. H. A. Bogue, Richford, Vt.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

February 17.

- 1 Relation of the Medical Profession to War. A. H. Keogh.
- 2 Tuberculous Disease of the Lungs and Larynx. B. Bramwell.
- 3 Acute Abdominal Disorders. G. Heaton.
- 4 Stagnation of Food in the Stomach. A. McPhedran.
- 5 *Review of a Series of Operations for Cancer of the Stomach. B. G. Moynihan.
- 6 *Treatment of Perforating Typhoid Ulcers. F. L. A. Graves.
- 7 *Treatment of Diphtheria. T. B. Rhodes.

3. Acute Abdominal Disorders.—Heaton discusses the differential diagnosis between acute intestinal obstruction and other conditions which closely simulate this affection in their symptomatology and which often are mistaken for obstruction. The affections discussed in this connection are biliary or renal colic, perforation of gastric or duodenal ulcer, rupture of an appendiceal abscess, tuberculous peritonitis, acute hemorrhagic pancreatitis, and embolism or thrombosis of the superior mesenteric vessels. No new points are brought out.

5. Cancer of the Stomach.—Moynihan has operated on 59 patients suffering from cancer of the stomach. Gastroenterostomy was performed 35 times, with 5 fatalities. The anterior operation (with Murphy's button) was done 7 times, with 2 fatalities. The posterior operation (with suture) was done

28 times, with 3 fatalities. Gastrectomy was done 10 times, with 3 fatalities. The complete operation was done once, with one fatality; the partial operation was done 7 times, with one fatality, and the partial operation, with resection of the transverse colon, was done twice, with one fatality. Gastrostomy, for carcinoma at the cardiac end of the stomach, was done 5 times, with no fatality. Jejunostomy was done 3 times, with no fatality. Exploratory laparotomy (operation not necessary or not possible) was done 6 times, with fatality. Of the 30 patients who survived gastroenterostomy, 20 were traced to the time of their death; 6 are alive and well, and of 4 nothing is known. The earliest death among these occurred in the fourteenth week after operation, the latest two years and four months after operation. Of the gastrectomy cases, one patient has lived four and a half years and is quite well and free from recurrence. Four others have survived the operation between two and a half years and five months. The gastrostomy patients lived from five to seventeen months after operation. The jejunostomy patients lived from four and a half to eleven weeks after operation. In all these cases the stomach was so extensively involved that gastroenterostomy was impossible.

6. Treatment of Perforating Typhoid Ulcers.—Greaves reports 3 cases of this condition in which the patients were operated on. Two of the patients recovered completely.

7. Treatment of Diphtheria.—Rhodes believes that the very slightest excuse should be sufficient for the diagnosis of diphtheria in a child. Even so slight a sign as dryness or a parched appearance of the external nares in a child who seems poorly nourished is sufficient to indicate, in most cases, that diphtheria toxin is being manufactured, probably in the nasopharynx. He holds that diphtheria antitoxin never does any harm to a child and that it will assist in curing illness due to some disturbance in the throat or nasopharynx, even if that illness is not actually due to diphtheria. The time lost by delay in giving antitoxin in diphtheria is often sufficient to render the chance of recovery very small. Rhodes states that, though many experienced workers in the field of infectious diseases insist that very large doses are much more efficacious than small ones, sufficient stress is not laid on the fact that small doses, even though given late in the disease, will often just turn the scale in favor of the patient, or at least assist the patient to fight the disease and to hold it in check until the child can be taken to a hospital, where more antitoxin can be given. Finally, if every general practitioner would carry a syringe and one phial of antitoxin much more antitoxin would be given before the child is removed to hospital; the necessary delay in getting the antitoxin at present, and the difficulty, sometimes, in obtaining it, especially in country districts, being possible reasons why this treatment is not adopted immediately in all cases.

The Lancet, London.

February 17.

- 8 Appendicectomy and its Possibilities. W. H. Bennett.
- 9 Physical Anthropology and Ethnology of British New Guinea. C. G. Seligmann.
- 10 The Acute Abdomen. W. H. Battle.
- 11 *Large Teratoma of the Neck Successfully Removed from an Infant Three Weeks Old. A. N. McGregor.
- 12 *Case of Persistent Aberrant Thymus. E. W. Sharp.
- 13 *Saccular Dilatation of the Small Intestine. E. Cantley.
- 14 Pneumothorax Due to Muscular Exertion in a Healthy Lad. W. G. Nash.
- 15 Cases of Stomatitis and Tonsillitis in which Vincent's Spirocheta and Bacillus Were Present. W. H. Harwood-Yarred, and P. N. Pantou.
- 16 Case of Addison's Disease Rapidly Fatal, with Symptoms of Acute Toxemia. H. C. Lecky.
- 17 *Method of Removing Carcinoma of the Ascending Colon. F. D. Bird.
- 18 Malta Fever in India—Isolation of the Micrococcus Melitensis from the Milk of a Domestic Goat in the Punjab. W. H. C. Forster.

11. Teratoma of Neck.—The tumor in the case cited by McGregor was a multilocular cystic mass of about the size of a turkey's egg and of an irregularly conical shape. It contained both mesoblastic and epiblastic elements, so that it probably originated from an abnormal development of one or more of the branchial arches of the embryo. Some of the cysts were lined with a single layer of cuboidal or round cells, while others appeared to have several layers of cells. Some of the cysts had the characters of a dilated gland duct, and gave an

adenomatous appearance to the tumor section. The intercystic part of the tumor contained cartilage, spindle-celled connective tissue, non-striated muscle, arteries, veins and capillaries.

12. **Persistent Aberrant Thymus.**—Sharp's patient, a woman, aged 24, sought advice about a swelling in her neck, which had first been noticed when she was 11 years old, at which time constitutional treatment was tried to reduce it. It had gradually grown larger and had given rise to a marked swelling, situated at the base of the neck on the left side and extending from beneath the posterior border of the trapezius and also passing behind the clavicle. The growth, which was of about the size of an ordinary potato, had the structure of a lobulated gland with a capsule and intersections of fibrous tissue. On section it was found to consist of a mass of leucocytes, containing in their midst numbers of Hassall's concentric corpuscles of various sizes, some invaded by the leucocytes. The growth was divided by fibrous intersections, of which the larger contained fair-sized blood vessels.

13. **Saccular Dilatation of Small Intestine.**—Cautley describes a remarkable anomaly of development in a female infant who died at the age five weeks. She was admitted to the hospital with a history of vomiting since the third day of life. This had steadily persisted, and after the seventh day had been associated with diarrhea. The vomiting followed every meal. The abdomen was unduly prominent on the right side and a tumor of about the size of a pullet's egg could be felt to the right of and on a level with the umbilicus. The tumor was fairly movable, elastic, sometimes dull and at others resonant on percussion, and it would disappear entirely after moderate gentle manipulation. The liver dullness in front was completely absent. An inguinal hernia was present on the left side. The patient took food well, the vomiting ceased and the stools became almost normal. Later vomiting began again, but it stopped after two doses of cocaine and a return to the diet of whey. Finally she became very feeble and cold and died from asthenia. There was no return of vomiting or diarrhea.

On opening the abdomen a cyst with opaque walls was seen immediately below the liver. The transverse colon was pushed downward and the liver upward, so that the edge of the latter was not visible, thus counting for the absence of liver dullness anteriorly during life. The cyst was considerably larger than the stomach, which was of normal size. The cyst measured three inches vertically, two inches transversely and one inch in the anteroposterior diameter. It was situated in the mesentery, arising from the gut at a distance of fifteen inches from the pylorus. It communicated with the gut by two adjacent openings close together; the larger one was slightly smaller than a dime and the smaller one was quite minute. The edges of the openings were smooth and irregular. In general appearance the cyst was similar to a saccular aneurism of the aorta with a small orifice. The duodenum and a small part of the jejunum above the origin of the cyst were much dilated and hypertrophied, while, below, the intestine was thin-walled and collapsed. Opposite the cyst the lumen of the canal seemed somewhat narrowed from pressure, but there was no true stricture. Both cyst and intestines contained normal bile-stained contents. Microscopically, the wall of the cyst was identical with that of the intestine from which it arose, the muscular tissue being considerably hypertrophied.

17. **Removal of Carcinoma of Colon.**—In a case of carcinoma of the ascending colon, about three inches beyond the cecum, Bird operated according to a method devised by him. The tumor is located and, its removal being decided on, the transverse colon is pulled down, two forceps are applied to it close together, a heavy one on the proximal side, and the gut is divided with large scissors in one cut. Swabs are used to avoid soiling the cavity, and the heavy forceps attached to the gut is allowed to hang out of the wound, a proceeding which puts the mesocolon on the stretch. The branches of the middle colic artery and the right colic artery are tied far back by a single ligature, which devascularizes a large portion of mesocolon, which can be severed by large scissors. Forceps are then placed on the ileum, about four inches from the junction of the large and small intestines, and the gut is divided; the distal end now depends from the wound, so that the whole portion to be resected is hanging by the ileocolic artery and some peritoneum.

This blood vessel is ligated far back, the isthmus of tissue left is divided close to it, and the resected gut, two forceps and the ileocolic glands fall out of the wound altogether. There is no need to investigate the important ileocolic lymphatic area, for it has gone, but the mesocolic region should be examined for glands which may have escaped the section.

Thus four, or at most five, arteries have to be tied; the transverse colon is divided at right angles to its lumen, but the ileum, if it approaches the caliber of the colon closely enough to allow of apposition, is severed in a direction obliquely downward to the mesenteric attachment, which, of course, increases the size of the open end. If the disproportion be too great, the ileum is also separated at right angles, the patent lumen to be afterward applied, by means of temporary sutures, to an incision, proportionate in length, in the fundus of the colon about two inches from the gaping end, through which the stay ligatures are pulled, reversing Maunsell's method. The new ileocolic junction is quickly made by through-and-through sutures, to be reinforced after the ileum is pulled back by a continuous Lembert suture.

Glasgow Medical Journal.

February.

- 19 Double Lip (Glyptrophy of Labial Glands). G. H. Edington.
- 20 *Case of Exophthalmic Goiter in a Man Treated Successfully. W. F. Somerville.
- 21 Roentgen Rays in the Diagnosis of Urinary Calculus. J. R. Riddell.

20. **Treatment of Exophthalmic Goiter.**—The treatment adopted in the case reported by Somerville was isolation, with, at first, complete rest in bed. The windows of the large bedroom were wide open night and day. The patient, a man, was placed on a very liberal diet. In addition to three "square" meals, of which he partook largely, he had soup twice, a large afternoon tea and eighty ounces of milk per diem. He was twice daily treated by the high-frequency currents and every second day five m.p. were applied by the continuous current for ten minutes, the positive pole being placed over the thyroid, the negative at the back of the neck. The patient had, further, heart massage each day, i.e., gentle stroking over the precordial region by a skilled masseuse. During the last two weeks he was permitted to go out, when the weather was fine, for a short walk on level ground. The medicinal treatment consisted in the use of the thyrotoxin, which was replaced later by strophanthus, 2 minims every four hours, and thymus gland, 5 grains thrice daily. Later, dram doses, three times a day, of syrup of hydriodic acid were commenced and continued to the end. Smoking was at first prohibited, but later one cigar a day was allowed; no alcohol was administered, but the patient had *café au lait* twice a day and tea once. All the symptoms show signs of improvement, with the exception of the rate of the pulse, which remains from 87 to 95 a minute. Somerville attributes this return of tachycardia to the want of the high-frequency currents, which have an inhibitory influence on the heart's action.

Dublin Journal of Medical Science.

February.

- 22 Diagnosis and Treatment of a Perforated Gastric Ulcer. A. R. Parsons.
- 23 *Treatment of Gastric Vomiting with Oxalate of Cerium. C. A. Sweetnam.

23. **Cerium Oxalate in Vomiting.**—Within the last few months Sweetnam has been using cerium oxalate largely in cases of vomiting due directly to gastric disease, usually giving six-grain doses three times a day in adult patients, combined with ten-grain doses of carbonate of bismuth. In almost every case the result has been most satisfactory, and in several instances, when bismuth alone has failed to cause any marked improvement, a rapid change for the better has appeared when cerium oxalate has been added to the medicine. In gastric ulcer the pain is relieved and the vomiting ceases almost immediately; the same result occurs in chronic catarrhal gastritis, especially the form which is so common among badly nourished young women, whose work deprives them of their proper quantity of fresh air. In cancer of the stomach, although a permanent cure can not be expected, the symptoms are relieved and the patient's life is prolonged and made far more comfortable than by any other means; the pain is lessened, hematemesis ceases and the patients who have been unable to retain the smallest quantity of food taken by the mouth are soon able to retain several pints

of milk per diem and also small quantities of the prepared farinaceous foods. This, of course, does not hold good in cases in which the pyloric region is largely involved and in which the symptoms are mainly due to a mechanical obstruction of that opening.

Presse Médicale, Paris.

24 (XIV, No. 5.) *Le traitement chirurgical de l'anévrisme sous-claviénaire. Savariaud.

25 *La migraine des arthritiques. P. Hartenberg.

26 *Traitement des ulcères variqueux par l'incision circonferentielle de la jambe. Hardouin.

24. Surgical Treatment of Aneurism of Subclavian Artery.—Savariaud calls attention to the advantages of making more than one incision, thus obtaining better oversight of the field; also to the fine results from the use of the ligature in the case reported, notwithstanding the dilated and weakened condition of the artery; also to the advantage of hollowing out a tunnel underneath the clavicle instead of resecting it, thus refraining from impairment of function later. Another point which he emphasizes is that the presence of coagula does not necessarily imply healing or even a tendency in that direction, as he has frequently had occasion to observe in the clinic and in the cadaver. The part of the subclavian involved close to the axillary is comparatively free from collaterals, and the branches of the axillary anastomose so frequently that there is no danger of gangrene. Out of 4 cases in which the second part of the subclavian and 9 in which the third part was ligated, only 1 patient died of pulmonary embolism. Ligature of the first part of the artery is much more serious. Resection of the aneurism is more dangerous than mere ligation; 1 patient died out of the 7 on record treated by extirpation. These conclusions apply only to aneurism outside of the scalenus muscle. When the origin of the artery is involved the indications and prognosis are quite different.

25. "Rheumatic Migraine."—Hartenberg refers to the headache which occurs as one manifestation of the peculiar diathesis or disposition which predisposes to joint disease. He calls it the "migraine of the arthritic," and is convinced that the pain is the result of compression of the nerve terminals by congested blood vessels. Everything that increases the pressure or the spasm—stooping over, any shock, compression or electric stimulation—increases the pain. The nausea and the photophobia are explained by the disturbances in the circulation through the meninges. All these angiospastic phenomena can be reproduced by irritation of the cervical sympathetic. The pathologic irritation is the result, he thinks, of a rheumatoid infiltration of the muscles, a "rheumatic myositis." When the case is recent the muscles are still elastic and supple, but in cases of long standing hard lumps can be palpated in the muscles. The myositis proceeds by waves, under the influence of fatigue, traction on the muscles, dampness, etc. The ganglia may be indurated and the skin infiltrated and thickened. The superior cervical ganglion is always hypertrophied and tender, and sometimes the inferior and the middle ganglia. This is the true cause of the migraine, which may be regarded as a reflex neurosis, similar to certain forms of reflex epilepsy. He has been very successful with treatment based on these assumptions; sodium salicylate is applied directly to the affected tissues. He accomplishes this by polar electrolysis, placing a negative electrode, impregnated with a 20 per cent. solution of sodium salicylate, on the neck, with the positive electrode on the abdomen or on the back in the lumbar region. The current he prefers is from 15 to 50 milliamperes, and each sitting is half an hour in length. Under the influence of the galvanic stimulation and of the specific drug the cervical rheumatism rapidly subsides. The attacks of migraine become milder and recur at longer and longer intervals until they finally cease altogether. On account of the tendency to recurrence it is advisable to resume the electric treatment with a few sittings from time to time. Hartenberg has treated a number of patients on these principles in the last two years, the results corroborating his conception of the causal mechanism and suggesting that possibly something of the kind may be a factor in other neuroses, especially in certain forms of epilepsy.

26. Circular Incision of the Leg for Varices.—Hardouin's technic is practically the same as when commencing amputa-

tion of the leg, the incision running around the limb. He has found the results extremely satisfactory, rapidly curing the severest cases of varicose ulcers and doing away altogether with the possibility of recurrence. One of the most remarkable benefits of the operation is the way in which the leg shrinks to normal size almost at once afterward.

Semaine Médicale, Paris.

28 (XXVI, No. 6.) Le corpus luteum. R. de Bovis.

29 (No. 7.) La splénectomie contre l'anémie splénique et la maladie de Banti. B. Schiassi (Bologna).

30 Mortalité par tuberculose en France et en Allemagne. (Germany).

28. Rational Operative Treatment of Splenic Anemia.—Schiassi reviews the history of splenic anemia and Banti's disease and their operative treatment. In certain individuals, he says, the spleen seems to be less resistant than normally and infectious germs are liable to locate in that organ and to cause structural changes which may induce functional disturbances. Removal of the spleen is a logical method of treatment, but is not proving so satisfactory in practice as was expected. Schiassi believes that the trouble in splenic anemia, with or without cirrhosis of the liver, is some metabolic, biochemical phenomena which affect the blood injuriously in the interior of the spleen and nowhere else. Treatment should aim to reduce the quantity of blood circulating sluggishly in the enlarged interspaces and to hasten the circulation through the spleen. To obtain this double result he tries to induce the formation around the spleen of a large capsule of connective tissue. This he accomplishes by introducing broad overlapping strips of gauze to form an envelope of a single layer of gauze entirely around the organ after most of its surface has been scraped with the sharp curette. The incision is sutured in tiers, with the ends of the strips of gauze emerging. On the fifth or sixth day the upper strip of gauze is pulled out and the other strips on the succeeding days, one each day until all are removed by the ninth or tenth day, and the rest of the incision can be sutured. The result of this irritation of the surface is the formation of a large amount of connective tissue, which clings to the spleen, reducing its size and congestion, while a network of new veins forms and diverts part of the circulation from the interior of the spleen. He has performed this operation on two patients with splenic anemia. In the first patient the hemoglobin had been reduced to 24 per cent. and the white corpuscles to 1,800 to the cubic millimeter, while the spleen measured 18x32 cm. Four months after the operation the hemoglobin had increased to 92 per cent. The hemoglobin in the second patient had been reduced to 40 per cent. and there were only 4,000 white corpuscles to the cubic millimeter, while the spleen measured 30x26 cm. In the course of three months after the operation the hemoglobin reached 84 per cent. The spleen in each case had become reduced to one-fifth its former size. The great improvement thus gained has persisted unmodified for a year. He regards fresh bone marrow and rest in bed, with abundant feeding, as important adjuvants for operative treatment. He has had no experience with this operation in Banti's disease, but thinks that omentopexy supplemented by this procedure is theoretically indicated, the former suppressing the ascites and the latter putting an end to the morbid intrasplenic metabolic phenomena. He operated four years ago on a woman with pronounced splenomegaly and cirrhosis of the liver with ascites, a typical case of Banti's disease, his intervention consisting in omentopexy and splenopexy. The patient is still in comparative health, the great improvement realized persisting to date.

Berliner klinische Wochenschrift.

30 (XLII, No. 3.) *Zur Kasuistik des doppelseitigen Empyems. S. Laache.

31 *Anti-Hämolytische Biologische Blood Test.—Die forensische Blutidentifizierung durch anti-hämolytische Wirkung. M. Neisser and H. Sachs.

32 Die Phosphorylase-Behinderung des Subtilis durch das Subtilis-Aztrepsin. E. Well and H. Nakayama.

33 *Inhibitory and Anesthetic Properties of Magnesium Salts.—Die hemmenden und anästhetisierenden Eigenschaften der Magnesiumsalze. S. J. Netzer.

34 Conduction of Sensibility in Spinal Cord.—Leitung der Sensibilität im Rückenmark. M. Rothmann. (Concluded.)

35 Zur Behandlung der Neuralgien durch Alkoholeinspritzungen (alcohol injections). Schlosser.

36 Determination of Bacteria in Blood and Its Importance.—Nachweis von Bakterien im Blut und seine Bedeutung. H. Reitzke.

- 37 *Behandlung der Hemeralopie mit Leber-Substanz (Liver). H. Fabry.
- 38 Ein neues Tonsillen-Instrument. I. C. Henkes (Amsterdam).
- 39 (No. 4.) Behandlung der Lungen-tuberkulose mit Marurek's Serum. E. Stadelmann und A. Beney.
- 40 Behandlung der Tuberkulose mit dem Antituberkuloserum Marurek. E. Levin.
- 41 Zur Lehre von den Antikomplementen. C. Moreschl.
- 42 Risse in Temperature After Use of Thiosinamin.—Temperatur-Stiegung nach Thiosinamin-Gebrauch. E. Brinlitzer.
- 43 Die Prognose der togenen Meningitis. B. Heine.

30. Bilateral Empyema.—Laache has had 2 cases of bilateral empyema in his charge. One patient was a young man convalescing from pneumonia. Severe hemorrhage from the lungs followed an exploratory puncture of the second lung after the other lung had been punctured and was healing. The pus was removed by resection of a rib in the back. The patient succumbed in the second case, in which the empyema was of actinomycotic origin.

31. Antihemolytic Test for Blood.—This new test for forensic differentiation of blood spots was described recently in these columns on page 310. Further experience, Neisser states, has confirmed its delicacy and reliability.

33. Inhibiting and Anesthetic Action of Magnesium Salts.—The latest report on Meltzer's work with the magnesium salts was published in THE JOURNAL, March 3, 1906, page 647.

37. Liver in Treatment of Hemeralopia.—A few cases have been published here and there of remarkable benefit or cure of hemeralopia by feeding the patients with liver substance. Fabry reports another case in which the same remarkable result was obtained when the patient was given from 200 to 250 gm. of raw sheep's liver on three successive days. The patient was the native guide on an expedition in Africa. During the day his eyesight was above the average, but as the sun set he was unable to see at all. The affection had lasted three months, but subsided after the liver had been taken for three days.

Centralblatt f. Chirurgie, Leipzig.

Last indexed, page 311.

- 44 (XXXII, No. 52.) *Meine Methode der Gastroenterostomie, nebst Statistik der nach ihr gemachten Operationen. P. de Beule (Ghent, Belgium).
- 45 *Simple Technique for Extraction of Foreign Bodies in Urethra.—Ein einfaches Verfahren der Entfernung in der Harnröhre eingelegener Fremdkörper. P. Schroeter.
- 46 (XXXIII, No. 1.) Todinitis achillae arthritica als eine besondere Form der Achilles-Sehnen-Erkrankung. R. v. Baracz. Id. G. Drehmann.
- 47 Zur Roettung Verwundeter der Haut-Sarkome. Albers-Schönberg.
- 48 (No. 2.) Improved Technique of Resection of Shoulder.—Resektion des Schultergelenkes. A. Catterina.
- 49 Ring-Knoten (knois).—For Tying Deep Ligatures. A. Hofmann.
- 50 Zum Gallen-Stein-Ileus. F. Fink.
- 51 (No. 3.) *Zur Technik des Bier'schen Verfahrens bei der Stauungs-Hyperämie (congestive hyperemia). J. Mindes.
- 52 *Rhino-laryngeische Mitteilungen. L. Grünwald.
- 53 (No. 4.) Ueber primäre Naht ohne Drainage bei Früh-Operation der acuten Appendicitis (primary suture). J. Borellus.
- 54 (No. 5.) Zur Behandlung des Duodenal-Stumpfes bei der Resektions-Methode. Hilroth H. Kauch.
- 55 *Laminectomie und Nerven-Wurzel-Durchschneidung bei Neuralgie. R. Oehler.
- 56 (No. 6.) *Application of Water Power in Surgery and Orthopedics. Anwendung des strömenden Wasserkraft in der Chirurgie und Orthopädie (Ein neues System orthopädischer und medikomechanischer Apparate). Machol.

44. De Beule's Button for Gastroenterostomy.—De Beule remarks that a year's experience has confirmed the superiority of his button, which has now been used in 22 gastroenterostomies. It is a mechanical impossibility for the vicious circle to develop or for any bile or pancreatic juice to find its way back into the stomach. The passage through the button turns to form a right angle, the opening into the stomach being in the top of the button, while the opening in the duodenum is in the side. By this arrangement it is almost impossible for fluids to find their way around the button and to pass backward through it. Eight different surgeons have used the button to date, including Bier, Gersuny and De Beule himself, and the mortality has been only half that reported by the best surgeons from other methods. The new button has certain special features that commend it for cancer cases, he adds. It much shortens the gastroenterostomy and allows the patient to be fed from the first day.

45. Technic for Removing Foreign Body or Concrement from Male Urethra.—Schroeter has been successful with the following simple procedure: If any urine is able to escape past the

foreign body, the outer orifice is closed with the fingers and the patient is instructed to urinate as much as he can, forcing the urine into the urethra until it is much distended with it. The orifice is then abruptly released and the escaping flood sweeps out the foreign body with it. If no urine is able to pass the foreign body, he applies a constricting band above it and then injects water into the urethra to distend it from below, compressing the orifice and allowing the fluid to escape suddenly when the urethra has been sufficiently distended.

51. Technic of Congestive Hyperemia.—Mindes gives an illustration of the elastic roller and band which he uses for inducing congestive hyperemia. The aim is to induce red hyperemia; if too weak, the constriction does no good; if too strong, it causes blue or cold hyperemia and is liable to do serious damage. Consequently the roller band, allowing more accurate technic, has been found a great improvement. The roller is wound up with a key to the proper notch, where it is held by a click, holding the broad elastic band firmly in place.

52. Two Rhino-surgical Interventions.—One operation described by Grünwald was for the exposure of the interior of the nose and of all the accessory cavities at once, the particulars of the two incisions required being shown in two illustrations. The second operation illustrated is the resection of the vomer as the final step in the radical operation on the frontal sinus.

55. Laminectomy and Division of Nerves for Neuralgia.—Oehler commends an operation which he performed, after removal of a cancer in the breast, to cure the intense pain resulting from compression of the brachial plexus by some metastatic nodules. He exposed the dura by resecting the right arches of the fourth, fifth, sixth and seventh cervical vertebrae and of the first dorsal. He then resected the posterior roots of the fifth, sixth, seventh and eighth cervical nerves and of the first thoracic nerve. The wound was sutured at once without drainage, and the relief from pain amply justified the interference. The arm became entirely paralyzed, but this was inevitable from the way in which the nerves of the arm were imbedded in the metastatic nodules.

56. Application of Water Power to Surgery and Orthopedics.—Machol describes a method of correcting deformities by constant pressure, in use at Garr's clinic, in which the motive power is a stream of running water. The force is equable, can be exactly controlled, acts automatically and has other advantages which he enumerates. An illustration shows the apparatus adapted for correction of scoliosis. The patient lies on a duck extension table, the extension being applied to head and pelvis. The frame of the table is made of two pipes connected with the water system. An arching frame fits on the pipe and carries the pump contrivance with the attachment for applying the correcting pressure. A little manometer on each pump shows the exact pressure of the water. The water pipes can have as many branches as desired to apply correction at various points. The power applied is very even and constant, and can be kept up for hours under precisely similar conditions, the pressure yielding to and following the part to be corrected. He gives an illustration of the apparatus adapted to apply the water power in mobilizing joints, etc.

Zentralblatt für Gynäkologie, Leipzig.

Last indexed page 370.

- 57 (XXX, No. 1.) *Caesarean Section.—Zur Lehre vom Kaiserschnitt. R. Olshausen.
- 58 *Ueber die Verhütung der Fieberfälle im Wochenbett (prevention of puerperal morbidity). P. Zweifel. Reply by Ahlfeld in No. 3.
- 59 *Die Vaporisation des Uterus. K. Balseh.
- 60 Studium des Geburtsmechanismus. H. Sedlheim.
- 61 (No. 2.) *Ueber den Nachweis von Fleisch-Milchsäure in der cerebrospinal-Flüssigkeit Eklampsischer (meat lactic acid in cerebrospinal fluid). H. Pfäff and G. Lockemann.
- 62 *Eine seltene Indikation zum Kaiserschnitt (Caesarean section). Brunet.
- 63 Nüchtern zum Tonsurenverlust der Gebärmutter bei der Curettage (loss of elasticity in walls of uterus). C. van Tussemboom.
- 64 Geburt bei Uterus duplex bicornis cum vagina septa. F. Stähler.
- 65 (No. 3.) *Symphyseotomie oder Pubotomie? W. Stoeckel.
- 66 *Zur Hysteriefrage. A. Diderlein.
- 67 *Zur Anatomie und Technik der Pubiotomie. J. Tandler.
- 68 *Ueber die Art der Beckenerweiterung bei der Pubiotomie (enlargement of pelvis). W. Rosenfeld.
- 69 (No. 4.) *Ein Versuch die "Katheter-Cystitis" zu verhindern (prevention). R. Gersuny.
- 70 Puerperal Self-Infection.—Ein Wort zur meiner Rechtfertigung gegenüber Nitzig. F. Ahlfeld.

- 71 Kann in jedem Falle die Retention einer Placenta succenturiata diagnostiziert werden? A. Labhardt.
- 72 *Congestive Hyperemia in Gynecology.—Das Bier'sche Stauungs-
verfahren in der Gynäkologie. Kroemer.
- 73 Suction Hyperemia in Treatment of Suppurating Superficial
Wounds.—Die Klapp'sche Saugbehandlung bei eiternden
Hautwunden. J. Eversmann.
- 74 (No. 5.) Proportion of Sexes in Children Born.—Gesch-
lechts-Verhältnisse der Neugeborenen mit bes. Berücksich-
tigung der macerierten Kinder. M. le Mâle.
- 75 "Neues Instrument zur Ventrofixation des Uterus." F. Förster
(New York). Reply to J. Rudolph.
- 76 Zur Behandlung der Ureter-Fisteln bei der Frau. Neuretero-
cystostomie. A. Phänomenoff.
- 77 *Behandlung von Osteomalacia. A. Theilhaber.
- 78 (No. 6.) Dangers of Ventrofixation.—Gefahren der Ventro-
fixation. A. Calmann.
- 79 Zur Atonie des non-graviden Uterus. R. Asch.
- 80 *Menstruation während des Stillens (during nursing). E.
Essen-Müller.
- 81 Artery Forceps with Catch Opened by Pressure.—Arterien-
lemme nach Péan-Koeberle mit tangelant angeordneter
Sperrung, die durch einfachen Druck oben Vordrängen
der Griffe gelöst wird. K. Reinecke (Hamburg).
- 82 Instrument zur Stillung atonischer Blutungen nach der Geburt
(to control post-partum hemorrhage). H. Meyer-Ruegg
(Zürich).

57. **Cesarean Section.**—Olshausen or his assistants have performed Cesarean section in 138 cases. In 7 it was on account of eclampsia, in 6 for myoma, in 4 for carcinoma, in 5 on account of vaginofixation, in 3 for nephritis, in 2 for heart disease and in 2 for cicatricial stenosis in cervix or vagina. In two of the women Cesarean section was done twice, in 2 three times and in 3 four times, and these 12 patients with contracted pelves all recovered from their twenty operations. In 4 other cases the Cesarean section was followed by double ligation of each tube and excision of the part between the ligatures to prevent conception later. Olshausen's experience has been decidedly in favor of a very high incision in the abdominal wall, extending above the umbilicus and not approaching nearer than 8 cm. to the symphysis. The incision in the uterus must always avoid the placenta. Its site can usually be determined by the network of veins on the uterine wall. The anterior wall of the uterus usually protrudes more than the posterior wall when it carries the placenta. The course of the round ligaments is not a reliable guide. He never has hemorrhage when he injects ergot twenty minutes before the operation. His dose is 2 gm. of a 6 per cent. aqueous solution of ergotin, with 1 or 2 more gm. later, if necessary. The child is not injured by the ergot. The uterus should be straightened and the incision made in the median line. Compression of the cervix is superfluous and even injurious, as hemorrhage is liable to follow its suspension. He sutures with soft catgut, sterilized in alcohol-carbolic solution, and makes from eight to twelve sutures, taking up as much muscle substance as possible in each stitch, avoiding the peritoneum and decidua, and concluding with a running suture of the peritoneum, including a little of the muscle wall. In the 91 operations done for contracted pelvis he operated personally in 65 cases with 3 deaths, and his assistants in 26 cases with 6 deaths.

58. **Prevention of Puerperal Morbidity.**—Zweifel reiterates his former assertion in regard to the advisability of wiping out the clots of blood which accumulate in the rear of the vagina after childbirth. He is convinced that they form a nest for germs, and now makes a point of removing them on his first visit to the parturient, a few hours after delivery. The clots are wiped out with a dry cloth through a speculum or removed with forceps if the woman is unable to force them out herself. The morbidity in the last series of 243 births was 5.7 per cent. During the last half of 1904, when rubber gloves were used and the vagina was thus wiped out dry, the morbidity in 629 cases was only 7.7 per cent. Over 92 per cent. of the patients recovered without temperature, including several with gonorrhea or lues.

59. **Vaporization of Uterus.**—Baisch shows in colored plates the histologic findings after application of steam to the interior of the uterus. The effect depends on the thickness of the mucosa; the thinner it is the more effectual the cauterization by the steam. The experiences at Döderlein's clinic indicate the advantage of preceding the vaporization with ennettement with an interval of about six days. Any infection, septic or gonorrheal, either of the uterus or adnexa, must be regarded as a contraindication for vaporization. The only cases for which it is adapted are those of pure, uncomplicated, preclimacteric hemorrhages. For such cases vaporization is a much more con-

servative procedure than total extirpation, and the results by the above technic proved invariably satisfactory in Baisch's experience. He has thus treated 15 women.

61. **Lactic Acid in Fluids of Eclampsia.**—Zweifel's assertions in regard to the importance of lactic acid as an etiologic factor in eclampsia were mentioned recently in these columns on page 545. His statements are confirmed by the finding of the same salt of lactic acid in the cerebrospinal fluid of 3 eclamptic women.

62. **Cesarean Section for Varices in Vagina.**—Brunet's patient was a young primipara who had had repeated hemorrhages from the vagina since the onset of labor. The moment the tampons were removed the bleeding recurred. Only 2 patients were saved under these conditions in the 18 cases on record, but mother and child recovered in this case after Cesarean section. The varices rapidly subsided afterward. It is possible that injections of ergot in time might have aided in controlling the hemorrhage.

65-68. **Hebotomy: Extramedian Symphyseotomy.**—Bumm has performed this operation 13 times and healing was by primary intention in all but one case. There were no after-disturbances in the gait, and the children were all born alive. Stoeckel thinks that this operation should be restricted to pelves with a conjugata vera of not less than 8 cm., although it might be possible, he adds, to saw the pubic bone on each side and thus to enlarge the pelvis sufficiently even in the severer cases. Döderlein has performed the operation in 16 cases, leaving all the mothers and children in good condition. He indorses Zweifel's advice to await spontaneous delivery after the bone has been sawed. Tandler discusses the anatomy and technic of the operation, analyzing 19 of the latest cases that have been published by others. Rosenfeld reports research on the cadaver which shows the necessity for varying the technic to suit the particular kind of pelvic deformity.

69. **Improved Catheter to Prevent Cystitis.**—Gersuny ascribes to mechanical injury of the bladder wall a certain proportion of the cases of cystitis that develop after repeated catheterization. In order to prevent this he uses a short curved glass catheter with a projecting shoulder, which prevents its entering beyond a safe distance. In 35 cases in which this catheter was used after operation, cystitis developed in only one instance, although slight urethritis was observed in 4 cases. The patient with cystitis had required catheterization thirteen times and the others four or five.

72. **Congestive Hyperemia in Gynecology.**—Kroemer uses for the suction speculum a wide glass tube with a rubber tube connecting it with the suction pump and a graduated reservoir. His experience suggests that this method of treatment may prove admirable for acute inflammatory processes in the genitalia and for localizing an infectious focus. He thinks it should be of value also in treatment of the consequences of inflammatory processes, either by the active-passive hyperemia to soften strictures and scar tissue, promote absorption of infiltrates, etc., or for the relief of passive hyperemia, in which case it is best to combine it with scarifications. The latter combination might prove effectual, he says, in promoting involution of the puerperal uterus.

77. **Treatment of Osteomalacia.**—In Theilhaber's case the patient was clinically cured of osteomalacia by removal of the sound ovaries by way of the vagina. A year later monthly hemorrhages were noticed resembling menstruation and the symptoms of osteomalacia recurred. The bleeding was traced to a polyp in the uterus; after its removal the hemorrhages ceased and the symptoms of osteomalacia subsided also. He explains osteomalacia as an affection of the metabolism. Removal of the ovaries has a modifying effect on the metabolism. Other measures which modify metabolism are liable to prove useful also in osteomalacia, including venesection. In his case the pains vanished at once after the removal of the ovaries.

80. **Menstruation of Nursing Women.**—Essen-Müller states that menstruation reappeared in 60 per cent. of 427 women nursing their infants whom he examined. Menstruation appeared during the first two months after childbirth in about one-third. Mayer found a proportion of 57.8 per cent. in 685 women. The reappearance of the menses soon after childbirth, he states, may thus be regarded as a normal phenomenon.

Münchener med. Wochenschrift, Munich.

- 83 (LII, No. 52.) *Superheated Air in Gynecology.—Beiträge zur Heisslufttherapie bei Becken-Erkrankungen. Th. Jung.
- 84 *Die Tuberkulin-Therapie in der ambulanten Behandlung und bei Fiebernden (for out-patients and febrile cases). Krause
- 85 *Ueber Brachialgie. H. Brassert.
- 86 Acetone for Rapid Imbedding in Paraffin.—Ueber die Azetonanwendung zur Paraffineinbettung. A. Bruck.
- 87 Kompression der harnführenden Organe durch Adnextumoren (compression of ureters). M. Nassauer.
- 88 Extensions-Bahre (Hitter). A. Hofmann.
- 89 *Ueber die Hektomie (extramedian symphyseotomy). A. Bauereisen. (Concluded.)
- 90 (LIII, No. 1.) *Operations in Sauerbruch's Air Chamber.—Bericht über die ersten in der pneumatischen Kammer der Breslauer Klinik ausgeführten Operationen. Sauerbruch.
- 91 *Beitrag zur Tuberculose-Frage auf Grund exp. Untersuchungen an anthropoiden Affen. v. Dugern.
- 92 *Fatigue Toxin.—Ermüdungstoxin und dessen Antitoxin. W. Weichardt.
- 93 Acquired Photoactivity of Tissues.—Erworbenes Photoaktivität der Gewebe als Faktor der biologischen Strahlenwirkung und ihrer Imitation. R. Werner.
- 94 Relations Between Emotions and Heart Disturbances.—Ueber die Beziehungen von seelischen Empfindungen zu Herzerkrankungen. L. R. Müller.
- 95 Brucheinklemmung einer Appendix epiploica (Isolated incarceration in incisional hernia) von Bruns.
- 96 *Wunden und Wundheilung von Schlängengiften mit kassatischen Beiträgen (snake bites). Lotze.
- 97 *Ueber prophylaktische und therapeutische Anwendung des Antistreptokokken-Serums. F. Fromme.
- 98 Behandlung der fibrinösen Pneumonie mit Romers Pneumokokken-Serum. Winkelmann.
- 99 Sound Impermeable to Roentgen Rays.—Eine für Röntgenstrahlen undurchlässige biegsame Sonde. R. Freund.

83. Superheated Air in Gynecology.—Jung confirms his previous announcements in regard to the great efficacy and value of local application of superheated air as a means of promoting absorption of the products of acute and chronic affections of the adnexa and connective tissue in the pelvis. He has applied it in 137 cases. It avoids the injurious influence on the nervous system inevitable with some of the older methods requiring local manipulations. The pus or effusion is evacuated by an incision, with drainage, and then the superheated air is applied. After the patient is rubbed off she can go out of doors almost at once without danger of chilling. All acute processes contraindicate superheated air, including all febrile patients and those in whom pronounced hyperleucocytosis indicates impending or recent suppurative softening. High fever and other inconveniences are liable to be observed if superheated air is applied in these conditions. The special indications for it are exudation in the connective tissue or inflammatory tumefaction of the adnexa, chronic pelvic peritonitis with adhesions, or chronic indurations and cicatricial tissue in the pelvic connective tissue. It is astonishing sometimes how the old, hard masses soften and vanish under the influence of the hot air. Further indications are the cases with pus requiring incision. After evacuation of the pus and decline of the acute symptoms the hot air will aid in the absorption of the remains of the morbid process. Still another favorable group includes those with exudation in the stump after an operation. Hysteroneurasthenic disturbances are not benefited by the hot air, except, possibly, from the suggestion.

84. Tuberculin Treatment for Febrile and Out-Patients.—The warning is generally given that fever contraindicates tuberculin treatment. Krause has been giving a course of tuberculin treatment to febrile and other patients for whom sanatorium treatment was impossible. The results have justified his expectations, benefit being apparent in every instance. He used Koch's bacillus emulsion in a 1 per cent. dilution in salt solution, the dose of bacillus substance ranging from .005 to .03 mg. In the milder cases all the catarrhal manifestations were banished and they were always mitigated in the severer cases, while the fever vanished permanently in all. This effect on the fever in cases in which it had resisted all other measures was most striking, as also the benefit in the laryngeal tuberculous processes.

85. Brachialgia.—Brassert describes a case and declares that probably many cases of supposed traumatic reflex neuralgia are in reality cases of brachialgia. Treatment should be by suggestion and general, not local, measures. Local applications and advice to rest and to spare the arm merely perpetuate the brachialgia. Prompt recovery is the rule when treatment is by diversion and use of the arm.

89. Hebotomy: Extramedian Symphyseotomy.—Bauereisen concludes his extensive monograph on the subject, based on considerable personal experience, with a discussion as to whether or not delivery should be left to Nature after the pelvis has been enlarged by sawing the pubic bone. He thinks that natural delivery should be awaited after the bone has been sawed through.

90. Operations in Sauerbruch's Air Chamber.—Sauerbruch reviews the 15 important operations on heart, lungs or esophagus that have been done with the aid of his air chamber. It allows the lung to expand in an atmosphere with a pressure below that of the surrounding air. The chamber has been described fully in these columns. He relates that when the thorax was opened wide the respiration and pulse remained normal and normal, even in the case of one patient who was much debilitated from cancer of the esophagus and from addition to alcohol. The results of the experiences since March, 1904, when the chamber was first used, have fully realized many of the hopes aroused by the results of experiments on animals.

91. Inoculation of Monkeys with Tuberculosis.—The experiments were made in Sumatra. A large number of gibbons had been collected by the Dutch authorities on the island for the experiments. Von Dugern remarks that it was astonishing to see the small amount of food (ripe fruit) required by the monkeys to keep them in good condition. No difference could be discovered in the effect of human and of bovine tubercle bacilli when inoculated into the monkeys. The facts observed corroborate the dangers for man of infection with bovine as well as with human tubercle bacilli.

92. Fatigue Toxin and Antitoxin.—This is Weichardt's fourth communication on this subject. He here announces that the albumin molecule has the tendency to split off certain toxic substances as it breaks up. These toxic substances, he states, are by-products in the formation of stable compounds. According to his conception, the fatigue toxin is thus neither a product of reduction nor of oxidation, but a by-product that originates as the albumin molecule begins to break up and one that induces the production of a specific antibody.

96. Snake Bites.—Recent research on this theme is reviewed in this article and the various methods of treating snake bite are enumerated. Lotze suggests that a cupping apparatus, connected with a suction pump, such as Bier uses to induce congestive hyperemia, might be found useful for sucking the venom out of the wound. Calmette's antivenene should be used when procurable, but if not, a 2 per cent. solution of chlorinated lime should be injected. This tends to neutralize the toxins by the gases generated. (See article in miscellany column, March 10, 1906, page 749.)

97. Prophylactic and Therapeutic Use of Antistreptococcus Serum.—Fromme has been making a practice lately of injecting 10 c.c. of antistreptococcus serum three or four hours before undertaking an important abdominal or vaginal operation. In 11 out of 13 cases of uterine cancer the after-course of the cases was exceptionally smooth, and likewise in 8 cases of other gynecologic affections similarly treated. The general impression was decidedly favorable in regard to prophylactic use of the serum. In several other cases it was administered for therapeutic purposes and the results were less strikingly beneficial. On the whole, the verdict is in favor of its prophylactic use and also for the treatment of incipient streptococcus infections. In case of postoperative peritonitis requiring secondary incision and drainage, the serum may be useful as an adjuvant, but little can be hoped from it in pyemia and septicemia and in infectious processes of long standing. Any powerful reaction will only do harm in this latter case.

Riforma Medica, Naples.

Last indexed, page 514.

- 100 (XXI, No. 33.) Auscultation of the Mouth.—L'ascoltazione orale nella diagnosi differenziale tra i tumori rinfarici consenzienti il sofferamento pleuritico. T. Prodi.
- 101 *E' possibile la diagnosi clinica fra trombose acute della porta e del suo ramo e peritonite perforatoria? S. Sollier.
- 102 *Radioterapia e sifilide linfatica. C. Quadroni and A. Gramegna.
- 103 L'edemio del muscolo bicipite brachiale. A. Cervera.
- 104 (No. 34.) *Blood Pressure in Heart Affections.—La pressione sanguigna nei malati di cuore. C. Gennari.
- 105 Contributo alla cura del serratamento cicatriziale delle mascelle (cicatricial lockjaw). R. Falco.
- 106 Spirocheta pallida e infezione sifilitica. A. Rizzo and A. Cipolletta.

101. Differentiation of Thrombosis of Portal Vein from Peritonitis.—Solieri's case of thrombosis of the portal vein complicating round ulcer of the stomach had been diagnosed as peritonitis from perforation of the gastric ulcer. He analyzes the similar cases on record, stating that only one was correctly diagnosed during life. Only a few of the patients could be cured by operative intervention. In differentiation the possibility of existence of changes in the liver liable to impede the normal circulation should be borne in mind. The symptoms are like those of perforation peritonitis. Bloody diarrhea is characteristic, but it may be substituted by ileus, as in the case described. The patient's face was pale and ashy, but not contracted as in case of peritonitis. He experienced intense pain, but the abdomen was not so extremely sensitive to pressure as in peritonitis from the inflammatory irritation of the nerve terminals in the parietal peritoneum. The abdominal wall was not rigid and there was no hiccough. There was much more effusion than is common in peritonitis, and it recurred rapidly after tapping. The alarming symptoms come on more slowly in case of thrombosis than in peritonitis from perforation.

102. Radiotherapy of Primary Syphilitic Lesions.—The writers' experience with x-ray treatment of the primary inguinal bubo shows that such lesions react to the exposures with inflammatory phenomena more intense than are observed in any other form of glandular trouble. A large number of experiences and years of observation are required to decide the question as to the further development of syphilis thus treated.

103. Blood Pressure in Heart Affections.—Gennari asserts that the blood pressure is always high in case of heart disease or arteriosclerosis whenever there is a complicating kidney affection, and that this may be important in differentiating puzzling cases in which the urine does not indicate renal trouble. He always noticed that patients with cardiac affections improved by treatment in the hospital, had a much lower blood pressure than when first admitted to the hospital. The blood pressure increases or diminishes parallel to disturbances in compensation, and may thus serve for the prognosis.

Nordiskt Medicinskt Arkiv, Stockholm.

Last indexed, XLV, page 2034.

- 107 (XXXVIII, Surgery, No. 1.) "Treatment of Large Cavities in Long Bones.—Zur Behandlung grösserer chirurg. heilender Knochenhöhlen in den langen Röhrenknochen." G. Ekehorn.
108 "Einige Reflexionen über die operative Behandlung des Torticollis spasticus." J. Berg.
109 "Zur Kenntnis der Ectopia ovarii Inguinalis." E. Rovin.
110 Fall von Euphthalmie der Gallenblase (of gall bladder). A. Hansson.

107. Treatment of Non-Healing Cavities in Long Bones.—Ekehorn has been very successful with his technic of lining the cavity in the bone with Thiersch skin flaps. He applies this method in various kinds of acute and chronic affections of the bones leaving a cavity. The procedure is so simple that it can scarcely be called an operation, and if it fails no harm has been done. Healing has not been delayed a moment. If it succeeds—and he has found it especially successful in case of cavities of long standing—then the healing has been materially promoted. Another advantage is that if some small focus has been overlooked it is placed in a favorable condition for healing. One of his patients had suffered from osteomyelitis of the lower end of the femur for twenty-five years and had been operated on six times. Again and again the process would recur, and there was always a dull, heavy sensation in the limb and occasionally pain and fatigue. After five years' intermission the process broke out again in an acute form in 1902 and again a year later. It was carefully treated according to the usual measures, but again broke out in 1903. Ekehorn then performed Thiersch transplantation. The cavity was first scraped to sound tissue and tamponed. After two or three days the Thiersch flaps were applied directly from the knife. They were cut in strips long enough to reach from the center of the bottom of the cavity to the edge of the wound in the skin, passing over the bone walls and soft parts. When the cavity was thus lined it was tamponed, using a "tampon tube" for the purpose, and a dry dressing was applied outside. The tampon was left for four or five days until it could be removed without disturbing the flaps. They healed in place in a week or less. The patient was freed at once from all his disturbances and can now use his leg normally without fatigue. Another patient with an osteomyelitic

fistula of long standing was cured in the same way by the Thiersch skin flaps. Another patient was a man of 68 who had had recurring osteomyelitis in the upper end of the tibia since childhood. After failure of other treatment this treatment completely cured the lesion and the tendency to recurrence. The results seem to be particularly fine in these old cavities. The strips of granulations between the flaps soon heal over completely and the part has a permanently healthy aspect.

108. Operative Treatment of Spastic Torticollis.—Berg presents evidence to show that the drawbacks of operative treatment are comparatively trifling in case of spastic wry-neck. Success can be expected only when the operation is extended to conform to the indications of each individual case. In by far the larger majority the muscles of the neck are involved as well as the sternocleidomastoid, and consequently severing the spinal accessory nerve alone does not meet the indications. In the 5 cases reported the cervical nerves and the accessory were divided at different sittings in 3, and the result of each of these partial operations was precisely what was to be expected from the anatomic conditions. This excludes the idea of suggestion as a factor in the final success. All these patients were cured, although a very slight tendency to deviation of the head is still observable in repose. In another case the accessory nerve was merely stretched and psychic treatment according to Brissaud instituted, with the result of a rapid cure to date. Before resorting to surgical measures Berg advises the most extensive application of the Brissaud system of psychic treatment. If operative treatment becomes necessary the prospects are better, the smaller the region involved and the less the psychopathic tendency. Unless the sternocleidomastoid is unmistakably and prominently involved in the spasm, it is useless to resect the accessory nerve. The operation on the posterior branches of the superior cervical nerves should be restricted to division of the second branch at the intervertebral foramen and cautious division of the two contracted muscles at their insertion on the transverse processes of the atlas.

109. Ectopic Ovary.—In the case described, a woman of 42 with otherwise normally developed genitalia, was operated on for a congenital inguinal hernia. The hernia was first noticed three years before, and it became tender at the time of the menses; otherwise there was nothing abnormal. The hernia suddenly began to increase in size and was operated on. It was found to be a cystic tumor of ovarian tissue, probably an ectopic ovary.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A TEXT-BOOK ON PRESCRIPTION-WRITING AND PHARMACY, with Practice in Prescription-writing, Laboratory Exercises in Pharmacy and a Reference List of the Official Drugs, Especially Designed for Medical Students. By E. Parvus, M.D., Professor of Materia Medica and Therapeutics, College of Physicians and Surgeons, Chicago. Second Edition. Thoroughly Revised and Adapted to the Eighth (1905) Edition of the U. S. Pharmacopoeia. Cloth, Pp. 404. Price, \$3.00 net. Chicago: Chicago Medical Book Co., 1906.

I. A new or Noteworthy Philippine Plants. IV. H. Notes on Cuming Philippine Plants in the Herbarium of the Bureau of Government Laboratories, by E. D. Merrill. III. Notes on Philippine Gramineae, by E. Hackel. IV. Seltsamkeiten Philippinens, by H. N. Hildy. V. Philippine Acanthaceae, by C. R. Clarke. Publication of Department of the Interior, Bureau of Government Laboratories, No. 35, December, 1905. Paper. Pp. 99. Manila: Bureau of Printing, 1905.

TRANSACTIONS OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA. (The State Board of Health) (organized 1847). Meeting of 1905, at Montgomery, April 19-22. Cloth. Pp. 587. Montgomery, Ala.: Brown Printing Co., 1905.

THE REAL TRIUMPH OF JAPAN: The Conquest of the Silent Fox. By Louis Livingston Seaman, M.D., LL.D., late Surgeon-Major of U. S. V. E. Cloth. Pp. 291. Illustrated. Price, \$1.50. New York: D. Appleton & Co., 1905.

CASES OF NERVOUS DIAGNOSIS. Prepared for the Use of Students. At the Harvard Medical School, Boston, 1906. Fourth Edition. Cloth. Pp. 33. Boston: For sale by F. H. Thomas Co., 1906.

FOOD AND THE PRINCIPLES OF DIETETICS. By R. Hutchison, M.D., F.R.C.P. Revised Edition, with Plates and Diagrams. Cloth. Pp. 582. Price, \$3.00 net. New York: William Wood & Co.

PERSONAL HYGIENE. Designed for Undergraduates by A. A. Woodhull, A. M., M.D., LL.D. First Edition. Cloth. Pp. 221. Price, \$1.00 net. New York: John Wiley & Sons, 1906.

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Original Articles

THE FORMATION OF URIC ACID.*

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NEW HAVEN, CONN.

The rôle of uric acid in physiology and pathology has long formed a theme for unrestricted discussion and controversy in scientific literature. The wealth of published contributions on this subject abounds in the most characteristic specimens of what a recent medical writer has aptly termed "truth and poetry about uric acid."

Nevertheless the student of the physiology of uric acid can not fail to recognize a number of distinct epochs representing the introduction of new discoveries and consequent altered points of view in the interpretation of familiar phenomena. When the secret of each novel attitude is revealed it no longer becomes difficult to follow the march of progress in science; and, what is all-important, we are thus enabled to revise or formulate anew the problems with the solution of which advancement is coincident.

This society, so happily inaugurated "for the diffusion of the knowledge of the medical sciences," will accomplish great good if its proceedings emphasize that before pathologic variations can be appreciated adequately, some fundamental knowledge of the normal functions of organs is essential. To the neglect of this, as a general rule, is due not a little of the confusion regarding the part played by uric acid in the animal body. Clinical observations, not infrequently confined to isolated cases or limited numbers, and more often carried out with inaccurate methods of research—the so-called clinical methods—have led to theories which were only reluctantly abandoned. Every investigator will admit that an hypothesis is a great aid to research in any domain; but a theory is admissible only so long as it fits the facts. Yet how difficult it is to relegate to the rubbish heap a theory which is supported by the authority of a distinguished worker. The present generation of scientists is learning to present truths eagerly, but to generalize from them with caution.

EARLIER VIEWS.

The obstacles to scientific progress which I have just referred to are well illustrated by some earlier views on the origin of uric acid in the body. Since urea was recognized as an end product of the oxidative decomposition of proteids nothing was easier than to assume that the larger molecule, uric acid, represents a product of incomplete oxidation. Whether uric acid was regarded as an intermediate product in the combustion of the large proteid complex or whether it was, rather, the out-

come of an abnormal or irregular disintegration change—in either event it seemed proper to attribute an increased occurrence of the compound to a disturbance in the usual oxidation of ordinary proteids. In clinical language the vague uric-acid diathesis became the expression of an equally vague lowering of the oxidative capacity of the organism. It was observed, for example, that leukemia is often accompanied by an increased output of uric acid in the urine; and at once the theorists attempted to associate this with an insufficient oxygen-carrying capacity of the circulating blood, in connection with a relative diminution in the number of erythrocytes. The increasing number of cases reported failed to show any constancy in the increase of uric acid excreted. When finally the crucial physiologic experiment of interference with respiration was made, no increase of uric acid was noted; and, above all, when the actual conditions in disease were experimentally investigated, it was found that leukemia is not attended with any deficiency in oxidative powers. With these negative results the structure of the old theory of the incomplete oxidation of proteid fell. How much would have been gained in this instance alone by a more inductive method of study.

My subject is restricted to one aspect of the physiologic problems concerning uric acid, namely, its formation in the body. How many erroneous ideas have arisen from a mistaken identification of the excretion of uric acid with its formation no one can say. So long as uric acid was looked on as one of the end products of nitrogenous catabolism the confusion was a natural one. We have, however, lately come to recognize this chemical compound as an intermediary product which may, in turn, experience ready decomposition within the body. With this once clearly recognized it is evident that the amount of uric acid eliminated within any given period is not necessarily any adequate index to that which has been formed within or introduced into the organism; and this statement applies independently of any undue retention to which attention has been directed so zealously by certain writers. The physiologist is to-day in a position to recognize the precursors of uric acid in the ingested foods or the disintegrating tissues and likewise to estimate with accuracy the quantities of these compounds which escape from the organism unchanged. And if the chemical and physiologic history of the intermediary transformations is not yet unfolded in its entirety, we can at least report commendable progress.

A review of early theories is unnecessary.¹ Manifold

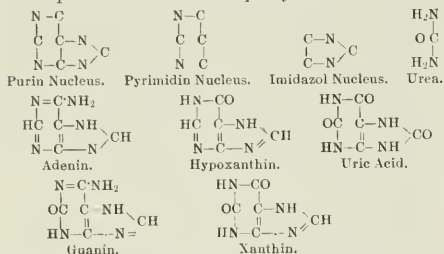
1. For a comprehensive review of the older literature on uric acid in physiology and pathology, the reader is referred to the papers by Wiener: *Ergebnisse d. Physiol.*, 1902, vol. I, part I, 1903, vol. II part I; Burian and Schur: *Müller's Arch.*, 1900, vol. lxxx: 1901, vol. lxxxvii; Walker Hall: "The Purin Bodies of Food-stuffs," 1903. No attempt is made in the present paper to give a complete list of the newer investigations, only the more important references being noted.

* Read before the Harvey Society of New York at the Academy of Medicine.

experimental investigations have long since demonstrated the untenability of the view ascribing the origin of uric acid to a decomposition of simple proteids, in which it might arise as an antecedent of urea. Similarly the notion of attributing the production of uric acid to a diminished oxidative capacity in the body as a whole may be dismissed, although we shall see that certain greatly modified aspects of this view have again arisen in other connections. The more adequate, or what may appropriately be termed the modern conception of the formation of uric acid is associated especially with the researches of two investigators, Kossel and E. Fischer.

THE WORK OF KOSSEL AND E. FISCHER.

E. Fischer definitely established the chemical structure of uric acid and a large group of related compounds which have become familiar, through their physiologic and pharmacologic bearings, as the xanthin compounds, the alloxuric compounds or (more appropriately) the purin compounds. No physician can hope to have an adequate appreciation of the problems under discussion without some familiarity with the chemical structure of this group of related substances. The formulæ here presented therefore demands no apology; a superficial inspection alone reveals relationships which a page of description can not make equally evident.



Kossel's epoch-making contribution consisted primarily in his demonstration that the purin compounds, such as xanthin and hypoxanthin, are disintegration products of the widely distributed nucleoproteids, nucleins or nucleic acids. In one of his earliest papers, in 1881, recognizing the near chemical relation of the purin compounds to uric acid (see formulæ), he wrote: "The thought is at once suggested that these compounds play a significant rôle as normal precursors of uric acid or urea. The difficulty involved in the recognition of this lies in the circumstances that these substances have heretofore been found in organs in small quantities only." Kossel² proceeded to show that the proportions of the different purin derivatives present in or obtainable from the body is far greater than had been anticipated.

The earliest experimental attempts which might have served to verify Kossel's hypothesis gave negative or uncertain results in almost every case. These failures are in part explicable in the light of subsequent study. A part of the difficulty is ascribable to inadequate analytical processes, a fact which is deserving of note at a time when the patient endeavors of the students of accurate analytical methods receive scanty appreciation from those who have no immediate use for them. Uric acid was at first missed as an end product of hypoxanthin-feeding, guanine-feeding and nuclein-feeding, partly owing to inadequate methods, in part probably because of poor absorption of the ingested materials, and more likely, further, because of the destruction of the formed

uric acid in the intermediary metabolism of such species (dog, rabbit) as were inadvisedly selected for the trials.

HOBBACZEWSKI'S EXPERIMENTS.

In 1889 Hobbaczewski gave a new turn to the experiments and theories on uric-acid formation. To him was due the first experimental proof of the transformation of purin compounds into uric acid. By digesting organs like the spleen, rich in nucleoproteids, with blood, he obtained either the purin bases xanthin and hypoxanthin, or uric acid, according as his experiments were conducted in the absence or presence of oxygen. These experiments have become classic. But Hobbaczewski made an equally important addition when he fed the nuclein prepared from spleen pulp and succeeded in eliciting an increased output of uric acid in both man and animals, thus transferring to the living body the experience gained in the digestion beaker.

Hobbaczewski was unfortunate in the explanation which he gave for this new production of uric acid. He attributed it to the disintegration of nucleoprotein material, it is true; but he persistently refused to credit the increase to the purin-yielding substances ingested. Accordingly, he invented the theory of a leucocytosis induced by the ingested nucleoproteids, leading in turn to a breaking down of body cells,—leucocytes rich in the purin-bearing nucleic-acid groups. That the introduction of nucleic acids, either as such or as proteid salts (nucleins, nucleoproteids) may lead to an increased elimination of uric acid has since been demonstrated for many compounds of both animal and vegetable origin and in a considerable number of animal species; but the evidence is to-day abundantly in favor of a direct transformation of the ingested material without the intermediation of leucocytes. An increase in the digestive leucocytosis under this condition of feeding is the unusual rather than the usual occurrence; and the experience which I have gathered with my co-workers indicates that a characteristic metabolism of the purins follows the most diverse modes of introduction of the mother substances into the organism. Parenteral paths are equally effective.

THE PURINS AND URIC ACID.

The failure of the earlier attempts to demonstrate in animals a conversion of ingested free purin bases, such as are obtained by the destruction of nucleic acids and nucleins, into uric acid, raised the question: Is some peculiar chemical complex or union like that of the nucleic acid molecule requisite for the conversion of the purins to uric acid in the body, or can the free purin bases be thus converted? For example, can guanine or adenine as such be transformed to uric acid, or is the characteristic oxidation dependent on the manner in which these purin bases are bound up in nucleic acid and such uric acid forming products as thymus gland? It is conceivable that hypoxanthin, for instance, might exert a leucotactic action such as Hobbaczewski assumed for the nucleins; in that event the increased formation and destruction of leucocytes would presumably be accompanied by an increased elimination of liberated phosphoric acid. Krüger and Schmid³ have made these questions superfluous by demonstrating that even in man the ingestion of hypoxanthin, xanthin, guanine or adenine is followed by an increase in the output of uric acid. They have made clear that this phenomenon is in no

3. Krüger and Schmid: *Zeltft. f. Physiol. Chemie*, 1902, vol. xxiv, p. 649. Earlier observations on hypoxanthin were reported by Minkowski and by Burlan and Schur.

2. Kossel: *Zeltft. f. Physiol. Chemie*, 1881, vol. v, p. 267.

way the outcome of a leucotactic action of the free purin bases fed and that the phosphoric-acid metabolism of the body undergoes no noticeable alteration which would indicate any coincident destruction or synthesis of nucleic acid in the tissues.

With the genetic relationship between the purins of the food, whether in the form of the free hypoxanthin of meat extract or the nucleoproteids of glandular tissues like sweetbreads and liver once established, it is instructive to consider the quantitative relations between these two factors in metabolism. To what extent do the purins introduced contribute to the increased production and elimination of uric acid? When a balance is struck between the intake of purins, either free or combined, and the increase in output of uric acid in the urine as a measure of its production from the ingesta, a deficit is uniformly detected. It might be assumed that the purins fed are in part eliminated unchanged; indeed, it is well recognized that the urine contains other purin derivatives than uric acid. The quantity of these is, however, not appreciably or significantly altered by purin feeding except under unusual circumstances. A few actual figures will serve to illustrate the deficit to which reference has been made. Thus, in one case in man after feeding 1.2 gm. of nitrogen in the form of hypoxanthin, 0.77 gm. was recovered as excess of uric acid, or about 62 per cent.; in the case of adenin 33 per cent. was recovered as uric acid, and less than 4 per cent. left the organism unchanged.⁴

DESTRUCTION OF URIC ACID.

The failure to recover the entire quantity of ingested purin in the form of uric acid or unchanged urinary purin suggests two explanations: 1, A retention of a portion of the purins or the uric acid formed therefrom so that they fail to reappear in the urine; or 2, a destruction of purins in the metabolic exchanges. The retention theory has been abandoned by almost all investigators except the followers of Haig, whose theories I regard as irreconcilable with modern experimental evidence. The question of the destruction of purins in the body, though foreign to the real subject of this lecture, nevertheless deserves brief consideration.

It has long been known that very considerable quantities of uric acid itself can be destroyed in the body. The evidence for this is made more convincing by the studies on various isolated organs in which this destruction has been investigated directly. For example, when blood containing a solution of uric acid is perfused through a surviving liver a progressive loss of uric acid takes place. The quantity of uric acid eliminated or found at any moment is therefore by no means an index to the quantity formed. The recognition of this fact, of the power of the animal organism to catabolize uric acid like other nitrogenous compounds, is one of the fruits of modern research which has profoundly changed our attitude toward the problems of purin metabolism.

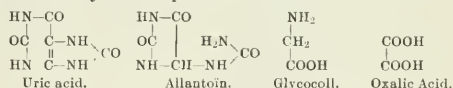
The extent to which the destruction of uric acid and other purins actually takes place varies in different animal species. Burian and Schur⁵ have made an elaborate study of this subject and reached the conclusion that the proportion of the ingested purins which escapes destruction and is therefore eliminated as uric acid, is rather constant. In carnivora, like the dog and cat, it is about 1/20; in herbivora, like the rabbit, 1/6, and in man 1/2 of the purin material introduced. This explains why so little uric acid is ordinarily found in the

urine of the familiar laboratory animal, the dog, in contrast with man. It is furthermore probable that young animals are not equally capable of effecting the destruction of uric acid, and it is not unlikely to me that similar defects may be associated with pathologic conditions.

If we summarize these recent findings respecting the destructive capacity of the body for uric acid, a new point of view arises in the discussions of the so-called uric-acid diathesis. Uric acid formed in the body is ordinarily largely destroyed in the body again; it may therefore occur in unusual amount owing to diminished destruction equally as well as it might accumulate through imperfect elimination or increased production. The important point is that a study of the urine alone will not decide. The tolerance of the organism for purins must be ascertained by a comparison of the intake.

What are the end products of this destruction of uric acid in the organism? Urea is at once suggested by the mere inspection of the structural formulae. The possible formation of oxalic acid

in the same reaction is also thus brought into view. In the carnivorous dog and cat the observations of Salkowski, Minkowski, Cohn and the work in our laboratory, have indicated that allantoin represents an important transformation product of uric acid and is glycocholl. The chemical relationships involved are made clear by the comparison of the structural formulae:



The current views regarding the relative formation of these compounds under different circumstances are still divergent and a discussion of them at this time would be unprofitable.

The review which has been presented up to this point has traversed the paths familiar to every student of this subject. At most the changing ideas regarding the origin of uric acid have been pointed out. The distinctly modern aspect of the problem concerns the mechanism by which the metabolism of the purins is effected—the chemical history of the reactions which yield uric acid from nucleoproteids, and in turn cause its disappearance.

ENZYMES AND PURIN METABOLISM.

That a preponderating rôle is played by soluble enzymes is no longer a matter of conjecture; nor is this anything other than what the increasing knowledge of the importance of these biologic agents would lead us to anticipate. Enzymes are no longer thought of exclusively as agents of the digestive apparatus; they enter everywhere into the manifold activities of cells in almost every feature of metabolism. Hydrolysis and oxidation are facilitated by their participation in definite, conceivable ways. Horbaczewski's⁶ observations on the formation of uric acid *in vitro* from the purins of spleen pulp formed the starting point for the new departure. Spitzer⁷ then demonstrated that extracts of spleen and liver may yield uric acid when air is present, even in the absence of putrefactive processes, thus indicating the enzymatic character of this reaction. He also showed

4. The data are taken from Krüger and Schmid: *Loc. cit.*, p. 559.

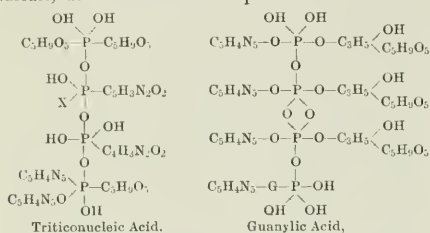
5. Burian and Schur: *Pflüger's Arch.*, 1901, vol. lxxvii, p. 335. Cf. also Krüger and Schmid: *Loc. cit.*

6. Horbaczewski: *Monatsh. f. Chemie*, 1891, vol. xii, p. 221.

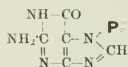
7. Spitzer: *Pflüger's Arch.*, 1899, vol. lxxvi, p. 192.

that uric acid can be obtained in an oxidative way from adenin and guanine by the action of some constituent of spleen or liver extracts in the presence of atmospheric oxygen, although the formation of uric acid is far more extensive when xanthin and hypoxanthin are the precursors. These results were confirmed by Wiener,⁸ and the facts which they represent are now undisputed.

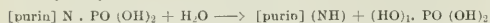
The additional contributions of Schittenhelm⁹ and Jones¹⁰ have established the co-operation of several enzymes in the steps leading to uric acid as an end product. The first of these involves a nuclease, that is, an enzyme capable of splitting up nucleic acid so as to liberate the purin bases present in its complexes. The constitution of the nucleic acids is by no means determined, although the reasearches of Osborne¹¹ and of Bang¹² enable one to obtain some conception of the possible relationship of the purin derivatives to the remaining radicals, as indicated in the provisional formulae:



Burian¹³ has lately given reasonable evidence that the purin groups are attached to the remaining nucleus at the 7-position of the purin skeleton, so that guanine, for example, would be attached to the remaining groups as indicated below:



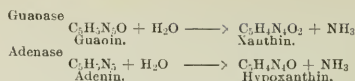
In chemical terms the action of the enzyme nuclease would thus be comparable to the reaction involved in the hydrolysis of an acid amide:



Nucleases are doubtless widely distributed in nature. They must obviously share in many autolytic processes in organs and tissues. At present, however, our information regarding this class of enzymes is rather limited.

More light has been thrown on a second step in the intermediary metabolism of purins. Several investigators, notably Jones¹⁰ and Schittenhelm,⁹ have succeeded in isolating enzymes of the amidase type which accomplish the conversion of the amino purins, guanine and adenin into xanthin and hypoxanthin, with liberation of ammonia.

Reactions of this kind, attributable to enzyme influence, have long been recognized and assumed to have importance in the deamidizing of nitrogenous compounds in metabolism.¹⁴ For the cases under consideration the reaction may be assumed to proceed as follows:

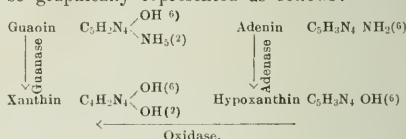


In correspondence with this, adenin and guanine are converted into hypoxanthin and xanthin, respectively, when they are digested with extracts of certain tissues. An interesting controversy has arisen in the study and developed into more than polemical interest. Having obtained extracts of organs which readily deamidize adenin without converting guanine, Jones very properly postulated the existence of two distinct amidases—guanase and adenase. Working with the same organ (the spleen), Schittenhelm has failed to note any such distinctive difference. The discrepancy has lately been cleared up by the discovery of Jones,¹⁰ that whereas the spleen of the ox (with which Schittenhelm experimented) contains guanase, it is missing in that of the pig (which formed the source of Jones' experimental material); and the latest experiences of Schittenhelm¹⁵ and of Pfeiffer¹⁶ add to the growing conviction that the distribution of the enzymes concerned in the metabolism of the purins is very unlike in different species. Future studies in this field will doubtless contribute many features of interest in comparative physiologic chemistry.

That these enzymes are not universally distributed in all organs and tissues is certainly not without physiologic significance. Up to the present adenase and guanase have been found in the spleen, liver, lung, muscle, thymus and suprarenals; not in the intestines, blood or kidneys.¹⁷ When tissue extracts prepared from spleen, liver, muscle or lung are allowed to act on guanine or adenin in the presence of oxygen, uric acid is found in place of xanthin or hypoxanthin. In this reaction a third enzyme, an oxidase, is involved, converting hypoxanthin to xanthin and subsequently to uric acid.



Under favorable conditions the conversion may be practically complete. The first step in these reactions may be graphically represented as follows:¹⁸



The final step is the oxidative transformation of xanthin into uric acid. I am unable in the allotted time to give appropriate recognition to the various investigators who have at length enabled us to trace in some comprehensible way the intermediary changes by which the purins and their nucleic precursors may give rise to uric acid; nor am I permitted to do more than refer to the work of Wiener, Ascoli, Schittenhelm and others,¹⁹ in which the destruction of uric acid by the agency of uricolytic enzymes has been found conspicuous in the kidney and liver, and in lesser degree in extracts of muscle and bone marrow. The sequence of events in the transformation of purins is bound up in a series of typical enzyme reactions.

(To be continued.)

8. Wiener: Arch. f. Exper. Pathol. n. Pharmak., 1899, vol. xiii, p. 273.

9. Schittenhelm: Zeltft. f. Physiol. Chemie, 1904, vol. xiii, p. 251; vol. xliii, p. 228; 1905, vol. xiv, p. 121; vol. xlvi, p. 354.

10. Jones: Ibid., 1905, vol. xiv, p. 84, and earlier papers therein mentioned.

11. Osborne and Harris: Ibid., 1902, vol. xxxvi, p. 85.

12. Bang: Ibid., 1901, vol. xxxi, p. 411.

13. Burian: Ergebnisse d. Physiol., 1904, vol. iii, 1, p. 90; Johnson: Amer. Chem. Jour., 1905, vol. xxxv, p. 197.

14. Cf. Lang: Hofmeister's Beitr. z. Chem. Physiol., 1904, vol. v, p. 321.

15. Schittenhelm: Zeltft. f. Physiol. Chemie, 1905, vol. xlvi, p. 354.

16. Pfeiffer: Hofmeister's Beitr. z. Chem. Physiol., 1905, vol. vii, p. 463.

17. Schittenhelm: Zeltft. f. Physiol. Chemie, 1904, vol. xliii, p. 236.

18. Jones: Ibid., 1905, vol. xiv, p. 2.

19. Schittenhelm: Ibid., 1905, vol. xiv, pp. 147, 161; Almagia: Hofmeister's Beitr. z. Physiol. Chemie, 1905, vol. vii, p. 459.

EYE-STRAIN AS A CAUSE OF DISEASES OF THE DIGESTIVE ORGANS.

GEORGE M. GOULD, M.D.

PHILADELPHIA.

Before the Section on Practice of Medicine of the American Medical Association,¹ in 1905, the then president of the association, the professor of medicine in the medical department of an old university, read these words:

NONGASTRIC ORGANIC DISEASES PRESENTING GASTRIC SYMPTOMS.

The Eyes.—The subject is familiar to all. Who has not seen correction of errors of refraction relieve so-called "bilious attacks," periodical vomiting, anorexia, indigestion and other gastric symptoms? The cure of grave organic ocular defects relieves similar gastric conditions.

A good-sized book, with no superfluous word, might be written concerning this astonishing admission, for: 1. Every statement made is true. 2. Every statement made is untrue. 3. Its significance is wholly unrecognized and far-reaching. 4. The history and due credit-giving are unjustly ignored.

1. Supposing that the thing intended to be said is really said, we have here an authoritative assent and reaffirmation of the truth that eye-strain frequently produces "bilious attacks," periodical vomiting, anorexia, indigestion, and other gastric and intestinal diseases. It is now sixteen or seventeen years since I began to affirm and to reaffirm this truth, and this is the second convert made among the diagnosticians, leading practitioners or gastrologists. Hereafter I can merely refer critics, sneerers, ignorers and deniers to Dr. Musser, ask them to settle their scores with him, and sing my "*Nunc dimittis*" with a smile of cheery satisfaction. No longer is it a question of the opinion of a "specialist," an "enthusiast," an "exaggerator," a "hobby-rider," a "grinder of his own axes," etc., but the president of the largest American medical society, the professor of medicine in a great medical college, and the leading diagnostician and practitioner in a large city, has spontaneously and publicly stamped the theory with the approving seal of his authority. There is abundant clinical evidence of the correctness of the intended statements of Dr. Musser in the paragraph quoted, and any practitioner can verify it in his practice by numerous patients whenever he will refer them to competent oculists and follow the histories up for a few days, a few weeks or a few months. In this instance it is not for the affirmer to prove his statement. Any man who makes such an assertion as this, and especially one occupying the position of authority and power held by Musser, is perfectly aware of the reach and significance of his published opinion. He has, beyond question, demonstrated it long and often, or he would not dare to come out so plainly and without equivocation. It, therefore, behoves the deniers, ignorers and cynics—the so-called "conservatives"—to prove their negation, because, by every moral and medical law, all patients continued in their sufferings by this "conservatism" may justly, and should legally, hold the deniers, ignorers and cynics criminally responsible. We hold the antivaccinationists accountable for every case of small-pox, and it is proverbially "a poor rule that will not work both ways."

How many deaths are chargeable to the prejudices of Hodge and Meigs and their blind adherents who opposed

the clear logic of Oliver Wendell Holmes? And when the error-loving and truth-hating opponents and rivals of Semmelweis ruined him professionally and allowed thousands of their patients to die they were likewise responsible. Since now a great man has authoritatively announced the frequent dependence of diseases of the digestive organs on eye-strain, those who continue their policy of not giving their patients the possibility of cure by the method suggested must settle with avenging science and the medicine of the future. They can not longer continue the pitiful and silly cry of, "Danger, danger in such extremism," with which they and their commercial medical journals have met the demands of progress in clinical medicine.

2. It is a pity that the method of making the announcement of the paragraph was not itself beyond criticism. There is a perfectly well understood and admitted meaning of the term "organic disease." In the paragraph-title, "Nongastric Organic Diseases," etc., this definition is contravened and mystified. Ametropia is not an organic disease. The eye with the low and common errors of refraction is in no way morbid or diseased, least of all is it organically diseased. Only by secondary endeavors to overcome the malfunction of the ametropic eye does organic disease somewhat rarely arise, either in the eye itself or elsewhere. In the vast majority of cases the attempt to overcome the error—called eye-strain—is purely functional. In the same way, in the last sentence of the paragraph, the repetitive misuse of the term is followed by the words "similar gastric conditions." But the gastric, intestinal and pelvic consequences of eye-strain are at first, and for long, purely functional. As long-continued functional disorder is bound to end in organic disease or anatomic pathology, so here, also, these functional disorders of digestion may finally end in inflammatory and surgical disease.² But a wiser discrimination should have guided in the making of the pronouncement.

The motive may have been excellent which prompted the writer to say, "The subject is familiar to all. Who has not seen," etc.? But method is often almost as important as motive, and in this instance it is doubly or trebly so. If it is correct to say that the subject is "familiar to all," etc., then those who show wilful ignorance of it, those who deny and scoff at it, those who do not bring the possibility of the therapeutic test to their patients—what shall be said of them? Is there any word too denunciatory, any expletive too strong, as applied to one who has seen, often and "familiarily" seen, the relief of eye-strain end bilious attacks, vomiting, anorexia, indigestion and other similar symptoms, and yet who wholly ignores the fact in his published books and articles, who does not act on the suggestion in the treatment of his patients, who scoffs at all reflexes, and who publicly laughs at all such nonsensical theories and theorists. Without the "if," I do not myself call them miscreants and scoundrels—I only ask, if it is so, is it not scandalism? The authority implies plainly that all physicians have seen such cures, are familiar with them, know them to be genuine and true—and yet, well, let us glance at the literature! We must remember that there can not be less than one-third of the persons of the civilized world who are suffering from some of these enumerated symptoms and their sequels. There are

2. This is so true that a great surgeon publicly states that his most brilliant cases of threatened operation, appendicitis, peritonitis, and other "surgical" diseases of the pelvis, have been made without operation, and by sending his patients to the oculist.

several hundred millions of such civilized persons, and hence, admittedly, and at the lowest calculation, there must be a score or two of millions suffering from digestive disorders due to eye-strain. Everybody, plainly implies Professor Musser, is familiar with and admits the fact that the correction of eye-strain gives relief in many cases of gastric and intestinal disorder. Well, if so, why do they not say so and report cases publicly? What kind of familiarity and science is that which is carefully excluded from all publication and open admission? It is, of course, sham familiarity, unscience, nonsense.

First, as to the text-books, treatises and monographs on diseases of the stomach or of digestion.

BOAS, 1897, "Diagnostik und Therapie der Magenkrankheiten," does not mention the eyes as possible cause of stomach diseases.

BOAS, 1901, "Diseases of the Intestines" (translation of Basch), is likewise oblivious of the "familiar" fact.

CONNHEIM, 1905, "Krankheiten des Verdauungskanales," if "familiar" ignores the theory utterly.

DEBOVE and ACHARD, 1895, and DEBOVE and REMOND, 1893, "Maladies de l'estomac," also seem unfamiliar with this theory.

EINHORN, 1903, "Diseases of the Stomach," "has not seen," etc., or, if he has seen, has not spoken of the matter.

EINHORN, 1904, "Diseases of the Intestines," utterly ignores the well-known theory and facts that support it.

FLEINER, 1896, "Krankheiten der Verdauungsorgane," would probably agree with the German ophthalmic surgeons in pronouncing such nonsense *Amerikanische humbug*.

FRENKEL, 1900, "Maladies de l'estomac," should come to Philadelphia and study the subject more thoroughly before he writes again. He wholly ignores the theory.

HEMMETER, 1902, "Diseases of the Stomach," should revise almost every page of his treatise if Professor Musser is correct. He has not heard of the theory.

HEMMETER, 1902, "Diseases of the Intestines," inferentially denies both the facts and the familiarity. He is still silent.

KAHANE, 1900, "Therapie der Darmkrankheiten," is a sorry teacher if he has seen and is familiar with such facts.

MATHIEU, 1900, "Maladies de l'estomac," writes strangely if he knows the rôle that eye-strain plays in those maladies, for he does not speak of it.

MARTIN, 1895, "Diseases of the Stomach," is equally to be criticised.

PICK, 1895, "Magen und Darm-Krankheiten," does not allude to the affair.

RODARI, 1904, "Magen und Darm-Krankheiten," wrote too long ago, probably, to have heard of facts which in 1905 are "familiar to all."

SOUPAULT, 1905, "Maladies de l'estomac," does not agree that "all" should be construed as including French physicians.

VAN VALZAIL, 1898, "Diseases of the Stomach," omits all reference to this source of gastric diseases.

WEGLE, 1905, "Magen und Darm-Erkrankungen," is also not to be included among the "all."

Of all the recent text-books on gastric and intestinal diseases that I could find in the library of our College of Physicians, the 18 mentioned do not contain any reference whatever to what Dr. Musser says is admitted by all. I have found two, however, who do refer to it. The first is:

Reed, 1904, "Lectures on Diseases of the Stomach and Intestines," under the heading, "Acid Gastric Catarrh," p. 825, has these inciting, powerful and emphatic words: "The oculists include eye-strain among the possible causes." And we yearn, beyond consolation, to know what "oculists" so include, and where the references may be found.

The second is:

Herschel, 1895, "Indigestion," under Reflex Causes, p. 44; this ignored teacher does not ignore, and includes himself among the "all." He writes:

"A considerable amount of attention has been paid of late to the possibility of gastric affections being set up reflexly by eye-strain. George M. Gould, in a paper published in 1890 in the *International Journal of the Medical Sciences*," stated that he had found that in the young of either sex eye-strain, to a considerable extent, often interfered with the digestive process. My own experience bears this out, as I have had in my own practice several cases in which digestive troubles appeared to depend on astigmatism. One patient in particular, a chemist in the city (London), a highly neurotic individual, used to suffer from great flatulence during the morning hours. I discovered that he was astigmatic, that he lived out of town and read a paper coming up in the train. He informed me that the flatulence invariably came on as soon as he commenced to read the paper in question. The gastric troubles promptly disappeared as soon as he discontinued reading on his way up to town."

Thus eighteen out of twenty recent systematic treatises on diseases of the digestive organs completely ignore what a great authority says is a well-known and highly important cause and cure of such diseases; one smiles at it in a line, and one devotes to it a half-page—with sympathy and respect, President Musser should gladly note.

How is it with the systematic practices of medicine? A highly important cause, known of all, of a vast number of cases of disease, and the means of speedy cure, should, of course, be extensively and minutely set forth and emphatically urged on the attention of the students and practitioners who receive the teachings of the great scientists and instructors. I have examined carefully the following "Systems," and "Practices," and "Manuals," and Text-books: Leo, Allbutt, Mathieu, Ewald, Nothnagel, Debove and Achard, Anders, Bain, Bouchard and Brisseau, Brouardel, Hare, Bartholow, Hughes, Klemperer, von Mering, Monro, Osler, Salinger and Kallteyer, Tyson, Gibson, Butler, Hare, Kuhneman, Lyon, Cohen and Eshner and others.

Why do they entirely fail, even in that old foolish allusion, that is meant to be illusion, in the reference that refers nowhere, the indexing that demonstrates the author's omniscience, but also his total unconcern?

But even here the rule has its exceptions, and some unmentionables may be mentioned:

Allchin, vol. v, p. 235, wrote in 1903: Not a few cases of nervous dyspepsia may be traced to causes acting reflexly, especially pelvic disease, and even, it is asserted, to eye-strain and astigmatism.³

French, 1905, has one or two similar strabismic allusions.

Da Costa, 1900, refers to it still more gingerly.

Hare, 1905, "Practical Therapeutics," generously allows two lines to the subject: "Eye-strain may cause stomachic disturbances, flatulent dyspepsia and a variety of general or so-called reflex neuroses."

Musser, 1904, "Medical Diagnosis," is not so generous concerning a factor of great importance in 1905, and one "familiar to all." He allots one word to it:

"Gastric neuroses may arise directly from disease of the stomach or reflexly from disease of other organs, the brain, the spinal cord, uterus, kidneys, liver, eyes or nose."

It is good to know that the eyes are the seventh in order of importance, and are listed before the eighth, the nose—a righteous nosology, one might add.

Loomis-Johnson, 1898, "System of Practical Medicine," under "Intestinal Neuroses," vol. iii, p. 111, article contributed by Stockton and Jones, say:

3. The conjugation of these two words, as is most common, shows that the writer has not a faint conception of the real nature of "eyestrain."

"One of the most prolific causes of functional gastric disturbances is eye-strain, and almost any neurosis may be induced by it. Gastric hyperesthesia, accompanied by hyperchlorhydria, to be followed later by more or less anasthesia and achlorhydria, seems to bear a definite relation to astigmatism of high degree. Without attempting to refer the condition to any special form of eye-strain, we have, nevertheless, been impressed with the frequency of the association of astigmatism and muscular imbalance with painful sensory conditions of the stomach, especially taking the form of distress and pain accompanied by belching after meals, with a good appetite, but voluntary starvation through dread of pain induced by eating. These patients suffer for years and are made rather worse than better by restricted diet."

Stockton, 1903, in "Nothnagel's System," American edition, article on "Diseases of the Stomach" (not in the original), comments, p. 163, as follows:

"Cases of so-called typical gastric vertigo not infrequently depend on uncorrected eye-strain, especially on anisometropia. It is true that the attacks are often precipitated by transient disturbances in digestion, and these digestive derangements in turn may be occasioned by some eye-strain that predisposes to the vertigo. In several instances I have seen the disappearance of both vertiginous and gastric symptoms follow a careful and painstaking correction of the refractive error."

Again, under "Gastric Neuroses," p. 256, he says:

"As earlier stated, eye-strain has been found a frequent cause of functional stomach trouble, especially among those who are living an indoor life and are accustomed to the close use of the eyes. This is particularly true in cases of mixed astigmatism and anisometropia, and is often associated with muscular imbalance."

Dr. Stockton has also placed himself on record more definitely and fully in the same way in an article entitled, "Hygiene of the Digestive Apparatus," in Dr. Pyle's "Personal Hygiene," issued in 1904.

Of the thousands of articles, clinical or pathologic, by physicians, that in the last dozen years have appeared in the medical journals on the subject, it may be said that, in all probability, not one has recognized or emphasized the truth set forth by Dr. Musser in the few lines quoted. It is needless to enumerate. A typical example comes to hand as I write, a solemn address by Robert Hutchinson* on "Dyspepsia." Like a multitude of others, filled with light but not in the least enlightening, it is utterly oblivious of the eye-strain origin of this most common of modern diseases. No F.R.C.P. would dream of allowing such a thought to appear or even to be mentioned by him in a public way.

Thus, with the exception of one or two brief allusions in the authoritative text-books, the "scientific" medical men of the world give no hint of their "familiarity" with a highly important source and cure of the most common of all diseases. Plainly, therefore, Dr. Musser is in error as to the knowledge of the fact by medical men. This error clearly arises from the attempt to promulgate a scientific truth by a method which shall ignore the history of the discovery and "save the faces" of those who have wilfully ignored the truth discovered and fought for by others. This may be good politics, but it is unjust, and the question remains: Will it stop the ignoring and the sneering of the "conservatives?"

If, as Dr. Musser avers, eye-strain, known of all, is responsible for a large share of the disorders and diseases of digestion and nutrition, the oculists, especially of the United States, should long ago have received the truth eagerly and should have proclaimed it loudly from the house-tops and from their text-books. It is needless

to say that it is not so. I need not weary with all the negative citation of authors.

If the truth of Dr. Musser is true, the refractions of our oculists were the means of demonstrating the truth. So far as I know, only one such oculist has publicly confessed.⁵ Concerning sick headache or "migraine," many have done so, and in other essays I have given the details, quoted the writers and established the question of priority. Sick headache, however, is not the subject now under discussion. Although that disease consists in the most profound and revolutionizing morbidity of the digestive process, it presents, in the main, a different clinical picture from that of "bilious" attacks, periodical vomiting, anorexia, indigestion, and other gastric symptoms described in the quotation taken as a text.

3. The significance of Dr. Musser's statement is not recognized, and its far-reaching consequences not discriminatingly appreciated. If it is true, then the professional and the social bearings are tremendous. It may be seen at once that the practices of nearly all physicians must be thoroughly changed in the majority, or in a large minority, of the patients consulting. Not even the specialists can be excepted, because, seek where one will, do not the majority of diseases spring directly from the disorders and diseases of digestion and nutrition, or are intimately based on or associated with them? How large a portion of the drugs advertised are directly or indirectly aimed at those conditions? What is the whole nostrum, patent and proprietary medicine business but the organized attack of quackery on the demons of "dyspepsia" and denutrition? Seventeen or eighteen years of clinical observation and study have convinced me that a far larger proportion of all gastric and intestinal diseases are due to eye-strain than even Dr. Musser and Dr. Stockton would admit.

4. If I am in error, I shall be happy to be corrected, but I think I have not mistaken when I say that the recognition of the truth of the ocular origin of these diseases of digestion was begun, and for ten or a dozen years was advocated, solely by me. I care nothing personally for questions and quibbles as to priority, but I am proud of the fact that I early and long and boldly set the truth forth, and have held to it, at first in face of the silence of all others, then in spite of their ridicule and jeers. I began the crusade in 1888, publishing my first clinical report early in 1889⁶ of a case of dyspepsia of twenty years' duration cured at once by glasses. I considered attentively the clinical details and the physiologic grounds of the morbid function, its cure, etc. In January, 1890, I again gave the details of other cases, and stated that I had had in all twenty-eight patients in whom dyspepsia, anorexia, nausea, etc., were cured by the extinction of eye-strain. Later, in the same year,⁷ I again returned to the charge, giving proofs and repeating the conviction that "eye-strain produces digestive troubles of various kinds, all resulting in malnutrition, anemia"? etc.

In 1891,⁸ I reported on 277 cases of digestive and assimilative disorders (anorexia, fickle appetite, consti-

5. After the above words were written, a second noteworthy exception comes to my hand, the article of Dr. Griffin, in *The Journal of the A. M. A.*, Jan. 6, 1906. Under "Disorders of Eye-Strain," this frank man publishes reports of cases, diseases of the digestive organs due to eye-strain and cured by ocular treatment. All honor to him.

6. *Medical and Surgical Reporter*, Feb. 9 and March 9, 1889.

7. *American Journal of the Medical Sciences*.

8. *Medical News*, Aug. 25, 1890.

9. *The Journal A. M. A.*, Sept. 19, 1891.

pation, dyspepsia, nausea, vomiting—not sick headache—car-sickness, etc.), and I wrote thereon:

"For a long time I have been begging my friends, the general practitioners, to heed the fact that digestion and assimilation may be directly and profoundly disordered by eye-strain. Nothing seems more true in medical science than this."

And much of the same purport.

Since then I have continued nearly every year to beg consideration of the fact. Not an oculist published a line of assent or seconding. At last I convinced a few of my friends in general practice, especially one great physician of national fame, by the best of demonstrations—the restored health of patients. The misfortune of the theory consists in the self-evident fact that the cures depend on an accuracy and refinement of practical refraction which has been almost impossible and unknown and which is now only becoming more general.

The manner in which the recognition of the truth is coming about illustrates so admirably the ancient psychologic way that it should be noted. Years of utter silence and ignoring follow a discovery and the repetition or re-emphasis of it by the foolhardy. Then follow ridicule, calumny, coarse dogmatism and stupid opposition of the leaders who do not lead, the authorities who are without authority, the editors who sell themselves to the *Zeitgeist* or to their commercial salary-givers, the indifferent multitude who follow blindly the blind guides. Finally, one after another acknowledge the truth, long evident to many, impossible longer to be slandered or ignored. But the distinguishing characteristic of the confession is that it is "familiar to all" and admitted by all; but still persists the death-like silence as to how the discovery was made, by whom recognition was made necessary. There is not a hint of gratitude to those who have sacrificed themselves in the cause of truth and discovery. Instead it is said: "It is familiar to all," "That is an old story," "We have always said so"—and then is renewed the custom of ignoring and maligning the new and different truth that, in its turn, is struggling for a chance to release other millions from their sufferings. "Conservatism" may be most expensive and criminal when it conserves only error.

There remain several important postscripts to be carefully considered:

1. It is evident that a breach has been made in what seemed the impenetrable walls of the professorial and authority-making classes. Heretofore all students of history and psychology have found that the real discoveries in medicine are ignored, scorned and opposed by the contemporary "authorities," the leading practitioners, the professorial and presidency seeking, the committee-forming, and the text-book-making class. Some of the men composing this class are too often too far interested in themselves, their own personal success and fame. Some are seeking to hold their dearly gained and slippery power, too occupied in courting popularity, hunting LL.D. degrees, baronetries, trusteeships, other professorships and presidencies, too desirous of doctoring the rich and those dying of organic disease, to have care for the functional diseases which, long neglected, at last land the prematurely dying in the hands of the famous consultants.

2. The question returns as to the sincerity, the effective-making and the permanency of the admission. And, first, as to the sincerity. In Dr. Musser's own text-book of last year's dating, there is but one word

out of hundreds of thousands devoted to the matter "familiar to all." In his own article from which I quote, there are some 1,400 words, of which 40 are devoted to a mere statement concerning the ocular "nongastric diseases." In the discussion of Dr. Musser's paper there were 14 participants. Their opinion of Dr. Musser's "familiar to all" admission was shown in the fact that not one considered it worth even alluding to. Now, if this is a truth of value, the matter needs to be set forth in a discriminating and serious manner. We must have the rules of diagnosis to determine the methods whereby eye-strain sets up those symptoms and how certain kinds of strain begot certain digestive diseases. We need more than all the proofs that these general practitioners and gastrologists have cured these patients. Let the cases be reported. The editors of the great official organs of their societies will print such articles from these great men, but they often refuse to do so when the little men and the hobby-riding oculists send their manuscripts.¹⁰ The editors are great friends of the "authorities." The truth is, of course, that the glittering generality, the general and vague admission, is not taken seriously; nor is it meant to be so taken.

The "familiar to all" vagueness is merely a sop thrown to Cerberus and a method of "saving one's face," so that in future years, when the despised "enthusiast and exaggerator" shall have died in establishing the contemptible truth, then those who have killed him (and their patients) by the "damning with faint praise" may proudly say, "We knew all this a generation ago and urged it and practiced it."

3. But did they know and practice it? If so, the proceedings of the great societies of oculists (through whom alone the truth could be demonstrated) and the ophthalmic text-books must show the thousandfold proofs of the theory of eye-strain as a cause of gastric diseases. With dreary monotony they absolutely omit such proofs and go on to discuss the cure, not the cause, of ocular tumors, inflammatory and surgical diseases. Of refraction problems and gastric diseases there is no curiosity or mention.

How is it in practice? Will Dr. Musser's colleagues, the great professors and text-book makers, see to it that the eyes of these patients have been accurately "glasses?" Will the leading diagnosticians and practitioners of New York, London, Paris, Berlin, Boston, Chicago, San Francisco, Philadelphia, Baltimore, New Orleans, and the rest, when a patient comes to them next week, seek to learn if there exists eye-strain? If they do this will they do more than to ask in an inquisitorial and humdrum way: "Have you been wearing glasses?" If they get a reply, "Yes, from a good eye specialist," will they rest unsatisfied? Do they care to go into the matter earnestly, scientifically? Do they seek to know that, as a rule, the greater the reputation of the "ophthalmic surgeon" the more certainly will his prescription of lenses be wholly inaccurate and wrong? Will they seek to learn that there are some 100 good and sufficient reasons why the glasses worn by patients generally are unscientific and incapable of relieving eye-strain? "Familiar to all" may be an astute (or blunderful (?)) way of rendering a truth unfamiliar to any.

10. At the same time the editor of the British Medical Journal accepted the MS. of Hutchinson referred to, he refused an excellent article from an English oculist showing the dependence of "dyspepsia" on eyestrain.

4. The admission, "familiar to all," may be worse than continued silence and scorn. About thirty years ago a leading practitioner wrote several articles admitting most that "the eye-strain crank" could wish, logically implying all that he now claims and giving excellently reported clinical demonstrations. He soon saw that the professional mind could not, and would not, take in the truth. It was ignored utterly and contemptuously. The promulgator realized his error and joined forever the ranks of the ignorers. About thirty-four years ago an American oculist, known of all, stated the clear truth that sick headache is caused by eye-strain. From that day to this, if I am not in error, he has never dared to repeat the hazardous admission or even to allude to it. Thus it may be seen that there are good reasons for suspecting that political shrewdness and tactical acumen often have to do with hindering the progress of medicine, and that a cunning selfishness may require that thousands of patients should continue to suffer rather than that the truth should be preached, a truth which medical dogmatism may not allow to prevail.

THE DIAGNOSIS OF RENAL CALCULUS.*

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Few diseases present such protean symptoms and simulate such a varied array of other maladies as stone in the kidney. This is particularly true if we include in our considerations stone in the ureter.

The smallest stone may cause typical agonizing symptoms not easily mistaken even by the patient, while without attracting notice large stones may occupy both kidneys, causing insidious destruction of these organs and sudden death from anuria. In the consideration of this subject I will first discuss the diseases of the kidney which we must differentiate from calculus nephritis, and will then take up those diseases of neighboring organs which most commonly mislead us in diagnosis.

COMMON KIDNEY DISEASES TO BE DIFFERENTIATED FROM CALCULUS NEPHRITIS.

The more common kidney diseases of which we must always think in making a diagnosis of stone are tuberculosis, pyelitis, pyelonephritis and pyonephrosis from the ordinary pus-producing infections, tumor and intermittent hydronephrosis.

Tuberculosis.—At our Atlanta meeting, two years ago, I had the pleasure of reporting thirty-five cases of tuberculosis of the kidney occurring in the practice of Dr. Howard A. Kelly and his associates in Baltimore. It had been my privilege to study the urinary condition in most of those cases, and you may remember that I laid emphasis on the importance of urinary examination in making a diagnosis of renal tuberculosis. The same law holds in renal calculus—we must study the urine.

Our only positive diagnosis of renal tuberculosis is the finding of tubercle bacilli in the urine or causing the disease in guinea-pigs by the inoculation of the urine or the diseased tissues taken from the bladder. In calculus kidney the urine may show sand or a stone. The x-ray and the wax-tipped bougie are invaluable means for making a positive diagnosis, but these methods both fail at times, and if we would enjoy a full measure of success in kidney work we must insist on a careful study of the

urine. Blood occurs in the urine in both stone and tuberculosis. The amount varies in both diseases from microscopic quantities requiring both the centrifuge and microscope for the discovery of the few corpuscles present, to severe hemorrhages threatening the patient's life. The amount of blood is more likely to be influenced by exercise in cases of stone, but we sometimes have to search repeatedly before finding a few corpuscles, marking the only change in the urine. Pus in the urine, at least in microscopic quantities, may always be looked for in tuberculosis, while a large percentage of stone cases are aseptic and free from inflammatory reaction, especially in the early stages, and leucocytes, if present, can be accounted for by the amount of blood. I have found that some stone cases with only a moderate number of red corpuscles and leucocytes may have a strikingly large number of epithelial cells.

Pain as a differential symptom between stone and tuberculosis is unreliable. In either case there may be entire absence of pain. Either disease may cause only a dull backache or an indefinite nagging sensation in the lumbar region. In either disease the pain may occur in the most severe paroxysms due to blocking of the ureter by a blood clot, by a plug of detritus, or in calculus disease by a stone. At such times the kidney is likely to be enlarged and the urine may be temporarily clear.

Palpation findings in the kidney region are not characteristic, as in either disease the kidney may be smaller than normal because of atrophic sclerosis or it may be greatly enlarged from fibrosis, lipomatosis, hydronephrosis or pyonephrosis. Palpation of the ureter is of more value, as a large proportion of the tuberculous cases show thickening of the ureter after the disease is advanced in the kidney. In the infected stone cases the ureter may be thickened and simulate the tuberculous ureter. In ureteral calculus the stone is in the lower end of the ureter in 50 per cent. of the cases, and in women it can usually be palpated through the vagina or the rectum. In diagnosing a case as tuberculous on the evidence of finding acid-fast bacilli in the urine, we must always use the differential stain, as illustrated by the following case:

CASE 1.—Mrs. J. B. S., aged 42, married seventeen years, the mother of two children, was admitted to Dr. Kelly's service at the Johns Hopkins Hospital in 1901. The patient had complained at intervals for the past four years of attacks of intense pain in the right lumbar region. She described the pain as labor-like in character, and said that it extended downward toward the bladder and down the thigh as far as the right knee. The attacks lasted from twenty-four hours to five days. At times they were accompanied by chills, nausea and vomiting and constipation. During the attack the patient passed but little urine, but had the constant desire, and after the attack a large quantity of urine was noticed. She sometimes had decided blood tinge in the urine during and after the attack. She never passed gravel. There was always sensitiveness in the right hypochondrium during the attacks. The patient came to Dr. Kelly with a diagnosis of renal tuberculosis, a report having been made from a state laboratory that tubercle bacilli had been found in the urine in abundance. Leonard, of Philadelphia, one of our most expert Roentgen-ray specialists, had failed to get a stone shadow. I examined catheterized specimens of urine without finding pathologic content, and the laboratory in question soon telegraphed to defer the operation, as the bacilli had been found to be smegma. At a later admission Dr. Kelly operated because of the symptoms and blood in the urine and found an oval stone about 2 cm. in length in the pelvis of the kidney.

Pyelitis, Pyelonephritis, Pyonephrosis.—It may be impossible, except at operation, to diagnose any one of

* Read at the eighteenth annual meeting of the Southern Surgical and Gynecological Association at Louisville, Ky.

these conditions from an infected nephrolithiasis. Indeed, the presence of a stone may cause any of these conditions, and again a stone may develop because of the infective process. If the history shows the trouble to have begun during or soon after one of the acute infectious diseases, or during pregnancy, or after the development of a pelvic tumor, the condition is more likely to be one of infected kidney. But we can not exclude the presence of a stone in view of such a history, for it is often under the conditions named that an aseptic stone kidney becomes infected and first begins to cause symptoms. The infected stone kidney is not infrequently the seat of such a connective tissue hypertrophy that the x-ray picture is simply a large shadow in which no stone can be outlined. This tissue hypertrophy may extend to the ureter and so close its lumen as to prevent the passage of a wax-tipped bougie into the pelvis, as happened in one of my cases.

Tumor.—It is by no means easy to differentiate between stone in the kidney and a tumor. Here, again, our chief dependence is in the examination of the urine. The occurrence of a profuse hemorrhage which begins and ceases suddenly favors the diagnosis of tumor. The presence of a persistent large tumor mass in the kidney region and the absence of pus in the urine is a combination of circumstances suggestive of tumor. It must not be forgotten that a comparatively small stone blocking the ureter may cause a marked swelling of the kidney and be associated with blood and an absence of pus in the urine.

CASE 2.—In the case of Mrs. F., June 27, 1904, I found a large tender left kidney and the urine showed considerable blood, many large epithelial cells, some unusually large, and an absence of pus. I made a probable diagnosis of tumor, but the patient refused further examination and in a few weeks passed a stone.

CASE 3.—The largest swelling of the kidney that I have ever seen was caused by the presence of an enormous stone, accompanied by fibrous hypertrophy and pyonephrosis. In examination of the urine on five consecutive days I had failed to find tubercle bacilli in the urine and considered the case one of infected tumor or nephrolithiasis. The wax-tipped bougie was negative, due, as I found after removal of the kidney with a portion of the ureter, to sclerotic thickening of the isthmus, which so narrowed the lumen that the catheter could not pass.

Microscopic examination of the kidney cortex demonstrated the presence of tuberculous disease.¹

Intermittent Hydronephrosis.—A movable kidney, in which the conditions favor the sudden kinking of the ureter, may give rise to attacks which very closely simulate renal colic due to stone. In either case there may be more or less constant discomfort in the back, with the occasional attacks of severe pain, followed by blood in the urine. If the patient is carefully watched, however, the diagnosis of Dietl's crisis is favored by finding the kidney misplaced and enlarged during the attack, and its return to normal size and position is accompanied by relief of pain and increase in the amount of urine.

Before finishing the discussion of the more common kidney diseases which may be mistaken for stone I must mention two other conditions of which I have seen a few examples. Under the designation of idiopathic hematuria or of renal epistaxis are classed those cases of renal hemorrhage for which we can find no cause even at operation. I have seen one patient who had become profoundly anemic from the loss of blood. Splitting of

the kidney in her case resulted in at least a temporary cure, although no cause could be found for the bleeding. I believe there is a tendency to-day to classify many of these cases of so-called renal epistaxis with the chronic interstitial form of Bright's disease. Acute monolateral nephritis may be even more misleading than the above condition, because, in addition to the suggestive urinary findings, we have the acute onset of renal colic.

DISEASES OF NEIGHBORING ORGANS.

Gallstones.—Because of the proximity of the gall bladder to the right kidney, we are not infrequently called on to differentiate diseases of these two organs. The urine shows blood if we are dealing with stone in the kidney and bile if there happens to be obstruction in the common duct. The pain is more likely to radiate down the ureter in the one case and to the epigastrium and up under the shoulder blade in the other. If the gall bladder is enlarged it is more superficial and has more of a pendulum movement than the kidney. Pressure over a normal liver border may be transmitted to a very tender right kidney and the symptoms be misinterpreted. Except under conditions of special technic, the x-ray does not register a shadow for gallstone.

One of the best means for differential diagnosis is that devised by Dr. Kelly of catheterizing the right kidney and forcibly injecting a bland sterile solution into its pelvis. The patient can generally tell very accurately whether the pain thus produced is similar in character and location to the pain previously suffered. If the pain caused by the injection corresponds to the patient's previous symptoms, we have simply found the location and can not say definitely that we are dealing with nephrolithiasis. An unusual amount of blood after injection is suggestive of a pelvis already injured by stone. If the wax tip returns with scratch marks, we are certain of stone in the kidney or ureter. If the pelvis holds an unusual amount (the normal pelvis takes in woman 120 mm., 7.5 c.c., or 2 drams, before the patient complains of a fullness or discomfort), there is a dilatation which we have found due to various conditions, viz., stone in the kidney or ureter, movable kidney, stricture of the ureter, and tumors of the pelvic organs pressing on the ureter.

The following case, after the kidney investigation, was considered to be one of probable gallstone irritation:

CASE 4.—Mrs. A., aged 63, the mother of several children, was operated on at the Johns Hopkins Hospital in 1897 for acute appendicitis with abscess formation. The drainage wound became the site of a hernia, for which she was operated on in 1900. I saw the patient with Dr. Finney in July, 1904, at the Union Protestant Infirmary. She had been complaining for about six weeks with an indefinite nagging pain in the upper abdomen, more on the right side. She had had no stomach or bowel trouble, no fever or jaundice. There had been some soreness at times over the right hypochondrium. On examination there was general tenderness over the upper right quadrant of the abdomen. We thought of gallstones and of an omentum adherent to the laparotomy wound in the lower part of the abdomen, and causing the symptoms by tugging on the mesentery of the hepatic flexure of the transverse colon.² A specimen of urine catheterized from the bladder contained a few pus and epithelial cells. No red corpuscles were noticed. On cystoscopy I found the bladder reddened in areas, and considered these changes sufficient to account for the few pus and epithelial cells found in the urine. Wishing to exclude stone in the right kidney, however, I catheterized this organ with a wax-tipped bougie with negative results. The urine

1. "The significance of the Urinary Examination in Women," Southern Surg. and Gyn. Transactions, 1904, Case 2, p. 489; also Amer. Med., 1905, vol. IX, p. 559.

2. Hunner: "An Interesting Complication in the Diagnosis of Gallstone," Am. Med., 1903, vol. V, p. 698.

from this kidney contained no pus and the slight amount of blood present was attributed to the trauma of catheterization. About three weeks after this catheterization the patient had her first severe attack of renal colic, passed a small stone by the urethra, and has since enjoyed good health.

Appendicitis.—It would seem to the casual observer that disease of the appendix could not be easily mistaken for renal calculus. But we must remember that many appendix attacks are accompanied by little or no elevation of temperature and that the pain may be located in the kidney region. If we include in this discussion stone in the ureter, we can readily understand that the diagnosis may become more complicated. The ureteral stone may be lodged on the brim of the pelvis and give local pain and tenderness almost exactly under McBurney's point. On the other hand, an inflamed appendix may reach over into the pelvis and cause bladder and rectal symptoms, and, on palpation through the vagina or rectum, the peri-appendicular tenderness and thickening may be mistaken for signs of stone in the ureter. The urine is our safest guide in such cases, but I have recently had a most remarkable case in which I was completely misled because of the urine examinations.

CASE 5.—Miss R., a trained nurse, aged 26.

History.—For ten years she had complained of attacks of pain in the right side, with a more or less constant pain in the region of the right kidney. I saw the patient in consultation with Dr. Julius Friedenwald in December, 1904. She had had two severe attacks within four weeks, requiring hypodermics of morphia for each attack. The attacks, which usually lasted several hours, began with throbbing in the rectum. This increased to a severe pain in the pelvic region and was followed by pain in the region of the right kidney. With some attacks there had been pain in the bladder. At times there had been vomiting. She had never been jaundiced. She stated that the pain never began in the kidney region, radiating downward. There was no very marked soreness anywhere after the attack was over. A number of the attacks had been followed by the passage in the urine of large amounts of pus and blood. After one of these attacks the urine was catheterized from the bladder and sent to one of the most careful microscopists in Baltimore. He found both pus and blood.

Examination.—At my first examination the urine catheterized from the bladder was absolutely normal. A wax-tipped bougie passed to the right kidney returned negative, and the x-ray picture was negative. The patient was very stout and I felt that the x-ray might easily fail to cast a shadow, particularly if the stone were small and of porous formation. While the symptoms pointed to a pelvic location of the primary trouble, I felt that the negative wax-tip was almost positive evidence that the ureter contained no stone, and yet the urine findings after the attacks had been so positive that I considered the case one of urinary-tract disease.

Operation.—I began the operation by exposing the kidney and splitting it from end to end. The kidney was large, and indentations on the surface appeared like scars. No stone being found in the pelvis of the kidney, nor palpated in its substance, I closed this organ with mattress sutures of catgut and explored the ureter as far as the pelvic brim. The lumbar wound was then closed, except for slight drainage to the kidney cortex, and, turning the patient to the dorsal position, I made an extraperitoneal inguinal incision and explored the ureter from the pelvic brim to the bladder, with negative results. I then opened the peritoneum and found an hypertrophied inflamed appendix, which, reaching over the pelvic brim, was densely adherent over the ureter. The right ovary was so firmly attached to the peritoneum over the pelvic ureter that I was obliged to free it by scissors dissection. I can explain her attacks of renal pain and hemorrhage only on the supposition that the appendicular inflammation was communicated to the ureter, causing a temporary stenosis of this organ, with acute hydronephrosis and evidence of kidney inflammation. A section of the kidney cortex taken from one of the scarred-looking

areas showed a mild grade of interstitial infiltration with areas of glomerulo-nephritis. The patient, whose attacks had been increasing in frequency, has been perfectly well since the operation.

Intestinal Obstruction.—Occasionally an attack of renal or ureteral stone colic causes a reflex paralysis of the bowel, with its attendant meteorism and obstipation. If the attack is accompanied by rectal tenesmus, nausea and vomiting, the picture is still more confusing.

CASE 6.—Mrs. K., aged 61, seen with Dr. Eldred at Sparrows' Point. The patient was taken five days ago with sudden pain in the left flank region. She has had several attacks each day, the attacks being more marked between midnight and 6 o'clock in the morning. Dr. Eldred at first considered the attacks due to stone in the kidney or ureter, but as he was unable to get the bowels moved, and as the intestinal distention and distress grew more marked, he began to fear intestinal obstruction. A catheterized specimen of urine was very dark colored. Unfortunately, I did not have a good microscope at hand and did not determine whether there was blood in the urine. The bowels were moved on the day of my visit, and about one week later the patient passed a cylindrical stone about 1 cm. long.

Pancreas Stone Colic.—Recent work by Opie and others has demonstrated conclusively the intimate relationship between gallstones and pancreatic disease. One would scarcely mistake the typical case of acute hemorrhagic pancreatitis, with its sudden onset of acute colicky pains in the epigastrium, nausea and vomiting, subnormal temperature, or chills and fever, and especially when accompanied by the early onset of severe collapse symptoms, for a case of renal calculus. But the mistake might easily be made in the more chronic cases of pancreatitis. The history of former attacks of indigestion or typical gallstone colic, the location of the pains, the presence of a pancreatic tumor, are all helpful differential points. In the future many cases will be differentiated by the examination of the urine, the kidney-stone cases showing blood, while sugar will be found in the pancreatic cases.

Henoch's Purpura and Angioneurotic Edema.—Both of these conditions are often marked by attacks of gastrointestinal crises and renal hematuria, a combination of symptoms that might easily lead to a diagnosis of renal colic caused by stone.

CASE 7.—L. F. Jewess, aged 20, married. I saw this patient immediately after her admission to the Hebrew Hospital on March 19, 1905. She was flexed almost double by epigastric pain, which two quarter-grain hypodermics of morphia had failed to relieve. The husband said that she had such attacks about once a month. I suspected gallstone colic, and on examination found that another surgeon had anticipated my diagnosis. The husband explained that the linear scar in the right hypochondrium had been made at the City Hospital one year before and that gallstones were not found.

I then instructed the resident physician to examine carefully a catheterized specimen of urine, as he would almost surely find blood as an evidence of stone in the kidney. As I turned to leave, the wife found her Yiddish tongue and the husband said, "Oh, yes, doctor, please look at the lump on her leg." Situated over the upper end of the left tibia was an oblong elevation of the tissues, measuring about 4x6 cm., purple in color, the color disappearing from local areas on pressure and slowly returning. Knowing Dr. Osler to take a special interest in visceral crises in purpuric conditions, I asked the resident physician to notify him of the case. "Yes, yes," said the husband, "she has been in the Hopkins Hospital several times." By referring to the hospital records I found that she had been admitted repeatedly because of attacks similar to the present one. With some attacks she had nausea and vomiting and epistaxis. "Black and blue" spots had been mentioned by the family, but subcutaneous bleeding had not been seen at the hospital, and the diagnosis had always been entered as "re-

curing attacks of abdominal pain." The urine during and immediately after these attacks showed a trace of albumin and hyaline and granular casts, but no blood.

In this cursory and superficial view of the subject I have hoped to throw out enough suggestions to convince you that the diagnosis of stone in the kidney is often a very difficult problem, to be solved generally by a process of exclusion. In closing I recall a sentence from Israel's introduction to his chapter on the diagnosis of kidney-stone colic. He says, in effect, that if one would place himself in a position to diagnose other cases than those with the typical symptom-complex he must, first of all, divest himself of the schematic picture so often presented in the text-books.

A CASE OF TRAUMATIC ENDOCARDITIS.

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Our knowledge of traumatic endocarditis is still very imperfect, though many valuable contributions have been added to our literature since George Fischer¹ published his excellent monograph on this topic.

The following case recently came under my observation, and as I had the opportunity of observing it from its very beginning until its end, a period of nearly two years, I consider it of sufficient interest to publish it.

History.—Albert S., aged 9, always enjoyed fair health. There was no syphilitic, tubercular or rheumatic history in the family. At the age of two the patient had measles and subsequently several attacks of acute bronchitis. No tubercular element in these attacks was noticed.

During the winter of 1902 the patient contracted a light attack of pneumonia, which lasted about one week and left him rather weak. Mucous rales could be heard over both lungs for several weeks after the attack. During his entire illness pulse had always been normal and of good quality. The heart sounds and area of heart dullness were normal. Examinations of urine showed a specific gravity of 1012 and no pathologic constituents.

Examination.—On June 8, 1903, while running, the patient fell violently on his chest. He immediately became unconscious, and two hours after the accident I found him still suffering from profound shock. His face and extremities were cyanotic and covered with a cold perspiration. Respiration was superficial and rapid, temperature subnormal. Pulse small and fast, 170 to 180, of very low tension.

On inspection the whole left side of the thorax appeared to be pulsating, the heart action was so rapid and tumultuous that it was impossible on auscultation to differentiate between systole and diastole. A loud murmur could be heard over all the valves, but its time relation to the heart cycle could not be clearly made out. It seemed to be a continuous murmur. The region of the chest, bounded by the right border of the sternum, the middle axillary line, the third rib below and the epigastrium below, was pulsating so violently that the heart action was plainly visible at a distance. The heart dullness corresponded with this area of visible pulsations. The apex beat appeared to be between the anterior and middle axillary lines in the seventh intercostal space. On the next day, when I saw the patient in consultation with Dr. I. Adler, his general condition and heart action had not changed. No fluid was found in the pericardium. Patient had partially regained his consciousness, but was still very apathetic and listless.

Treatment.—The treatment consisted in the application of the ice bag over the heart and internally five drops of tincture of opium every two to three hours. On the third day one drop of the fluid extract of digitalis every two to three hours was added. As the patient could not stand the pressure of the ice bag we resorted to icy cold water applications. Under this treatment the acute symptoms subsided, and the fourth

day after the injury the heart action became more regular; the pulse now was 140, small and easily compressible. A loud blowing systolic murmur could be easily heard over the region of the apex beat, which was transmitted to the left and behind. The heart sounds over the aortic, pulmonary and tricuspid valves were not quite clear, but no murmur could be heard the digitalis treatment was continued, but the dose was reduced to one drop three times a day.

Further Examinations.—On June 28 the boy was allowed to sit up in bed. A careful examination of the heart on that day still revealed the same loud systolic murmur over the mitral valve. The sounds over the other valves were perfectly clear and normal. The digitalis treatment was continued one to two drops a day and when, after an extended absence from the city, I saw the patient again on Oct. 25, 1903, I found his general condition much improved, pulse 120 and his heart smaller. In addition I could now hear a loud diastolic and faint systolic murmur over the aortic valve which were not present at the time when I left the patient in June. I did not see much of the patient during 1904, as he had been taken to the country apparently improved. I saw him again on Jan. 4, 1905, when he showed the signs and symptoms of an influenza. During the attack the heart again became insufficient, and fluid extract of digitalis was again given. The most prominent symptoms during this influenza attack was the very marked dyspnea. Patient improved again and on Feb. 27, 1905, I showed him at a meeting of the Society of German Physicians of New York. At that time he was pale, anemic and poorly nourished. He was restless, easily excited and for a few weeks had showed distinct choreic movements. Nothing abnormal could be discovered in the lungs, but on deep respiration the lower intercostal spaces were drawn in. The heart impulse was easily visible, its pulsation can be seen extending from the right border of the sternum to the anterior axillary line. The apex beat was most distinct in the sixth intercostal space between anterior and middle axillary line. There was a distinct pulsation in the epigastric region. The heart dullness extended from the third rib above to the apex beat below and from the anterior axillary line to the right border of the sternum. Over the apex a loud blowing systolic murmur could be heard, which was transmitted to the left. Over the aorta a loud systolic and diastolic murmur could be made out. A systolic murmur was also heard in the carotid, sub-clavian, axillary, brachial and femoral arteries and a distinct murmur on either side of the vertebral column extending from the lower end of the scapula to the first lumbar vertebra. The carotids pulsated visibly. The pulsation of the capillaries could be seen under the finger nails (Quincke's capillary pulse). The second pulmonary sound was accentuated. Nothing abnormal was found over the tricuspid valve. There was no venous pulse. A systolic thrill could be felt over the entire heart area, particularly over the left ventricle. Pulse was 120 and of a low tension. The blood pressure, according to tonometer of Gaertner, was 70-80 mm. The liver was distinctly palpable about two fingers' breadth below the free border of the ribs. The spleen could also be palpated under the free costal margin. The urine of a specific gravity of 1018 showed a slight trace of albumin, but no casts. No edema or ascites was noticed. Eyesight was apparently normal. Patient complained of frequent attacks of dyspnea, palpitation of the heart and extreme weakness.

Further Treatment.—On April 20, 1905, I was called to see the patient. His heart's action was identical with that observed right after the original injury. A very severe dyspnea was present, pulse 160 to 170, heart's action very rapid and tumultuous. He told me that another boy hit him and he had to run away from him. I again ordered the cold applications to heart and gave him internally two to three drops pure tincture of opium every two to three hours. The cardiac insufficiency was very marked and the whole left side of the thorax seemed to pulsate. The insufficiency of the heart became more apparent from day to day. Face and extremities were cold and cyanotic. Digitalis and hypodermic injections of strychnin finally had no more influence on the heart's action and on May 2 patient died. On account of religious scruples the autopsy was not permitted.

¹ Geo. Fischer: "Die Wunden des Herzens und des Herzbeutels," Archiv. f. klin. Chir., vol. ix, 1863.

LITERATURE AND DISCUSSION.

This interesting case induced me to look up the literature of similar cases in order to compare them with mine and to study their mechanism and the changes produced in the anatomy of the heart.

How a traumatism in the shape of a fall or any other violent contusion inflicted on the thorax affects the heart muscle has been for years a matter of serious consideration and research and the opinions of the different authors vary greatly.

Maclaure² claims that all such injuries to the heart are due to hydraulic pressure and that the resultant injury will vary according to whether the heart at the time of the trauma was in systole or diastole. He claims that these severe contusions always cause "*une véritable anévrisme cardiaque*."

Schmidt³ explains the injury to the heart caused by blunt violence, by the mechanical pressure of the blood column itself in the aorta. The blood pressure being suddenly increased by the injury may be sufficient to tear the valves, when immediately after the diastole the artery is filled to its maximum and the valves are closed. Under such favorable conditions, he claims that even a mild concussion may cause serious injury.

Ebbinghaus⁴ does not share this theory, and he thinks that the elastic fibers in the wall of the artery will sufficiently compensate for the shock.

Barié⁵ claims that the severe compression of the thorax at the time of the injury caused in turn a sudden backward pressure of the blood against the valves and may burst these. All authors agree that any violence which causes a compression of the thorax also increases seriously the blood pressure in its interior, particularly in the arteries.

After these general remarks let us analyze my case. At the time of the injury the boy was rather weak, having gone through a number of attacks of acute bronchitis and a light attack of pneumonia, but his heart, muscle as well as valves, had always been in normal condition. The pulse and urine were normal. I do not think that the repeated attacks of bronchitis and above mentioned pneumonia had a serious influence on his myocardium, as he never showed any signs of a disturbance in the circulation. He had no temperature at the time of the injury—this will exclude any acute ailment, nor did he have any increase of temperature after the injury. The injury to the heart and the endocarditis following it could not have been caused by anything else but the trauma, because immediately afterward the previously apparently healthy heart showed the severe clinical affection described above. As the trauma did not cause the least injury to the wall of the thorax itself nor any visible injury of any kind, we must assume that we had to deal with a so-called *contrecoup* injury to the heart. One of the most striking features of my case was the enormous dilatation of the heart, but there was no tear in the heart muscle itself, no fluid could be detected in the pericardium by either Dr. Adler nor myself. The extent of the dilatation did not change very much during the entire two years, and the compensation of the heart muscle itself was never well established.

Ebbinghaus⁴ claims that the acute dilatation of the heart muscle itself may cause a tear in the endocardium,

even when there is absolutely no injury to the bony framework of the thorax, which, being elastic, yields, but the heart muscle not yielding, causes a *contrecoup* tear in the endocardium. In all cases where the heart muscle has been injured by blunt violence the valves are most frequently affected, and even a perfectly sound valve may be seriously injured or ruptured, as demonstrated by Barié⁵ in experiments on the cadaver and by cases published by Foster⁶ and Schmidt³.

The left ventricle, valves and muscle are much more liable to injury than the right, but the rupture of the muscle seems to be more frequently met with on the right side. Barié's⁵ statistics of thirty-eight cases show injury to the aortic valve nineteen, mitral valve sixteen, and tricuspid valve three. Of all the valves the aortic is most frequently injured. The injuries to the mitral valve consist mostly in the tearing of the chordae tendineae or of the papillary muscles. The valve itself is rarely implicated. In Barié's sixteen cases of mitral injury mentioned above an autopsy was made in fifteen cases and nine showed the tearing of the chordae tendineae, five the tearing of the papillary muscles, in one case both lesions were present, none, however, showed a tear in the valve itself. These injuries always cause an insufficiency of the valve. In my own case the mitral and not the aortic valve received the full force of the violence at the time of the accident, as the murmur, which could be heard soon after the injury, was a loud systolic one, heard most distinctly over the apex and transmitted to the left. Nothing could be heard over the aorta after the *delirium cordis* had somewhat subsided on the third day. Similar cases have been reported by Stokes and Townsend.⁷ In these cases the autopsy revealed a tearing of the chordae tendineae of the mitral valve.

The injuries of the endocardium are usually followed by endocarditis, which develops in consequence of the injury to the valves or any other part of the endocardium (Rosenbach⁸). Many authors think that the so-called traumatic endocarditis most frequently causes stenosis of the valves, but a careful study of the literature leads me to believe that we meet just as many insufficiencies.

In my own case the traumatic endocarditis caused primarily an insufficiency of the aortic valve and the stenosis followed the insufficiency. In October, 1903, four months after the accident, I detected, for the first time, a loud diastolic murmur of the aortic valve. The systolic sound was muffled, but a distinct murmur could not be heard. The systolic murmur developed gradually, and at the time of the demonstration of the patient in February, 1905, the two aortic murmurs were of the same intensity. The primarily developed insufficiency soon caused stenosis by verrucous granulations forming on the diseased valve and narrowing the lumen of the ostium. This pathologic process has been described by C. Gerhardt.⁹

The origin of traumatic endocarditis has been also a subject of great dispute. Litten¹⁰ and many others claim that the injury to the endocardium provides a convenient nidus for micro-organisms, which in turn cause the above mentioned verrucous granulations on the valve and stenosis.

2. Maclaure: "Les plaies du cœur et du péricarde." *Indépend. Méd.*, Paris, 1901, vol. vii, p. 9. "Des contusions du cœur et du péricarde." *Ibid.*

3. Schmidt: "Ueber traumatische Herzklappen und Aortenzerreissung." *Münch. Med. Wochsft.*, 1902, p. 1038.

4. Ebbinghaus: "Ein Beitrag zur Lehre der traumatischen Erkrankungen des Herzens." *Deutsche Zift.*, f. Chir., 1902, vol. lxi, p. 176.

5. Barié: *Revue de Médecin.*, 1881, pp. 133, 309, 482.

6. Foster: *Medical Times and Gazette*, 1873, vol. ii, p. 657.

7. Townsend: *Cyclopedia of Practical Medicine*, 1839. Supplement v, 4, p. 634.

8. O. Rosenbach: "Ueber artezielle Herzklappenfehler." *Archiv. f. exper. path. u. Phar.* 1878, vol. ix, p. 1.

9. Gerhardt: "Zur Kenntniss der Aorteninsuffizienz." *Charité Annalen*, 1878, vol. xii.

10. M. Litten: "Ueber traumatische Endocarditis." *Aerztliche Sachverstaend Ztg.*, 1900, No. 24, p. 493.

Traumatic endocarditis frequently develops slowly and insidiously, so that we may speak of a latent period or a period of incubation. The patient may suffer very little during this period, and, therefore, does not seek medical advice until new complications arise. In this way it may happen that a traumatic endocarditis, although of longer standing, may not be detected until some time after the injury. Any cause which requires more work of the already injured heart muscle, as an intercurrent disease, another traumatism, psychic excitement or muscular exertion, would result in a lack of compensation and cause the patient to consult a physician. The latent period or period of incubation may last weeks, months or even years, as in a case recently reported by Prandi.¹¹

It is very hard to know what anatomic changes had taken place in the myocardium of my own patient, as an autopsy was refused. I do not doubt that there were considerable changes, as after the injury the heart muscle was never able to perform its normal function and the periods of improvement were always only of short duration. Furthermore, it has been shown by various authors that even the slightest injury to the muscular fibers of the heart or the smallest hemorrhage in the heart muscle, resulting in a separation of the ultimate fibrils, will cause disturbances in the sense of a myocarditis.

The choreatic movements described above are also of interest; they developed some time after the traumatism and continued throughout the entire illness of my patient. I could not find a similar affection described in the literature on this subject.

Finally, I desire to express my thanks to Dr. I. Adler for the kind interest he has taken in the preparation of this paper.

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RESULTS OF FACIO-HYPOGLOSSAL ANASTOMOSIS FOR FACIAL PALSY.

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A description of the surgical technic as well as the histories in three cases of facio-hypoglossal anastomosis appeared in the *Medical Record* of Feb. 27, 1904. These cases were presented before the Surgical Section of the New York Academy of Medicine in January, 1904.

Because of the short postoperative period—four, three and two months, respectively—no results had appeared at that time. As each of the three has developed motor power on the paralyzed side, the interest of the cases perhaps justifies a second report, even though the return of power is not complete. Moreover, four additional cases have been operated on. There has not yet been time for the return of motor power, but there are in each case points of considerable interest when compared with the preceding series.

In general terms, the operation consists in dividing the facial nerve at its exit from the stylo-mastoid foramen, exposing the hypoglossal nerve behind the internal jugular vein and above the level of the posterior belly of the digastric muscle, and, finally, in doing a lateral implantation of the distal portion of the facial nerve into a longitudinal slit in the hypoglossal. The junction is wrapped with Cargile membrane or other material to prevent the ingrowth of connective tissue into the field of the anastomosis. While this last step of the procedure was mentioned in the publication to which reference has been made, its importance was not sufficiently accentuated. To this precaution is probably due a large share of the return of power in Case 1, as will be noted later.

Another most important factor in obtaining results lies in the after-treatment. The systematic use of electricity and massage are naturally very important for maintaining the muscular tone and nutrition. Electrical stimulation, moreover, is said, by the most recent observers, to promote greatly the fibrillation of the axicylinders, in which consists the final stage of nerve regeneration. With the first evidence of returning motor power in the paralyzed muscles comes the time for the introduction of the most important single element in the after-treatment, i. e., the systematic exercise of graded voluntary motions in the muscles of the paralyzed side of the face.

There is no doubt that the strongest stimulus to the morphologic and physiologic regeneration of nerves which have been sutured lies in the transmission (or attempted transmission) of volitional impulses from the cortical centers.

Moreover, it must not be forgotten that the transplantation of a distal motor nerve trunk to some neighboring motor trunk removes it from the control of cortical centers which have been educated to the necessities of the coordinate activities of its muscles to new centers which are ignorant of the requirements of its muscle-field. There is, then, an evident primary necessity for the re-education of the new cortical centers to their new duties.

This process is slow and accounts for the fact that emotional symmetry, which is the highest development of coordination, is the last thing to appear in the return of control, and that the return of coordinate power requires so much longer time proportionately than in cases of end-to-end suture of the same nerve trunk.

Basing his technic on this consideration, one surgeon entirely divided the hypoglossal trunk, with consequent permanent paralysis of its muscle-field, and did an end-to-end suture of its proximal stump with the distal portion of the paralyzed facial nerve, hoping thereby to get a more rapid and complete return of power by limiting the activity of the hypoglossal cortical center entirely to its control of the facial muscle-field.

It is hoped that the results reported herewith will give such evidence of surplus activity in the hypoglossal centers as to render this procedure unnecessary.

The first three cases referred to are the ones reported in the *Medical Record*.¹

CASE 1.—History.—J. M., aged 6, had scarlet fever in the early summer of 1903, followed by otitis media and mastoiditis on the right side, for which an operation was done July 13 at

1. The photographic records in the early cases are very incomplete because of the difficulty of getting a photographer, the patient and some one to pose the patient all together at one time; the failure of certain amateur attempts; and a lack of appreciation of the value of certain poses.

11. Prandi: "Di un endocardite traumatica latente," *Gazz di osp. Milan*, 1903, vol. xxiv, p. 502.

Randall's Island Hospital. Three days later, beginning facial palsy appeared and rapidly progressed to complete paralysis. Three and one-half months later complete R. D. was found on electrical examination.

Operation.—On October 24, 1903, under chloroform anesthesia, operation disclosed the facial nerve soft, friable and gray in appearance; slight traction on it with the thumb forceps drew it out of the stylo-mastoid foramen without the necessity of dividing the nerve. (This fact was not stated in the previous report, but is recorded in the original notes on the case.) Two lateral sutures were inserted to implant its end in the slit in the hypoglossal. One of these pulled out through the substance of the facial nerve after both sutures had been tied, and not enough nerve was left to attempt to insert another.

four months the face was symmetrical during quiescence (Fig. 3). The muscles still showed R. D.

From this time there has been steady but slow improvement. Very slight voluntary movement appeared first at the corner of the mouth eight months after operation (Fig. 4). One year after operation the motion in these muscles was very distinct and much increased (Fig. 5). The tongue still protruded to the right side (Fig. 6), but less than immediately after operation (Fig. 2), and it could be voluntarily moved in all directions. The right side was distinctly smaller than the left. The patient was not conscious of any discomfort. Thirteen months after operation the eye could be almost completely closed and the corner of the mouth drawn well out toward the right ear (Fig. 7). These motions could also be done sepa-



Fig. 1.—Case 1. Before operation. Complete paralysis of right side of face.



Fig. 2.—Case 1. After operation, one week, showing deviation of tongue to right side.



Fig. 3.—Case 1. Four months after operation, showing symmetry of face during quiescence.



Fig. 4.—Case 1. Eight months after operation, showing beginning of voluntary movement at right angle of mouth and return of naso-labial fold.

As there was considerable tension on the remaining suture, a catgut suture was passed through the sheath of the hypoglossal nerve below the anastomosis, and then through fascia, so that when it was tied the hypoglossal was pulled up and outward, thus relieving tension at the anastomosis, which was still, of course, very unsatisfactory. Cargile membrane was wrapped about the junction and the wound closed. Primary union resulted.

Subsequent History.—There was almost complete palsy of

the right side. There was voluntary motion in the corrugator supercilii. The patient could smile and show all the upper incisor teeth (Fig. 8). Thirteen months and three weeks after operation these motions were more pronounced (Figs. 9 and 10). Eighteen months after operation improvement was still continuing, most marked in the orbital and supraorbital regions. The eyelid works automatically in a nearly normal manner.



Fig. 5.—Case 1. One year after operation. Increased range of motion at angle of mouth; dimpling of chin.



Fig. 6.—Case 1. One year after operation. Tongue still deviates to right, but can be voluntarily moved in all directions.



Fig. 7.—Case 1. Thirteen months after operation. Closure of right eye (compare Fig. 1). Good contraction of face muscles. Each of these motions can be done separately and alone.



Fig. 8.—Case 1. Thirteen months. Almost symmetrical smile; emotional on left (normal) side; volitional on right (paralyzed) side.

the muscles supplied by the hypoglossal immediately after operation (Fig. 2). The resulting interference with phonation deglutition and mastication lasted for many weeks, although after ten weeks it had ceased to be annoying. The right side of the tongue, while it has regained its full range of motion, has always remained somewhat smaller than the left side (Figs. 6 and 10). Because of the unsatisfactory anastomosis the prognosis as to return of power in the facial field was distinctly unfavorable. However, systematic after-treatment was carried out with the following results: At the end of ten weeks there was distinctly less asymmetry of the face and at

At twenty-five months, improvement is still continuing. The laugh is more nearly symmetrical (Fig. 11). Power to elevate the upper lip is greater. (Compare Figs. 11, 12, 13, 15 with 2, 8 and 9.) Power to elevate the lower lip has appeared (Fig. 13). The frontalis is beginning to act slightly (Fig. 15). The corrugator supercilii is stronger (Fig. 16).

Case 2.—History.—B. G., aged 45, in August, 1903, had severe pain in the right ear for two days, followed by complete paralysis of the right side of the face. Electricity, massage and

baths systematically used for three months elicited no evidence that power would return spontaneously. R. D. persisted in the muscles from the beginning.

Operation.—On Nov. 28, 1903, under ether anesthesia, anastomosis was made without any tension on the sutures. Primary union resulted.

Subsequent History.—Following operation, there was paralysis of the muscle field of the right hypoglossal nerve (Fig. 17). The tongue protruded to the right side and there were difficulties of speech, mastication and deglutition, as in the preceding case. After six weeks these difficulties had disappeared, although the tongue remained smaller on the right side (Fig. 18). For nearly two months this patient complained of moderate intermittent pains in the shoulder, neck and external ear of the right side. These were probably due to injury to the auricular branches of the cervical plexus during the operation, the pain being referred also to other branches than the ones injured.² Six weeks after operation, although R. D. still persisted, there was a distinct diminution in the amount of constant current which it was necessary to pass through the anastomosis to cause contraction in the facial field. Two weeks after operation the tongue deviated markedly to the right side, could not be voluntarily moved to the left, and the right side was noticeably smaller and more wrinkled. The paralysis of the face is evident from the staring eye, the absence of wrinkles on the right side as compared to the left, and the absence of the naso-labial fold on the right side (Figs. 17 and 18). Four months after operation (Fig. 18) the tongue protruded almost straight and had regained nearly normal range of motion. The face at rest had largely regained its symmetry and the naso-labial fold had reappeared. The opening of the mouth and protruding tongue prevent it from showing in the photograph.

Six months after operation (Fig. 20) a considerable amount of voluntary motion had returned at the angle of the mouth and somewhat less in the right palpebral region. This side could be worked independently of the other. Note the diminished palpebral fissure. When an attempt was made to use both sides of the face at once, to show the teeth (Fig. 19), the left side was so much stronger as to pull the right side over and reproduce an appearance of paralysis.

After six months the patient disappeared and has been lost to observation in spite of repeated efforts to trace her. From the progress made in six months it is probable that her present showing would be very satisfactory, especially since the major part of her improvement occurred between the fourth and six months of the time that she was observed.

CASE 3.—L. M., aged 26, had complete right facial palsy following a mastoid operation done eighteen months previously. There had been no spontaneous improvement.

Operation.—On Dec. 22, 1903, Dr. Weir, assisted by Dr. Taylor, performed the operation, using ether anesthesia. The operation went smoothly and was followed by primary union. Paralysis of the hypoglossal muscle-field and the pains complained of by B. G. (case 2) followed operation in this case, but disappeared after a number of weeks.

Further Remarks.—This patient came very irregularly for after-treatment, and about three months after operation moved out of the city. In January, 1905 (thirteen months after operation), she reappeared for inspection. Although she had entirely neglected the instructions as to after-treatment, the result was still pretty satisfactory, as indicated in the photographs (Fig. 21 and 26).

In this case swallowing was accompanied by a slight grimace of the right side of the face, correlated motions analogous to those of the face and shoulder in faciospinal accessory anastomosis.

Figure 21 shows the face in natural pose before operation; Figure 22, the degree of closure of the eye; Figure 24, taken thirteen months after operation, shows the return of symmetry during repose, with normal naso-labial fold and frontal wrinkles (compare Fig. 21); Figure 25 shows

the power to close completely the eye and retract the right side of the mouth (compare Fig. 22); Figure 26 shows separate control of the right side of the mouth and face; Figure 23 shows recovery of the tongue from its paralysis and the power to protrude it well over to the left side.

In all three cases paralysis of the hypoglossal muscle-field was an immediate sequel to the operation and persisted for a number of weeks. This was undoubtedly due to traumatism inflicted on the hypoglossal at the time of operation. To minimize this injury a set of special instruments was designed³ and used in the later cases with very satisfactory results.

CASE 4.—*History.*—Mrs. M. J. had had complete facial paralysis (Bell's palsy) of the left side of the face for twelve years, with the deformity shown in Figures 27 and 28. There was marked atrophy of the muscles. There was some reaction to the galvanic current at the left corner of the mouth. (Complete R. D.) The left eye was painful on continued use, and there was increased lacerimation with an annoying overflow on to the cheek.

Operation.—On Jan. 7, 1905, under ether, the usual operation was done and the nerves were approximated without tension. Although the palsy had existed twelve years, the trunk of the facial nerve appeared normal in size, color and consistency. A small segment was taken for microscopic examination. This was the first case in which the special instruments were employed, and after operation the patient had none of the hypoglossal palsy which was so annoying in the preceding cases. There was numbness of the left ear, and some of the pains noted in the preceding cases were experienced. The wound healed by primary union.

Subsequent History.—Seven weeks after operation the face felt different and more comfortable than it did before operation. Lacerimation was distinctly less annoying and the eye was less troublesome. The patient and her friends thought that the face was becoming more symmetrical and that the eye could be more completely closed, but a careful inspection failed to verify that fact.

Fifteen weeks after operation the asymmetry was slightly lessened and the patient felt that the face was stronger. During the last few weeks of that period there has developed a slight but distinct atrophy of the left side of the tongue, so that it protrudes somewhat to the left involuntarily. Nevertheless the patient can move it in any direction at will. Five months after operation slight dimples could be formed in the chin voluntarily, but a successful photograph was not gotten till eleven months had passed. By this time the lower lip could also be slightly elevated (Fig. 31).

After a palsy lasting twelve years, so early a return of power, though only slight, promises much for the final result.

CASE 5 (referred by Dr. W. C. Phillips).—Miss I. C., aged 26, strictly speaking, can not be classed as an illustration of a case of facio-hypoglossal nerve anastomosis, but the attempt to do the operation developed certain facts that make it worth reporting in connection with the other cases.

History.—For twelve years this young woman had suffered from mastoid disease and had had some five operations. After one of the operations for an acute exacerbation eight years ago there appeared a complete facial palsy of the right side which has persisted. Also during one of the exacerbations several years ago there had developed a diffuse cellulitis of the upper part of the neck, which left a cicatrix covering the upper third of the right side of the neck. There was a small sinus back of the auricle leading into necrosed bone.

Operation.—The attending otologist requested that the nerve anastomosis should be done immediately after he had removed the diseased bone, in order that one anesthesia should answer for both purposes. After a careful cleansing of the field the usual operation for the anastomosis was started. After a painstaking dissection, which lasted an hour, involving exposure of the stylomastoid foramen, it became evident that the trunk of the facial nerve was not present. Moreover, the upper

2. In Case 6, where this nerve was retracted instead of divided, these pains did not appear.

third of the sternomastoid muscle was lacking. It, therefore, seemed probable that the diffuse cellulitis above referred to had caused the destruction of the nerve and muscle. The operation was abandoned.

Inasmuch as the patient had been under the anesthetic for two hours, it did not seem wise to attempt any modification of the operation, but in a similar case under favorable circumstances it would seem reasonable to attempt to expose the facial branches in the posterior part of the parotid (assisted by a needle electrode), and, if they were found, to reflect a portion or the whole of the hypoglossal or spinal accessory nerve and do an end-to-end suture.

CASE 6 (case referred by Dr. L. L. Mial).—John L. E., aged 19, had a complete left facial palsy after a mastoid operation which was done five and one-half months previously. The palsy was first noted twenty-four hours after operation and became complete forty-eight hours later. After the third month there seemed to be some slight improvement about the eye, but it was of short duration, and for six weeks before operation there was absolutely no progress; there was complete R. D., and the consulting neurologist gave an absolutely bad prognosis.

Operation.—On Feb. 14, 1905, operation was performed under ether anesthesia. The transverse process of the atlas was more than twice as large as usual and caused a distinct rounded prominence of the soft parts behind the angle of the jaw. This anomaly (which was bilateral) rendered the later steps of the operation exceedingly difficult. The great auricular nerve was identified and retracted instead of being divided as in the preceding cases. The facial nerve was readily identified. Around it and compressing it for a distance of a centimeter from the stylomastoid foramen was dense cicatricial tissue from which it was dissected with some difficulty and then it was divided at the stylomastoid foramen. This cicatricial compression would have caused a persistent palsy. The hypoglossal was exposed as usual, but because of the anomaly above mentioned it lay at the bottom of an unusually deep and narrow hole. The anastomosis was finally completed after much difficulty and considerable traumatism to the hypoglossal. The operation lasted two hours.

Subsequent History.—The patient reacted well and primary union resulted. From the considerable operative traumatism to the hypoglossal it was expected that a well-marked paralysis of its muscle-field would result, but happily this did not occur. There was a very slight degree of deviation of the tongue to the left, but it could be moved in all directions voluntarily. There was but slight disturbance of phonation and deglutition. There was loss of sensation in the upper part of the auricle. He returned home on the fifth day. Ten months have elapsed and there is no evidence of returning power.⁴

CASE 7 (case referred by Drs. Ducl and Ledermann).—August L., aged 28, had a complete left facial palsy following a mastoid operation in January, 1905. After eight and one-half months there was no evidence of returning power, and, as the probability was that the nerve had been divided at the mastoidectomy, nerve anastomosis was decided on.

Operation.—On Oct. 14, 1905, under ether anesthesia, part of the lower facial canal was removed and the nerve divided. Even so it was somewhat shorter than was desirable. The anastomosis was carried out in the usual manner, except that no Catgile membrane could be wrapped about the junction. The operative result could be classed only as fairly satisfactory.

Postoperative History.—The recovery was good and primary union resulted. The day after operation the tongue deviated slightly to the left and there was slight interference with swallowing. A week after operation the tongue could be voluntarily moved in all directions, although its left side looked somewhat smaller than the right. One month after operation the excessive lacerimation of the left eye, which had been present before operation, ceased, and the left side of the face "felt different and stronger." Ten weeks after operation

the face looked very slightly less asymmetrical. The tongue, while smaller on the left side, is freely movable in all directions. The diminished lacerimation and improved facial symmetry indicate a probably favorable result.

In the third, fifth and sixth cases there was considerable cicatricial tissue below the mastoid tip surrounding the facial trunk after its exit from the stylomastoid foramen. To identify and free the facial nerve under these conditions is a delicate and tedious task. In future similar cases it would seem a more certain and rapid procedure to expose the facial nerve in the lower part of its canal by removing some of the mastoid bone and then to follow the identified nerve through the cicatricial tissue to the parotid gland.

In other cases where the facial trunk is short, later experience teaches that to expose the lower part of the facial canal by the removal of the overlying bone is the quickest and surest way of obtaining a proper length of facial trunk. The amount of bone removed is small and there is no resulting deformity.⁵

RESULTS.

Immediate.—1. Mortality absent and shock very slight.

2. A well-marked paralysis of the hypoglossal nerve was present in the first three cases, with disturbed phonation and deglutition. These disturbances disappeared after from six to ten weeks, though moderate unilateral atrophy of the tongue persisted.

In the fourth, sixth and seventh cases the evidence of hypoglossal damage was very slight and showed only by the least deviation of the protruded tongue to the paralyzed side.

3. Each case healed by primary union. The scar was small and not very noticeable.

Remote.—1. A moderate hemiatrophy of the tongue has persisted in Cases 1, 2 and 3, though in each case the power to move the tongue in all directions has returned and the patients are conscious of no inconvenience. In Cases 4 and 6 after three months and in Case 7 after two months there appeared some atrophy of the tongue on the paralyzed side, but without loss of voluntary control or sensible inconvenience to the patient. The explanation of this delayed atrophy is not yet clear.

2. Voluntary motion to a very satisfactory degree has returned in Cases 1, 2 and 3. In Case 1, because of the unsatisfactory conditions found at operation, but little was to be hoped for, and yet by faithful attention to the details of after-treatment the patient has made such progress in twenty-five months that nearly complete return of power is to be expected ultimately (Figs. 1-16).

Case 2 made rapid progress toward the return of power between the fourth and sixth months, after which time she disappeared from observation and could not be located again (Figs. 17-20).

Case 3, without paying any attention to after-treatment, came back at the end of thirteen months with a considerable return of voluntary control over the face (Figs. 21-26).

Case 4, though paralyzed for twelve years and with badly atrophied muscles, yet showed beginning return of power around the chin and corner of the mouth at the end of five months, and this power is steadily, though slowly increasing and extending (Figs. 27-32).

4. In reading the proof of this article, we are able to add the following memorandum: February 12, one year after operation, the patient was seen again. Distinct voluntary motion has appeared in muscles of chin, lower lip and about the angle of the mouth.

5. Dr. Chas. H. Frazier of Philadelphia, and Dr. A. B. Ducl of New York each made this suggestion in conversation with the authors.

Case 6, at the end of ten months, had not shown any return of voluntary power (but see Footnote 4 in this connection).

The improvement in the face after the nerve anastomosis follows certain interesting lines. First, the patient notices, in from three to six weeks, that the eye of

those cases where the muscles have markedly atrophied during a prolonged palsy. During this period the strength of galvanic current required to cause contraction in the facial muscles when the electrode is placed over the nerve anastomosis steadily decreases.

Third, in from five to eight months, voluntary motion



Fig. 9.—Case 1. Thirteen months and three weeks. Improved smile.



Fig. 10.—Case 1. Thirteen months and three weeks. Tongue voluntarily protruded to left.



Fig. 11.—Case 1. Twenty-five months. Improved elevation of angle of mouth in smiling, showing teeth and gums on right side.



Fig. 12.—Case 1. Twenty-five months.



Fig. 13.—Case 1. Twenty-five months. Elevation of lower lip; accentuation naso-labial fold.



Fig. 14.—Case 1. Twenty-five months. Closure of eye. Marked movement in face and chin muscles.



Fig. 15.—Case 1. Twenty-five months. Beginning motion in right frontalis muscle.



Fig. 16.—Case 1. Twenty-five months. Motion in right corrugator supercillii muscle.



Fig. 17.—Case 2. Two weeks after operation, showing deviation of tongue to right (paralyzed) side.



Fig. 18.—Case 2. Four months after operation, showing protrusion of tongue nearly normal.



Fig. 19.—Case 2. Six months after operation. In attempt to show teeth the normal side is so strong as to pull the paralyzed (right) side of the face over.



Fig. 20.—Case 2. Six months. Volitional movement of right (paralyzed) side of face alone showing separate control of it.

the paralyzed side feels more comfortable and that laceriation is less annoying.

Second, in from six to twelve weeks, the patient and friends notice that the face is less asymmetrical in repose and, in from three to five months after operation, almost perfect symmetry in repose is present, except in

appears, first about the corner of the mouth and in the chin, and then later extends to the muscles above, involving, last of all, the eyebrow and forehead muscles. It is worthy of note that improvement continues over a very long period of time. After twenty-five months

Case 1 is still adding to the number of muscles as well as the range of motion under his control.

The results thus far reported by various authors (see footnote on page 862) place the relief of facial palsy by nerve grafting among the standard surgical procedures.

divided nerves (divided in part or in whole) and the lateral implantation method; (c) the choice of time after the onset of the paralysis when the operation should be done.

(a) Until 1902, in the great majority of cases, the



Fig. 21.—Case 3. Before operation.



Fig. 22.—Case 3. Before operation.



Fig. 23.—Case 3. Thirteen months after operation, showing power to protrude tongue to left (normal) side.



Fig. 24.—Case 3. Thirteen months after operation. Face symmetrical at rest.



Fig. 25.—Case 3. Thirteen months. Complete closure of right eye; some action of right corrugator supercilii, and marked voluntary movement of right side of face.



Fig. 26.—Case 3. Thirteen months. Dimpling of chin, and face movements dissociated from those of eye and forehead, showing separate control.



Fig. 27.—Case 4. Before operation. The pouching of the left side of the face is due to a very considerable atrophy of the muscles.



Fig. 28.—Case 4. Before operation. The pouching of the left side of the face is due to a very considerable atrophy of the muscles.



Fig. 29.—Case 4. Before operation. The pouching of the left side of the face is due to a very considerable atrophy of the muscles.



Fig. 30.—Case 4. Eleven months after operation. Very slight improvement in the symmetry of the face at rest.



Fig. 31.—Case 4. Eleven months. Showing marked voluntary dimpling of chin and elevation of lower lip.



Fig. 32.—Case 4. Eleven months. Protrusion of tongue in straight line.

DISCUSSION OF METHODS.

The chief questions open to discussion relate to (a) the choice between the spinal accessory and the hypoglossal nerves as the source of new power for the facial; (b) the choice between the end-to-end suture of the

spinal accessory nerve was used, but since that time most operators have turned to the hypoglossal as a more satisfactory source of power.

In all the "accessory" cases noted, there have been associated movements between the shoulder and the face

muscles which have resulted in unsightly grimaces and distortions. Ballance and Stewart and some others report that, after a long interval of time, patients can dissociate the two groups of movements by persistent effort and re-education of the cortical centers. This objection, therefore, is somewhat less valid than it was primarily supposed to be.

During the last three years the hypoglossal has chiefly been used to innervate the facial because of the more intimate relations, both anatomic and physiologic, of their centers in the cortex, as well as in the medulla. Moreover, the muscle fields of these two nerves are most intimately correlated in their activities.

The advantages, indicated by these theoretical considerations, seem to be derived in actual practice from the use of the hypoglossal nerve, if one judges by a comparison of the reported results in the two series of cases. Moreover, Ballance and Stewart, who report the largest number of "accessory" anastomoses, state that in future they shall use the hypoglossal nerve.

The theoretical considerations certainly would seem to favor transverse section of whichever nerve is chosen, followed by end-to-end suture of its proximal stump to the distal portion of the paralyzed facial. One would expect a more rapid and complete nerve regeneration and a corresponding improvement in the muscle-field. Moreover, the period of re-education of the cortical centers would be presumably diminished, since they would attend only to the demands of one muscle-field, instead of dividing responsibility, as they do in cases of lateral implantation.

However, in the cases reported, the results have shown no material advantages in favor of the end-to-end suture, which, on the contrary, has certain decided drawbacks. Whether the accessory of the hypoglossal is used, there is complete and permanent paralysis of the corresponding muscle-field. When the accessory is used, the trapezius and sternomastoid or trapezius alone (according as the whole or only the trapezius portion of the nerve is divided) are paralyzed, soon atrophy, cause drop shoulder and a marked asymmetry which is especially conspicuous in women wearing low-cut gowns.

Where the hypoglossal is cut, the difficulties with phonation, mastication and deglutition noted in the early weeks of our cases must become permanent, although the patient may so adapt himself to his new conditions as to avoid much of the discomfort incident to his disability. To justify itself, this method must show very distinct advantages over others in results, and, as previously stated, it has failed to do so in the cases reported up to date (January, 1906).

On the other hand, the lateral implantation method causes the minimum of additional damage to the patient, and the results have been very satisfactory in nearly every case (see especially Figs. 1-16). The technical difficulties of this operation are slightly greater.

To those who prefer the transverse section, followed by end-to-end suture, the suggestion is made (Taylor) that the distal end of the accessory or hypoglossal, whichever may be used, be anastomosed by lateral implantation into the nearest spinal motor nerve root. This would add but little to the time and difficulty of the operative procedure and would save the corresponding muscles from permanent paralysis.

(c) The interval of time which should be permitted to elapse between the onset of paralysis and the operation is the subject of wide diversity of opinion among authors.

The minimum interval mentioned is four months (Spiller and others), while many think that at least a year should elapse. Other things being equal, everyone must agree that the early operation has all the advantages. The one reason for conservatism is the great possibility of spontaneous recovery. Until the study of a large number of cases shall give us a method by which an early prognosis may be arrived at with a considerable degree of precision, there can be no scientific basis for the selection of these cases for operation.

For present purposes an interval of a year might be allowed, for by that time returning motion would have appeared in the vast majority of cases where spontaneous recovery would occur. In cases where the nerve is divided and perhaps a segment removed, as in gunshot injuries, operative procedures, etc., obviously the anastomosis should be done at once.

On the other hand, there is no fixed time during the course of a paralysis after which nerve anastomosis is contraindicated, for cases are reported where returning power has followed anastomosis after the paralysis has persisted from twelve to twenty-nine years. As long as the paralyzed muscle tissue has not completely atrophied and entirely changed to connective tissue there is a possibility of success.

In every case, regardless of other considerations, both before and after operation, the paralyzed muscles should be kept in the best possible condition by means of massage, electricity, etc., in order that returning nerve power may find good muscle to work on.

The literature of the subject to which we would refer is as follows:

1. C. A. Ballance, H. A. Ballance and Purves Stewart: *British Medical Journal*, May 2, 1903.
2. Ballance and Stewart: *Healing of Nerves*.
3. Faure and Foret: *Gazette des Hôpitaux*, March 8, 1898.
4. Barrago Chiarella: *Il Policlinico*, February, 1901. Reviewed in *Centrbl. f. Chir.*, vol. xxviii, p. 718, 1901.
5. Manasse: *Archiv. f. klin. Chir.*, vol. lxi, p. 805, 1900.
6. Kennedy: *Philosophical Transactions of the Royal Society; series B*, vol. xcix, pp. 127-162.
7. Breuvotte: *Travail. Neur. Chir.*, p. 92, 1901.
8. Hackenbruch: *Bericht über die Verhandlungen der Deutsch. Gesell. f. Chir., Kongress*, vol. xxiii, 1903, p. 46. *Archiv. f. klin. Chir.*, vol. lxxi, pp. 631-638, 1903.
9. Gluck: *Centrbl. f. Nervenb. und Psychiat.*, vol. xxvi, pp. 404-409, 1903.
10. Faure: *Bull. et Mem. Soc. de Chir.*, Paris, No. xxix, 830-849, 1903.
11. Nicoll: *Lancet*, vol. ii, p. 956, 1903.
12. Cushing: *Annals of Surgery*, May, 1903.
13. Korte: *Deutsche Med. Woch.*, April 23, 1903.
14. Frazier: *University of Penn. Med. Bulletin*, November, 1903.
15. W. W. Keen: *Jour. Nerv. and Mental Diseases*, vol. xxx, p. 368, 1903.
16. Taylor and Clark: *Medical Record*, New York, Feb. 27, 1904.
17. Munch, F.: *Semaine Médicale*, No. xxiv, pp. 73-75, 1904.
18. Alexander, G.: *Archiv. f. Ohrenkr.*, Leipzig, vol. lxiii, pp. 1-10, 1904.
19. Bardenheuer: *Münch. Med. Woch.*, vol. ii, p. 1273.
20. Villar, F.: *Gaz. hebdom. d. sc. Med. de Bordeaux*, No. xxy, pp. 66-68, 1904; *Bull. de Laryng.*, *Otol. et Rhinol.*, Paris, No. vii, p. 186, 1904.
21. Rockenheimer, P.: *Archiv. f. klin. Chir.*, vol. lxxii, pp. 461-486, 1903-04.
22. Bahinski: *Journal de Med. in. Paris*, vol. ix, p. 275, 1905.
23. Minor, L.: *Monatsschr. f. Unfallheilk.*, Leipzig, vol. xii, 1905.
24. Barth, E.: *Zeltschr. f. Ohrenheilk.*, Wiesbaden, vol. i, 1905.
25. Gluck, T.: *Zeltschr. f. Diätet. und Physik. Therapie*, Leipzig, vol. ix, pp. 24-30, 1905.
26. Stewart, P.: *Westminster Hops. Reports*, No. xiv, pp. 40-53, 1905.
27. Sick: *Deutsch. Med. Woch.*, vol. xxxi, p. 652, 1905.

Rest in Inflammation.—Physiologic rest is of infinite importance and is always indicated in acute inflammation. In the exercise of function blood is taken to a part and an existing inflammation is aggravated.—Brainard, in *Journal Michigan State Medical Society*.

A CLINICAL STUDY OF MIXED INFECTION IN TUBERCULOSIS.

PRELIMINARY REPORT.*

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One of the many debatable questions in tuberculosis is that of mixed infection. Some observers account for nearly all elevations of temperature which pass beyond a very moderate limit as being due to a mixed infection. Others, on the contrary, question whether the advent of other bacteria into the field of tuberculosis has anything to do with the production of the fever, even that of the hectic type.

Many bacteria besides the tubercle bacillus are found in tuberculous sputum. The various pus organisms, especially the streptococci, are commonly present. That these various organisms are found in the sputum is not sufficient ground for associating them with the tuberculous process, for they may have come from the mouth, throat or other portions of the respiratory tract. To obviate this possibility of error Pfeiffer¹ suggested that the particles of sputum for examination be taken from the center of the mass of sputum. Kitasato even went further and washed the sputum mass in sterile water before the sample for examination was taken.

Other observers, as Petruschky,² Fraenkel³ and Schroeder and Naegelsbach,⁴ examined the blood to see if it contained the organisms. These examinations usually proved to be negative. It is only rarely that the various organisms mentioned in connection with tuberculosis are found in the blood, and when found it is usually in the blood taken after death, and it is highly probable that they passed into it during the hours immediately preceding death.

Still other observers, as Ortnér,⁵ Sata,⁶ Schabad,⁷ Cornet⁸ and Kitasato,⁹ made cultures from the walls of cavities after the death of the patient. In some instances these cultures were taken almost immediately after death, to prove that the organisms were there during life and that they had not come from other parts of the air passages after the death of the patient.

This method revealed about the same varieties of organisms as were found by the examination of the sputum. The pus organisms, especially streptococci, were most commonly found. Staphylococci, pneumococci, influenza bacilli and pseudo-diphtheria bacilli were pres-

ent less commonly. In some instances no other organisms than the tubercle bacillus were found.

The important fact to be borne in mind in these observations is that these various organisms were found not only in the air passages and cavities present, but also in the lung tissue beyond; some, as Ortnér, even noting them in the tissues which had not yet been invaded by the tubercle bacillus.

Some idea of the frequency with which other organisms associate themselves with the tuberculous process may be gained from the following: Ortnér found an organism which he named micro-coccus-pneumoniae, but which later proved to be a streptococcus in twenty-eight out of forty-two examinations. Pasquale¹⁰ found streptococci in the sputum every time in eighty-two cases. Schroeder and Mennes,¹¹ in twenty-one cases of tuberculosis in all stages, made thirty examinations of sputum and found streptococci twenty-nine times, staphylococci seventeen times and pneumococci fifteen times.

The important question to decide is what part these various organisms, which are found in so large a percentage of the cases of advanced tuberculosis, play in the pathologic processes present.

The mere presence of these organisms in the sputum, cavities and tissues of the lung does not prove that they play a part in the destructive process; however, the clinical picture of what is usually termed a well defined case of mixed infection, with its chills, "hectic" temperature, profuse sweats and general prostration, is similar to that of a severe streptococcal infection. The various culture products made from the tubercle bacillus will produce, for the most part, these same symptoms, and this makes it very difficult for us to decide whether the severe symptoms accompanying so-called mixed infection are due to the tubercle bacillus or the accompanying organisms or to a combined action of the two. The necrosis and liquefaction which accompanies the tuberculous process could also be produced either by the tubercle bacillus alone or by other organisms or by a combination of them. Some claim that the destruction produced by the tubercle bacillus and its toxins is always a dry process, and that when we find a purulent discharge it shows that pus organisms, especially streptococci, have entered the field; while others, as Meissen,¹² say there is not a single symptom or condition present in so-called mixed infection that could not be produced by the tubercle bacillus alone. Those of us who have had considerable experience with the use of tuberculin and other culture products and have had the opportunity to study the physiologic effects of this remedy, as seen in the tuberculin reaction, can readily believe this statement. There is some difference, however. When we have a tuberculin reaction the patient experiences aching of the limbs, back and head, more or less severe, which closely resembles the symptoms accompanying la grippe and which is not so common in cases of so-called mixed infection. There is also a certain nervousness accompanying and preceding this aching which is not usual in the so-called mixed infection.

Having had considerable experience with tuberculin, we were inclined to lay little stress on the effect of other bacteria, and believed that the hectic fever of phthisis, with its accompanying symptoms, the same as that of less degree, was due to the absorption of the tox-

* Read at the International Tuberculosis Congress, Paris, Oct. 2-7, 1905.

1. Pfeiffer: "Die Mischinfektion bei der Tuberkulose." Bericht über den Kongress zur Bekämpfung der tuberkulose als Volkskrankheit, Berlin, 1899.

2. Petruschky: "Tuberkulose und Septicæmie." Deutlich. med. Woch., 1893, No. 14.

3. Fraenkel: "Ueber die Bedeutung der Mischinfektion bei Tuberkulose." Berlin klin. Woch., No. 16, 1898.

4. Schroeder and Naegelsbach: "Bakterienbefunde im Blut von Phthisikern." Münch. med. Woch., Nos. 41 and 42, 1899, und Beiträge zur Kenntniss der Lungentuberkulose, Meissen, 1901.

5. Ortnér: "Die Lungentuberkulose als Mischinfektion." Wien. Leipsig, 1893.

6. Sata: Zeit. für Tuberkulose u. Heilstättenwesen, 1902, vol. II, No. 1.

7. Schabad: "Mischinfektion bei Lungentuberkulose." Zeit. f. klin. Med., vol. xxxiii, Nos. 5 and 6, 1897.

8. Cornet: "Ueber Mischinfektion bei Lungentuberkulose." Wien. Med. Woch., 1892, Nos. 19 and 20.

9. Kitasato: "Gewinnung von Reinkulturen der Tuberkel bacillen und anderer pathogener Bakterien aus Sputum." Zeit. f. Hygiene, 1892, vol. II, No. 3.

10. Pasquale: "D. Streptokokk bei d. tuberk. Infect." Zt. f. B. u. p., vol. xvi, p. 114.

11. Schroeder and Mennes: "Ueber die Mischinfektion bei der Chronischen Lungentuberkulose." Bonn, 1898.

12. Meissen: Beiträge zur Kenntniss der Lungentuberkulose. Wiesbaden, 1901.

ins of the tubercle bacillus together with certain products of destroyed tissue.

In the winter of 1903 our attention was called to the beneficial effect of streptolytic serum in cases of streptococcic infection, and it was determined to use it in cases of so-called mixed infection in phthisis to see if it would have any effect on the temperature. Its use was limited to cases in which the streptococci were found in the sputum, taking the sample according to Pfeiffer's method, after having had the patient rinse the mouth thoroughly before furnishing the sample. Ten patients in all were treated and the serum was advised in two other cases in consultation. The serum was used subcutaneously, usually beginning with 20 c.c. and following with 10 c.c. a day. In several of these cases the injections were continued until the streptococci disappeared from the sputum, while in others they were stopped on account of the severe reactions which followed. In some instances the urticaria was very severe; in others severe pains manifested themselves in the joints, while in still others purpura developed. In one case a cyanosis appeared and a fatal outcome was feared, but after a few hours the patient was restored to her normal condition and no bad effects seemed to follow.

These results were very encouraging, in spite of the severity of the accompanying symptoms. When the treatment could be carried out for a satisfactory period there was a diminution, and in several instances an entire disappearance of the streptococci. Simultaneous with the disappearance of the streptococci in several instances there was an abatement of the symptoms. The fever lowered, the chills ceased and the patient began to improve. There was a change in the character of the sputum in all cases. It became thinner, less in amount and less purulent in character. In some cases, in spite of the diminution and disappearance of the streptococci, the symptoms did not abate. In these cases we were inclined to believe that perhaps the continuation of the fever was due either to the toxins of the tubercle bacillus or the absorption of necrotic tissue.

This experience led us to believe that this remedy had a specific action on streptococci. While all our patients were not relieved of their troublesome symptoms, yet there were sufficient successes to be more than suggestive of the value of the remedy. The great drawback to its administration, however, was the severe reaction manifested by such conditions as urticaria, pains in the joints and purpura. On this account we ceased using it until we learned that it could be given by the bowel. Since then we have taken up its administration again.

Certain investigators, as Ortner, Cornet and Spengler, demonstrated that streptococci are found not only in the sputum and the cavity contents, but also within the lung tissue beyond the areas of necrosis. It was also found that the association of these bacteria was not always productive of temperature.

The following questions suggested themselves:

1. Are the symptoms accompanying so-called mixed infection due to the presence of other organisms, especially the streptococcus, as is generally believed?

2. If the streptococcus is responsible for these symptoms it must be present before they manifest themselves, and would it not be the part of wisdom to treat mixed infection before these threatening symptoms appear?

3. If the streptolytic serum is active against the streptococcus, by its administration in cases where streptococci have not been found in the sputum, or in cases where they might be found, yet are producing no symptoms commonly attributed to them, we might be able to

demonstrate whether or not there is an early mixed infection without marked symptoms and also to gain some idea as to what part the streptococcus plays in the pathology of the disease.

In order to throw light on these important questions we have carried out a series of experiments on twenty patients at the Pottenger Sanatorium for Diseases of the Lungs and Throat. The injections were all given by the bowels and produced no inconvenience, except in one case there was some soreness of the finger joints. We hope to carry on our investigations during the coming year, but believe that our results so far warrant this preliminary report. We make it in the hope that it may stimulate others to investigate this important subject. A study of the varieties of streptococci which complicate tuberculosis shows them to be of very low virulence. The use of cultures from these sources might produce a serum which would be more active against these low-grade cocci than that produced by the ordinary virulent germ, and we would suggest its trial.

The results of our use of the serum are shown in the table. In presenting these cases we will state that those who had been in the sanatorium for a period of time before beginning the use of streptolytic serum had received such treatment as had seemed to be indicated, and during the administration of the serum in all cases such other treatment was administered as seemed best. The serum was administered to all cases daily, *per rectum*, between and including the dates given.

In selecting cases all excepting the last two in the table had a temperature range of 100 or more.

The twenty cases reported herewith were selected from ninety-seven cases under treatment in the sanatorium from March 20 to August 1, 1905, and included the most unfavorable as regards final recovery, although some of those which terminated fatally were most pronounced in responding to the action of the serum by showing amelioration of the symptoms attributable to the streptococcus.

The findings by the microscope have been disregarded in this report. Streptococci were found in the sputum in a number of cases before beginning the use of the serum and were not found subsequently, but the investigations were undertaken depending solely on clinical data.

Believing that streptolytic serum does have at least a certain degree of specific action in streptococcic infection, we endeavored to note the effect on the symptoms and clinical course of the disease which followed its administration. It will be noted that in nearly every case there was a change in the sputum. It became thinner, less purulent and usually diminished in amount. Some of our cases had been in the sanatorium for some time, but were not doing well; others were cases which had just been admitted, but were in bad condition. We had hoped to try it also on favorable cases, but did not in these experiments. There was an improvement noted in the general condition of 17 or 85 per cent. of those treated.

It might be argued that this improvement was due to the hope aroused by the treatment, but such was not the case, for many of the patients had been under treatment and had had many things done for them; others positively objected to the treatment because of the annoyance, while none knew what we expected to accomplish, so the mental stimulus can safely be eliminated.

The administration of foreign serum has some stimulating properties and will sometimes aid the organism in throwing off the disease and might have had some influ-

CASES ILLUSTRATING USE OF STREPTOLYTIC SERUM.

| Brief History. Time of Admission. | General Condition Beginning Use of Streptolytic Serum. | Time Serum Used and Do e. | Results. |
|--|---|---|---|
| Case No. 1.—Admitted Mar. 3, 1905. Third stage involvement; extensive areas in both lungs, also involvement of larynx, pharynx and digestive tract. Temperature range to 104. Symptoms of marked general infection. | Some amelioration of severe symptoms; temperature range less; expectoration less in quantity; continued tenacious and purulent; temperature 102.5. | Mar. 20 to Apr. 2, 10 c.c. | Expectoration somewhat lessened in amt., thinner and raised with less effort; temperature range slightly decreased; some apparent amelioration of general symptoms. Patient discharged unimproved. |
| Case No. 2.—Admitted Jan. 9, 1905, in advanced stage; both lungs involved. | Condition of lungs improved; temperature range continued to go above 100 at frequent intervals; expectoration profuse and tenacious. | Apr. 15 to May 3, 10 c.c. | Sputum became thinner and lighter in color; less purulent; range of temperature less; general condition improved. Patient discharged improved. |
| Case No. 3.—Admitted Feb. 22, 1905. In advanced stage. | Had shown practically no improvement since admission. | Apr. 15 to May 20, 10 c.c. | Condition of patient during stay at sanatorium improved but slightly. |
| Case No. 4.—Admitted February, 1904. In second stage, also lupoid involvement of anterior nares, extending to upper lip, soft palate, pharyngeal wall, epiglottis and arytenoids. | Had treated since admission with culture products and violet rays. Susceptibility to culture products very marked. Temperature range above 100 frequently; condition of lungs and lupoid patches much improved. | Apr. 15 to Apr. 17, 10 c.c. | Swelling and aching of joints manifest. Serum discontinued. |
| Case No. 5.—Admitted Mar. 18, 1905. Second attack; marked involvement of upper portion of both lungs and intestinal tract; temperature 103. | Marked improvement; temperature range above 100 frequently; expectoration profuse and tenacious. | Apr. 15 to May 3, 10 c.c. | Expectoration thinner, less purulent and less in quantity; subsequent improvement more rapid. |
| Case No. 6.—Admitted Feb. 10, 1905. Advanced stage in lungs and intestinal tract. | Improvement of general symptoms; temperature range above 100; expectoration profuse and tenacious. | Apr. 15 to May 3, 10 c.c. May 8 to June 6, 10 c.c. June 7 to July 30, 20 c.c. | Sputum decreased, became thinner and less purulent. Following use of serum the first time, there was marked general improvement, which continued for several days, when it was again used with more marked improvement. Following its use the third time with larger dosage, improvement was still more marked and continuous. |
| Case No. 7.—Admitted Feb. 25, 1905. Involvement of both lungs; previous history of severe pleuritis with effusion; infiltration arytenoids. | Had made marked improvement since admission; severe attack of pleuritis and effusion, left side, developed. | May 3 to May 25, 10 c.c. May 6 to June 5, 10 c.c. | Amount of sputum markedly decreased, thinner and less purulent. General condition much improved. |
| Case No. 8.—Admitted May 5, 1905. Advanced stage, both lungs; temperature had been ranging as high as 103; expectoration profuse and purulent from large cavities; general symptoms of severe infection. | ..... | June 21 to July 5, 20 c.c. | All symptoms greatly improved; expectoration became thinner, less purulent; much less in amount and was raised much easier; temperature dropped to less than 100 F. Progress satisfactory, until extensive breaking down of left lung, which was followed by death of patient. Improvement appeared most marked during the use of streptolytic serum. |
| Case No. 9.—Admitted Apr. 31, 1905. Had been treated the year previous with marked improvement; large cavity in left lung, also involvement of right lung; larynx involved. | Marked improvement; temperature above 100 at frequent intervals; expectoration profuse and tenacious. | May 23 to June 20, 10 c.c. June 20 to June 27, 20 c.c. | Expectoration decreased, thinner and less purulent; general condition improved more rapidly than before administration of serum; maximum temperature 99.5. |
| Case No. 10.—Admitted May 16, 1905. Advanced stage, both lungs; extensive fibrosis; high range of temperature, reaching frequently 104. | ..... | May 22 to June 7, 10 c.c. | Expectoration less in amount and less purulent; rapid amelioration of all symptoms; general improvement until June 7, when severe hemorrhage occurred, followed by death one week later. |
| Case No. 11.—Acute tuberculosis; temperature ranged as high as 105; other symptoms of very virulent infection; large cavity in right lung and involvement throughout both lungs, larynx and intestinal tract; expectoration purulent, exceedingly profuse and offensive. | ..... | May 27 to June 20, 20 c.c. | Rapid improvement of all symptoms, including diminution in quantity of sputum and lessening in its offensive character. June 20 a cavity formed in left lung; general re-infection. Patient died three days later. |
| Case No. 12.—Admitted May 16, 1905. Advanced stage; temperature 101.2; general condition showed marked infection. | Marked improvement in general symptoms; temperature still 100 to 101 almost daily. | May 28 to June 20, 10 c.c. June 20 to June 28, 20 c.c. | Amount of expectoration markedly decreased; less purulent and less tenacious; temperature range lower and general condition improved. |
| Case No. 13.—Admitted Aug. 30, 1904. Advanced stage. | Had made marked improvement under treatment, range of temperature 100 to 101 at frequent intervals. | June 4 to June 20, 10 c.c. June 30 to June 29, 20 c.c. | Sputum less in amount and less purulent; temperature range lower and improvement more rapid after beginning use of serum. |
| Case No. 14.—Admitted Mar. 10, 1905. Advanced stage; temperature 98 to 100. | Condition improved; range of temperature from 97 to 99.5; expectoration profuse, purulent and tenacious. | June 11 to June 23, 20 c.c. | Sputum less in quantity, thinner and less purulent; temperature range lower; nutrition improved. |
| Case No. 15.—Admitted June 13, 1905. Advanced stage; both lungs involved; extensive infiltration and ulceration of pharynx, larynx and arytenoids; also involvement in digestive tract; temperature range 101.2; expectoration profuse, heavy and purulent. | ..... | June 14 to June 30, 20 c.c. | Sputum less in amount, thinner, less purulent and raised with less effort; temperature range lower; symptoms generally ameliorated. June 30 tubercular meningitis supervened; death in thirty-six hours. |
| Case No. 16.—Admitted July 1, 1905. Extensive involvement of both lungs, long standing; extensive fibrosis; temperature range 99 to 102; expectoration profuse, tenacious and purulent. | ..... | July 7 to Aug. 1, 20 c.c. | Expectoration less in amount, thinner and less purulent; temperature range lower; improvement in general condition slight. |
| Case No. 17.—Admitted June 25, 1905. Third stage involvement, both lungs; temperature range 98 to 103.8; expectoration profuse, purulent and tenacious. | ..... | July 7 to Aug. 1, 20 c.c. | Expectoration less, thinner, less purulent; general condition much improved. |
| Case No. 18.—Admitted July 20, 1905. Third stage involvement, both lungs, also larynx; temperature 103; expectoration profuse, tenacious and purulent. | ..... | July 20 to July 30, 20 c.c. | Expectoration less in quantity, thinner, less purulent; reduced temperature range. |
| Case No. 19.—Admitted Aug. 19, 1904. Third stage involvement, with cavities, upper lobe, both lungs. | Condition improved; temperature range below 100; expectoration profuse, very tenacious and purulent. | Apr. 15 to May 3, 10 c.c. May 28 to June 20, 10 c.c. June 20 to June 8, 20 c.c. | Expectoration following first administration reduced in quantity, thinner and less purulent; same condition noted following its use the second time; more marked following increased dose; improvement continuous. |
| Case No. 20. Admitted Dec. 27, 1904. Advanced stage, also laryngeal involvement. | Conditions of both lungs improved; slight improvement of larynx; expectoration profuse, tenacious and purulent; temperature range 98 to 99. | July 8 to July 23, 20 c.c. | Expectoration less in quantity, thinner and less purulent; general condition showed marked improvement and has since continued. |

ence on the general improvement, but it could hardly be expected to have influenced in so marked a degree the character of the expectoration. It seems to us that such an influence can come only through some specific action on the elements productive of the expectoration.

From our studies and observations we would draw the following conclusions:

1. The results of various investigations show that streptococci are found in lung tissue beyond the areas of necrosis, and can be present without causing any acute symptoms, such as high fever, chills, etc.

2. The products of the tubercle bacillus are capable of producing symptoms very near, if not identical, with those of so-called mixed infection, and it is possible that these are sometimes due to the one cause, sometimes to the other, and perhaps at times to both working together.

3. That the streptococcus plays a part, at least in some cases of so-called mixed infection in tuberculosis, and that streptolytic serum has at least some specific action on the streptococcus as witnessed in the reduction of fever and abatement of symptoms in some of these cases of hectic type, and further, that the streptococcus plays some part in the general pathology of the tuberculous process of those chronic cases without marked symptoms (the earlier ones we have not yet investigated) as is shown by the altered character of the sputum, becoming thinner, less purulent and diminished in amount, and in the general improvement which follows the administration of the serum in nearly all cases.

4. The use of streptolytic serum in cases where no acute symptoms were present seemed to exert a favorable influence on the course of the disease sufficiently often to suggest that the presence of the streptococcus affects the tuberculous process unfavorably, even in many cases where it causes no active symptoms, and that mixed infection is a factor to be recognized and dealt with, before the advent of threatening symptoms, the same as tuberculosis is to be diagnosed and treated before the advent of consumption.

5. This field is worthy of further study and investigation, and while we do not feel justified in drawing any absolute conclusions, we feel that our results so far warrant a continuation of our investigations.

AUTOLYSIS.

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(Continued from page 778.)

Before concluding the review of the products resulting from proteid cleavage in the process of autolysis mention has to be made of the formation of plasteins. From the foregoing discussion it is apparent that great activity has been displayed in the study of degradation of the proteid molecule within the body and in the test tube, and an attempt has been made to explain the bearing the work had on our understanding of various physiologic functions. However, there was one great problem which inspired many workers in their labors and which remains unsolved by them. This was to discover a process by which proteid, the chief tissue component, could be constructed out of its simple components, and also to discover the mechanism which the organism employs to build up tissue proteid out of those fragments which are formed in the digestive tract. It has been stated before that the first phase in proteid digestion consists in converting native proteid, which is insoluble in boiling water, into products which are

soluble both in hot and cold water. These products are termed albumose and peptone. Danilewski and his pupil, Okneff,¹⁹ were the first to make the observation that when the soluble substances are exposed to the action of rennet ferment a substance arises which is insoluble in water. This substance was termed plastein. Kurajeff,¹⁵ another student of Danilewski, has shown that the plasteins are formed by the action of autolytic enzymes also. It has been shown in recent years that enzymes possess a double function. They break up complex into more simple substances and again rebuild the original substances from the fragments. Hill made this observation on the enzymes digesting starch, and Kastle and Lowenhart²⁰ on that spitting fat. The first ferment is capable of converting sugar into starch and again starch into sugar; the second possesses the power of converting fat into fatty acids, and the acids into fat.

Attempts were made to ascribe a similar faculty to enzymes digesting proteids, and the plasteins were regarded by many investigators as reconstructed native proteid. The most emphatic supporter of this theory was Herzog.²¹ He based his assumption on a very ingenious experiment. The viscosity of a dilute of native proteid decreases in course of digestion. On the other hand, the viscosity of a fairly concentrated solution of albumose exposed to the action of digestive enzymes increases. This, according to Herzog, may be explained by the reconstruction of proteid. However, if the digestive action of the enzyme is disturbed by the presence of an antiferment, the reconstruction fails. Very recently Kurajeff and his pupil, Grosman,²² exposed digested plasteins to the action of autolytic enzymes and noted the formation of coagulable proteid, and they seem inclined to believe that this indicates a reversible action of the autolytic enzymes. Unfortunately the experiments of various writers on the subject contain many contradictions. While the primary albumoses are considered the mother substance of plasteins by some writers, Kurajeff noted the formation of plastein only from the secondary ones. Further, Bayer,²³ in Hofmeister's laboratory, found that plastein is formed from crystalline cleavage products.

In our own experiments, Stookey and I failed to find any evidence of reconstruction of the lower albumoses into coagulable proteid. By the action of rennet ferment on albumose it was possible to convert the solution into a solid jelly, which was very difficult to fractionate for purely mechanical reasons. If, for the experiment, a solution of albumose of moderate concentration was employed, it turned into a very thick syrup. In the original solution and the one treated with rennet the various albumoses were estimated. The time of treatment with rennet varied from 12 to 48 hours. In no instance was there observed any diminution in the quantity of the lower albumose or of the peptone. Thus there was no evidence of reversion of peptone into coagulable proteid, and it is extremely improbable that enzymotic synthesis of proteid can be made possible before the substances at present known as proteolytic enzymes are divided into their components. Cleavage of proteids by trypsin, pepsin or other proteolytic enzymes is a very complex process. Reversibility of action thus far is known to be a property of enzymes affecting a hydrolytic cleavage. In the course of proteid

19. Mal's Jahresb., vol. xxv.

20. Amer. Chem. Jour., vol. xxiv, 1901.

21. Zetsch. f. phys. Chem., vol. xxxix, 1903.

22. Hofmeister's Beitrage, vol. v, 1905.

23. Ibid., vol. iv, 1904.

disintegration in the tissues and in the digestive tract, the primary products so rapidly suffer further metamorphosis that reversion on a large scale is scarcely imaginable. There might be other synthetical processes to which the organism resorts for the purpose of tissue construction.

It has already been stated that special attention has been directed to the study of the products of autolysis of nuclear material. Through the work of Fischer, it was established that the components of nucleic acid were closely related one to another and all of them, in turn, related to uric acid. In addition, the pathogenesis of many diseased conditions, and particularly that of gout, is closely associated with uric acid. Normally fresh organs contain the components of nucleic acid in a free state only in a very insignificant quantity. Schutzenberger, Salomon and Lehmann (the last working under Kossel) observed that yeast suspended in water and allowed to stand at body temperature gave rise to free nucleic bases, the fresh cells not containing the substances in a free state. Salkowski and his pupils, Schwiening and Biondi, made it certain that the appearance of the substances was due to an autolytic process. More recent investigations have made it clear that through autolytic action purin bases, as soon as they become detached from the complex molecule of nuclein, suffer complete decomposition. Statements to that effect were made by earlier observers, more recently by Kutscher. The observation of Dakin²⁴ is in harmony with this statement, although he could detect in autolyzed kidneys only one purin base, hypoxanthin. The correctness of the statements was demonstrated by my own investigations. Quantitative analysis of all purin bases present in the fresh and in autolyzed organs has made clear the destruction of nucleic bases in the course of self-digestion. Very recently also some information has been gained regarding the chemical process of their disintegration.

In living tissues only adenin and guanin are present in large quantities, while the other two purin bases are found in very insignificant quantities. Walter Jones²⁵ and I,¹⁷ independently of one another, have shown that in the course of autolysis, these two bases are transformed into hypoxanthin and xanthin, respectively. The following table shows the contents of purin bases in 5 pounds of fresh and autolyzed spleen:

| | Fresh spleen. | Self-digested spleen. |
|-------------------|---------------|-----------------------|
| Adenin | 1.85 gm. | 0.0 gm. |
| Guanin | 1.10 gm. | 0.0 gm. |
| Hypoxanthin | 0.30 gm. | 1.2 gm. |
| Xanthin | 0.40 gm. | 0.150 gm. |

Schittlhelm arrived at similar conclusions and has demonstrated further that under certain conditions the bases are transformed into uric acid. The other constituents of nucleic acid, the pyrimidin bases, undergo analogous changes.

The mechanism of this transformation was elucidated by the work of Jones.²⁵ This author accepts the presence in the tissues of two specific enzymes, one capable of acting on guanin and the other on adenin, and further of an oxidizing enzyme, the function of which it is to complete the transformation of nuclear material. The deductions of Schenck²⁶ are similar to those of Jones. Schittlhelm²⁰ has corroborated in a general way the conclusions of Jones. However, he does not support the assumption of the existence of more than

one enzyme which can transform the amino-purins into the corresponding oxy-derivatives. According to Schittlhelm, the entire nuclear destruction is accomplished by three enzymes, one breaking up the nucleic acid into its components, the second splitting off the nitrogen from the nitrogenous constituents, and the third completing the oxidation of the purin derivative. It must be admitted that more detailed information concerning the intermediary products of nucleic metabolism is still wanting.

With this I wish to conclude the review of the products arising on autolysis of surviving organs. Reference should be made to the products of autolysis of sugar and fat, but thus far the investigations in that direction are few in number and the results obtained from them not very significant. This also concludes the review of autolytic action in normal organs. It remains to discuss these results in connection with the original problems which led to all these numerous investigations.

DISCUSSION OF RESULTS.

It has been stated already that the principal object of the work was: 1. To elucidate the nature and the mechanism of those chemical reactions which make the functions of the body possible. 2. To interpret the rôle of individual organs in the animal metabolism. 3. To study the intermediate products of metabolism, since there is a general agreement that by the accumulation in the organism of these substances many diseased conditions are occasioned.

The foregoing review leads one to the conclusion that the knowledge of intermediate metabolism has been furthered considerably. On the other hand, a comparative study of the products of disintegration of various organs fails to bring out marked differences among them, although, during life at least, some organs are known to be the seat of special chemical reactions. This leads one to the assumption that in the animal body the process of self-digestion does not control all chemical reactions occurring in organs, perhaps even not all the processes of disintegration. A most conspicuous instance illustrating this statement is found in the work in which Eck's fistula was employed. By this name is designated a fistula between the vena cava and the portal vein. The aim of the fistula is to exclude the liver from the portal circulation. The organism of the dog possesses a very intense power of burning uric acid; the acid is present in the urine of this animal only in traces, even after injection of two to three grams of the substance. Dr. Sweet and I have demonstrated that animals kept for weeks on a diet free from all precursors of uric acid excrete considerable quantities of it in the urine as soon as an Eck fistula is performed on them. The output is especially increased after the administration of the substance itself.

Evidently under these conditions the organism fails to disintegrate uric acid, although the process of self-digestion is not depressed in the tissues. Thus the mechanism of "burning" uric acid in the living organism is not known yet. Proteid combustion also in the normal living organism apparently is different from the proteid disintegration in the course of autolysis. The great mass of products in the process of self-digestion remains in the stage of nitrogenous acids. A small part of them lose their nitrogen and a still smaller part give rise to carbon dioxide. In the living organism the splitting off of nitrogen from proteid material is a very rapid process, and the transformation of all carbonaceous material to carbon dioxide also occurs with much

24. Jour. of Physiol., vol. xxx, 1903.

25. *Ibid.*, vol. 31, 1904.

26. Zeitsch. f. phys. Chem., vol. xliii, 1904.

greater rapidity than it possibly could take place in course of self-digestion. But it has been stated that disintegration by the process of autolysis does occur during life. This and the foregoing are not contradictory one to another. Every tissue consists of cells of different age, of different states of nutrition and of different resistance. Work on hemolysis has brought out most clearly that individual blood cells vary in their vulnerability. Cells in a state of defective nutrition succumb to the process of self-digestion. In the course of that process enzymes are liberated which are capable of digesting extraneous material also.

It is difficult to demonstrate the correctness of this view on a complex organism, but it is made very clear from observations on the yeast cell. It is the function of that organism to convert grape sugar into alcohol. So long as conditions for this function are favorable there is little evidence of the process of self-digestion in a colony of yeast cells. But as soon as conditions are so altered as to make the normal life and the alcoholic fermentation impossible, a very active proteid-splitting enzyme is developed by the yeast cell which causes digestion of the cell proteid and of other proteid material. In the living organism the two forms of metabolism undoubtedly coexist. One is the result of the function of the organs, the other of their disintegration. The supply of energy required for the maintenance of life is furnished possibly by the first process. It has already been stated that by means of autolysis proteid is converted principally into amino-acids. By this conversion proteid could not furnish the organism with its full calorific requirement. On the other hand, autolytic enzymes may act on cell proteid and on the surrounding proteid in a manner similar to that of the enzymes of digestive glands, namely, rendering them a more suitable material for rapid combustion.

It is marvelous that, notwithstanding the presence of destructive agents in all tissues, organs succeed in guarding their integrity. A most clever investigation of recent years throws light on the mechanism by which this is accomplished. The integrity of the gastric wall, the function of which is to elaborate digestive enzymes, has been the cause of much speculation. Weinland²⁷ demonstrated that this was due to the presence of an antiferment in the digestive glands. In the blood also were found antitryptic substances by Hahn,²⁸ Landsteiner,²⁹ Glaesner³⁰ and Catchart.³¹ The same property was noted in tissue extracts by Dr. Stookey and myself.³² Furthermore, we have demonstrated that tissue extracts exercise an action antagonistic to that of autolytic enzymes. However, in health the two tendencies are so regulated that the tissue disintegration is sufficient to permit the organs to perform their function, while excessive wear is avoided. But as soon as the normal nutrition of the organism is disturbed the autolytic power of tissues increases. The mere fasting of an animal suffices to occasion in the tissues an exaggerated tendency for self-destruction. This was demonstrated by the experiments of Lane-Clayton and Schryver.³³ It has been known for years that in cases of starvation animal organs lose in weight and that the loss varies in different organs. It is not improbable that products formed by disintegration of some organs serve to support the integrity of other more important organs.

More marked is the high destructive power of tissues in diseases of a grave nature. Thus in diseases of the respiratory system and of the heart, an intense self-digesting tendency of the tissues was noted by Schlesinger. In infectious diseases a similar observation was made by Flexner.³² The work of this author preceded that of Schlesinger,³³ and is very important for the reason that it furnished an interpretation for some old observations of pathologists.

Flexner demonstrated an unusually high rate of self-digestion in organs removed from individuals who succumbed to typhoid fever and other infectious diseases. The observation on typhoid is of special interest, since the exaggerated autolysis in the course of the disease can not be ascribed to the action of the micro-organism, for it is known that the proteolytic power of that germ is very slight. That this high rate of self-digestion is not merely a postmortem phenomenon may be concluded from the old clinical observation, that products of proteid digestion are eliminated by the kidneys in the course of infectious diseases. The occurrence of peptonuria in these pathologic forms is not infrequent. Thus, in the light of the new investigation, this symptom acquires a special significance. So long as the nutrition is in a sufficiently good condition to prevent wasting of the tissues of the body, pepton is not present in the urine.

However, the softening and the wasting of tissues is most striking when these are under the influence of protoplasmic poisons. For this reason the study of phosphorus poisoning has attracted great attention. Martin Jacobi⁹ first pointed out the high rate of autolysis of the organs removed from animals killed by phosphorus poisoning.

In this condition self-digestion takes place not only in surviving organs, but also during life. This may be concluded from the work of Abderhalden²¹ and his co-workers, who recently have demonstrated the presence of the crystalline components of the proteid molecule in the urine of animals poisoned with phosphorus.

The importance attached to the study of phosphorus poisoning is largely due to the resemblance which the clinical symptoms of this condition bear to that of a spontaneous pathologic form known as yellow atrophy of the liver. While the morphologic changes in the liver in the two conditions are not absolutely identical, still they present many points of similarity. The most striking are the disintegration of cellular elements and the so-called fatty degeneration of the organ. Through the work of many investigators, and particularly through that of Wakeman and Waldvogel, it has become evident that the changes which the liver undergoes in these pathologic conditions are identical with those which the organ suffers in the course of autolysis. Indeed, the fact that the liver of persons who have succumbed to yellow atrophy contains products of proteid digestion was demonstrated by Salkowski more than twenty years ago and was recently corroborated by Alonzo Taylor.³³ However, in neither of the two forms are the changes limited to one organ. Jacobi has demonstrated that the blood in phosphorus poisoning presents a striking loss of coagulability. Still more striking is the power it possesses of liquefying coagulated blood. This peculiarity was interpreted as being due to the presence of a proteolytic enzyme in the blood. In the course of yellow atrophy, products of a proteid cleavage have been

27. *Zeltsch. f. Biol.*, vol. xlii, 1903.

28. *Münch. med. Wochft.*, 1903.

29. *Cent. f. Bacteriol.*, vol. xxvii, 1903.

30. Hofmeister's *Beiträge*, vol. iv, 1900.

31. *Jour. of Physiol.*, vol. xxxi, 1904.

32. *Univ. of Penn. Bull.*, July, 1903.

33. *Jour. of Med. Research*, vol. viii, 1902.

found in the blood by Frerichs. This has been corroborated by many investigators, and very recently Neuberg and Richter³⁴ have shown that leucin, tyrosin and lysin may be present in the blood in quantities which clearly show their origin could not be limited to the liver alone.

Thus, in the foregoing forms all tissues are apparently affected in the same manner. Marked autolysis in them may be considered a symptom of decline in general health and nutrition. However, there are conditions in which self-digestion is located in one organ only; thus the atrophy of the thymus, the involution of a puerperal uterus, are accomplished by a process of autolysis. The softening of tumors is brought about by the same mechanism. This was made clear through the work of Petry,³⁵ who demonstrated that freshly removed tumors contain products of proteid cleavage. The same author further demonstrated that the rate of self-digestion of the new growth is higher than that of a normal tissue. An attempt was also made to study the toxicity of the products resulting from this process. However, neither from a chemical nor from a pathologic point of view could a difference between the end-products of autolysis of tumors and those of normal tissues be detected. Indeed, the intensity of self-digestion is high in all organs composed of cellular elements endowed with rapid growth.

The occurrence of local autolysis is not, as a rule, productive of a lowering in general health. On the contrary, it tends to restore normal conditions when these have been disturbed.

There are other conditions in which the process of autolysis is of aid to the organism in the efforts to maintain its integrity. It has been stated already that in the course of infectious diseases tissues possess a high power of autolysis. Investigations of Blum,³⁴ Conradi³⁵ and Levaditi³⁶ have shown that autolysis may be one of the means to which the organism resorts in order to elaborate protective substances. Substances of two distinct groups are formed in the organism as the result of infection. Those of one group aim to destroy the micro-organism and are designated bactericidal; the purpose of the other is to neutralize the toxin elaborated by the micro-organism; these are commonly named antitoxin. Normal tissues in the course of autolysis may give rise to substances of either group.

Blum has shown that the products of autolysis of lymph glands possess the power to neutralize tetanus and diphtheria toxins and cobra venom. The mechanism of this action is not based merely on the physical properties of the autolyzed gland, for it is possible to save animals from death by injecting the products of autolysis subsequent to the injection of toxin.

Further, Conradi has tested the bactericidal power of the products of self-digestion of various organs. This author noted that the last, added to a suspension of bacteria in broth, prevented their growth. The intensity of bactericidal power varied in different organs, as presented in the following table:

| | |
|----------------------|--------|
| Muscle | Strong |
| Lymphatic gland..... | Strong |
| Liver | Strong |
| Spleen | Strong |
| Thymus | Marked |
| Suprarenal | Marked |
| Bone marrow..... | Slight |
| Pancreas | None |
| Thyroid | None |

Glancing over the table, one is struck by the fact that organs rich in leucocytes are most efficient in elaborating protective substances against infection. And one is naturally led to the analysis of the rôle played by the white blood cells in the effort of the animal body to maintain its integrity. A review of all the information gained concerning the action of leucocytes on the tissues shows that this is similar to the action of the digestive, tissue enzymes. A tissue invaded by the white blood cells is subject to the action not only of the local enzymes, but of those of the blood cells as well. Digestion caused by the last, strictly speaking, can not be regarded as self-digestion. However, the two processes present so much similarity that they are classified by most writers under the same head of autolysis.

The formation of proteid-digestion products through the action of leucocytes was first noted by a Russian writer, Eichwald, in 1864. The observation has been corroborated by many scientists and clinicians. Pepton has been demonstrated in pus and in the urine in all conditions associated with abscess formation. But the work that has attracted most attention and stimulated most research is that of Friedrich Müller. This author has demonstrated that in croupous pneumonia the resolution of the exudate is accomplished by a process of autolysis. The products arising in the course of resolution are identical with those occurring in proteid digestion. The mechanism of this process has been interpreted by Flexner, who, studying the intensity of autolysis in different stages of croupous pneumonia, observed that the intensity was very high in the stage of gray hepatization and very low in the stage of red hepatization, and explains this by the abundance of leucocytes in the exudates in the first condition and their scarcity in the other. Flexner also noted that in unresolved pneumonia the autolytic power is very imperfect. In this condition, as is well known, the exudate is very poor in leucocytes.

Flexner is inclined to interpret the failure of absorption of the exudate in unresolved pneumonia as being due to the disproportion between the leucocytes and the other constituents. Indeed, the correctness of the assumption that the absorption of an exudate is accomplished by the action of leucocytes was established by the work of Opie,³⁷ who has noted that a fresh exudate does not possess the same degree of autolytic power as an old one. He has also noted that the lack of self-digestion in the first is due in some degree to the presence in the serum of a substance checking the digesting action of the blood cell. The rôle of the leucocyte in the absorption of inflammatory exudates has been previously described by Ascoli and Mareschi³⁸ and by Umber,³⁹ but the details of the mechanism were not fully understood until the appearance of the work of Opie. The discovery of the substance capable of keeping in check the destructive work of the blood cell is of great value for the understanding of the process. And it is now established that in the white cell the organism finds its most active factor for repairing the damaged and inflamed tissue.

There still remains to be discussed one point in the mechanism of leucocytic action. Regarding other tissue enzymes it has been stated that the destruction of the cell always precedes their liberation. Many writers have surmised that this applies also to the white blood cell. And yet this has not been fully established. The obser-

34. Deutsch. med. Wochft., No. 16, 1904.

35. Hofmeister's Beiträge, vol. I, 1902; vol. v, 1904.

36. Ann. de l'Inst., Pasteur, vol. xvii, p. 186.

37. Jour. of Exp. Medicine, vol. vii, 1905.

38. Mal's Jahresb., vol. xxxii, 1902.

39. Münch. med. Wochft., No. 49, 1902.

vation that in leukemia autolysis is noted during life seems to contradict the foregoing assumption. However, it is possible that the dead cell exercises at least a greater digestive action than the living. Hedén²⁴ and Opie have demonstrated that from the white cell two enzymes can be obtained. One resembles the enzyme elaborated by the pancreatic gland, the other the autolytic enzymes. It is conceivable that the first is secreted during the life of the cell, the last liberated only after its death. It is possible also that, once set free, the autolytic enzyme increases the power of the other enzyme. An analogous action of the spleen on the pancreas has been assumed by many writers and was proven by Stookey and myself. Thus waste and repair are controlled to a large extent by the same factors.

Autolysis, then, is the process by which dead tissue is not only prevented from becoming a burden to the organism, but, in addition, becomes converted into useful fuel material. By the aid of these processes diseased tissues, pathologic formations and new growths are removed and replaced by normal healthy tissues. The organism resorts to this process also for elaboration of protective substances against bacteria and bacterial toxins. It still remains to be demonstrated whether or not in the course of autolysis enzymes are formed which are concerned in producing that energy which makes all animal functions possible.

AN EXAMINATION OF THE STOOLS OF 100 HEALTHY INDIVIDUALS, WITH ESPECIALLY REFERENCE TO THE PRESENCE OF *ENTAMOEBA COLI*.

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Numerous investigators have found amebas in the stools of healthy persons, but, since they have mostly made no distinction between *Entamoeba coli* and *Entamoeba dysenteriae*, their results can not be considered in this connection.

Schaudinn,¹ however, examining the stools of healthy individuals, demonstrated the presence of the *Entamoeba coli* in the stools of 50 per cent. of those examined in West Prussia, in 20 per cent. of those examined in Berlin, and in 66 per cent. of those dwelling on the shores of the Adriatic.

Craig² demonstrated the presence of *Entamoeba coli* in the stools of healthy individuals in 65 per cent. of the cases and in 50 per cent. of the 150 cases examined of patients suffering from other than intestinal disease.

These results would seem conclusively to demonstrate the fact that the *Entamoeba coli* is an extremely common intestinal parasite and the strong probability of its innocuous nature. But while Strong,³ in an investigation carried out in the Philippine Islands, a place where we should naturally expect to find this organism at least as widely distributed as it is in the United States, found only 8 out of 200 individuals infected with *Amoeba coli* (Strong) and Musgrave and Clegg⁴ state that "all

amebas are or may become pathogenic," further observations on the *Entamoeba coli* are not out of order.

METHOD.

In order to determine if it was possible to find the *Entamoeba coli* in an ordinary hard stool, a number of such specimens were examined by triturating small portions of the stool in normal salt solution with a platinum loop on the glass slide. In a number of cases this method was successful, and it is probable that the administration of salts only facilitates the finding of amebas by furnishing a ready-made liquid stool in which the amebas have become dissolved out of the hard fecal matter and become suspended in the fluid. As previous investigators have usually administered salts, however, the following method was adhered to in obtaining the 100 stools considered here: 60 c.c. saturated solution of magnesium sulphate were administered and the liquid stool examined as soon as passed.

The results obtained from this examination are classified in the following tables, but before proceeding to their consideration it should be stated that the natives examined were members of the Philippine constabulary and Philippine scouts, mostly the former, and that the white soldiers were taken partly from the Hospital Corps and partly from Companies A and D of the 20th U. S. Infantry. At the time of examination they were all stationed in the Cottabato Valley, Mindanao, P. I. The natives come from all parts of the islands, and, while a large proportion of them are Moros, they have served in other islands. The American soldiers come from 24 different states of the Union, and are, therefore, not drawn from any particular district. All of the men were in good health and on active duty at the time examined. Two of the Americans have a history of chronic dysentery several years ago. This may have been simply some form of enteritis associated with the *Entamoeba coli*. Both men are in perfect health at the present time.

The characteristics of the *Entamoeba coli* observed in these specimens as distinguished from *Entamoeba dysenteriae* are as follows:

| ENTAMOEBA DYSENTERIAE. | ENTAMOEBA COLI. |
|--|---|
| 25-30 Microns. | 10-20 Microns. |
| (Not a distinguishing feature.) | |
| Usually some other shape. | Spherical when resting. |
| Greenish. | Opaque grayish. |
| Ectoplasm and entoplasm easily distinguished. | Ectoplasm and entoplasm distinguished with difficulty. |
| Ectoplasm very refractive. | Ectoplasm not refractive. |
| Ectoplasm finely granular. | Ectoplasm homogeneous. |
| Entoplasm coarsely granular. | Entoplasm finely granular. |
| | PSEUDOPODIA. |
| Large and easily distinguished. | Entirely ectoplasm. Hard to distinguish. |
| Contain ectoplasm and entoplasm. | |
| Many vacuoles. | VACUOLES. |
| | Vacuole absent usually. Never more than one. |
| | NUCLEUS. |
| Often absent. When present structure of nucleus hidden except in stained specimens. Nuclear membrane not well defined. | Almost invariable with well-defined nuclear membrane and other structure. |
| Changes position markedly. | In moving organism retains its relative position. |
| Many. | RED CORPUSCLES INGESTED. |
| | None observed. |
| | MOTILITY. |
| Great progressive motility. | Often absent, and when present, of limited extent and short duration. |

These are a part of the differences observed by Craig² to exist between the two species. In this investigation no attempt was made to differentiate the two species by

1. "Arbeiten aus dem Kaiserlichen Gesundheitsamte," 1903, xix, No. 3, p. 563.

2. "Observations on Amebas Infecting the Human Intestine," American Medictne, vol. ix, Nos. 21, 22 and 23, 1905.

3. "Circulars on Tropical Diseases," No. 1, February, 1901, p. 10, Manila.

4. "Bulletin No. 18," Bureau of Government Laboratories, Biologic Laboratory, Manila, P. I.

stained specimens or by observation of the various methods of production, since the object desired was to demonstrate the presence of the *Entamoeba coli* by a simple clinical examination such as is generally applied to suspected cases of amebic dysentery; at the same time reproduction of fission was observed in several cases, while reproduction by encystment was never seen.

It follows as a result of these observations that not only is *Entamoeba coli* often present in the intestines of normal individuals in this region, but that it is by far the most common parasite, having been found in 50 per cent. of the American soldiers examined, while the next most common parasite, the *Cercomonas intestinalis* was only present in 24 per cent. of the cases. In the natives the *Entamoeba coli* was present in 70 per cent. of the

ducing a certain disease and which is also present in from 50 per cent. to 70 per cent. of normal individuals.

The presence of *Ankylostomum duodenale*, which we know is of pathologic significance, in 64 per cent. of the normal natives examined, may at the first seem to contradict this statement, but a further consideration shows this to be by no means the case. The ankylostoma were, indeed, nearly as widely distributed, but were very few in number in any given case (see below), and the malevolent influence of two or three of these minute worms would be negligible. It is only when present in great numbers that they cause a sufficient loss of blood to produce the anemia characteristic of ankylostomiasis.

WHITE SOLDIERS.

NATIVE SOLDIERS.

| Number. | History of Dysentery. | History of Diarrhea. | Entamoeba Coli. 35 or 70 per cent. | An 2/3 to 1/2 to 1/4 per cent. | Trichocapsus Dispar 27 or 34 per cent. | Cercomonas 18 or 35 per cent. | Acanth. Lumbrioides. 10 or 20 per cent. | Acanth. 5 or 10 per cent. | Tonia Solum. 1 or 2 per cent. |
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| 49. | | | | | | | | | |
| 50. | | | | | | | | | |

| Number. | Months in Philippines. | History of Dysentery. | History of Diarrhea. | Entamoeba Coli. | Cercomonas. | Ankylostomum Duodenale. | Ascaris Lumbricoides. | Trichocephalus Dispar. | Anguillula. |
|---------|------------------------|-----------------------|----------------------|-----------------|-------------|-------------------------|-----------------------|------------------------|-------------|
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| 2 | 7 | | | | | | | | |
| 3 | 8 | | | | | | | | |
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| 6 | 7 | | | | | | | | |
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| 12 | 8 | | | | + | | | | |
| 13 | 11 | | | | | | | | |
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| 23 | 7 | | | + | + | | | | |
| 24 | 9 | | | + | + | | | | |
| 25 | 30 | | | + | + | + | | | |
| 26 | 50 | | | + | + | | | | |
| 27 | 5 | | | + | + | | | | |
| 28 | 8 | | | + | + | | | | |
| 29 | 24 | | | + | + | | | | |
| 30 | 36 | | | + | + | + | | | |
| 31 | 18 | + | | + | + | | | + | |
| 32 | 18 | | | + | | | | | |
| 33 | 9 | | | + | | | | | |
| 34 | 9 | | | + | | | | | |
| 35 | 8 | | | + | + | | | | |
| 36 | 18 | | | + | | | | | |
| 37 | 21 | | | + | | | | | |
| 38 | 14 | | | + | | | | | |
| 39 | 14 | | | | | | | + | |
| 40 | 14 | | | | | | | | |
| 41 | 16 | | | | | | | | |
| 42 | 48 | | | | | + | | | |
| 43 | 8 | | | | | | | | |
| 44 | 6 | | | | | | | | |
| 45 | 57 | | | | | | | | |
| 46 | 20 | | | + | + | | | | |
| 47 | 10 | | | + | + | + | | | |
| 48 | 18 | | | | | | | | |
| 49 | 48 | | | | | | | | + |
| 50 | 48 | | | + | | | | | |
| Total | ... | ... | ... | 25 or 30 | 12 or 24 | 4 or 8 | 1 or 2 | 2 or 4 | 1 or 2 |

Nor can we say that perhaps this man would develop dysentery later, for, although but a single specimen stool was examined from the majority of these cases, all the men have been under observation for a period of nine months and none of them has developed dysentery.

Several of the men have been examined at intervals of several months to see if the *Entamoeba coli* persisted in the stool for any length of time. In Case 15 of the Americans and in Cases 13, 31 and 49 of the natives amebas were always found at each examination. These cases were selected for continuous observation, for the reason that the parasite was present in abundance and easily found when search was made. In this connection it may be remarked that Craig,⁵ in refuting the view of Musgrave and Clegg that individuals presenting *Entamoeba coli* in health have never been observed for a long enough time to be positive as to whether or not dysentery might result, states that he has observed such individuals for a period of six months and has found these parasites constantly present.

CONCLUSION.

The *Entamoeba coli* can not be considered as the cause of chronic dysentery, since it is found as a continuous infection in about 50 per cent. of all normal individuals in many localities. It follows that no diagnosis of amebic dysentery should be made by the microscopist unless he has found the *Entamoeba dysenteriae* as distinguished from the *Entamoeba coli*.

The *Ankylostomum duodenale* is the most important of the intestinal worms found. This parasite seems to be very widely distributed among the natives in this locality, although I have not seen a single case of typical ankylostomiasis during a period of observation lasting ten months. This is apparently because the parasites were not present in large numbers in any individual. In the majority of the natives examined two or three ankylostoma eggs could be found in a single slide after a careful examination, but they are present in much larger numbers when the parasites are abundant enough to produce anemia.

Generally the development of the embryo in the intestine does not progress beyond segmentation of the egg, but it is worth recording that in one specimen, that of Native 14, examined immediately after its passage, numerous free swimming ciliated rhabditiform embryos were seen. This stage is not usually attained until one or two days after leaving the intestine. Ova in various stages of development, including advanced periods of segmentation, and eggs containing moving embryos on the point of hatching were also found.

A point of interest in diagnosis may here be made. No case should be diagnosed as ankylostomiasis and so treated merely because a few of the eggs of this parasite are found. To do this seems to be a tendency of most practitioners who come from a region where the ankylostomum is unknown to a locality where it is frequent. It is safe to say that no case should be diagnosed as ankylostomiasis unless presenting the characteristic symptoms of this condition, combined with a large number of eggs in the stool. In this connection I would like to quote Manson,⁶ who says: "It is not in every instance in which the ankylostomum is present that consequences so serious ensue. There may be dozens of ankylostoma in the intestine without any appreciable anemia, or, indeed, symptoms of any description what-

ever. Grave symptoms are the exception. One must be careful, therefore, to avoid concluding that the ankylostomum is the cause of every pathologic condition with which it may chance to concur."

The other intestinal parasites may be dismissed briefly as of little or no pathologic significance. The one case of tapeworm occurred in native No. 14, who was a Filipino and not a Mohammedan, and therefore was not prevented by his religion from indulging in pork. He was entirely unaware of its presence, and had not missed a day from duty as the result of five parasites that he harbored.

This wide dissemination of intestinal parasites among the natives is, no doubt, facilitated by the universal custom of the Moros, who are Mohammedans, of defecating in the river, and the fact that, excepting the few Americans living here, it is also a universal custom to drink this river water unboiled. The number of natives infected with one or another of the parasites considered above as compared with the number of Americans infected probably furnishes some index of their relative liability to other water-born intestinal affections. Thus out of fifty natives examined there were only two in whom no parasite of any kind was found, while out of the same number of Americans twenty-one had no intestinal parasites, making the relative liability ten times as great among natives as among Americans. Or, considering the ratio of the total number of infections in the natives to the total number in the Americans, we have 428 to 45—nearly three to one. We may say, therefore, that the native soldier is between three and ten times more liable to water-born intestinal diseases than the American soldier. The native soldier in this locality uses plain river water, while the American is furnished distilled and boiled water, with occasional relapses to the unboiled water during "hikes" and in Chinese restaurants.

While, to be sure, there are other methods of disseminating intestinal diseases besides the drinking water, surely the advantages of boiled or distilled water are thus made sufficiently plain.

A CASE OF RIGHT SUBCLAVIAN ANEURISM— ATTEMPTED ENDOANEURISMORRHAPHY (MATAS).

CURE FOLLOWING SIMULTANEOUS LIGATION OF COMMON
CAROTID AND FIRST PORTION OF SUBCLAVIAN.*

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A study of the classical paper by Matas¹ describing his operation for the cure of aneurism impressed me profoundly. The operation aims at the obliteration of the sac with comparatively little disturbance of the circulation of the part. After securing preliminary hemostasis by means of the elastic bandage, the aneurism is opened in the general course of the affected vessel and all of its internal orifices are closed by suture. The sac itself is then obliterated by rows or layers of sutures. In the case of sacculated aneurisms this procedure may be carried out without interfering with the lumen of the vessel itself. In fusiform aneurisms, however, it may be necessary to obliterate the affected vessel together with the sac, although in some cases the vascular lumen may be

5. American Medicine, vol. ix, No. 23, June 10, 1905, p. 939.

6. "Tropical Diseases," "Ankylostomiasis."

* Read before the Section on Surgery of the New York Academy of Medicine.

1. Matas: Annals of Surg., February, 1902.

re-established by suturing around a rubber tube, the ends of which have been placed in the two main openings of the sac (afferent and efferent). The tube is to be removed before the final sutures have been tied. His discussion concerning the possibilities of the method in dealing with aneurisms of the larger visceral arterial trunks not situated favorably for the employment of the elastic constrictor was very suggestive, and I determined to give the method a trial should the opportunity ever present itself.

The present paper contains the report of a case in which Matas' operation was attempted and, although it records a failure, the lack of success should not be ascribed to the method, but rather to the fact that the steps were not fully carried out. The apparently complete recovery of my patient after the employment of the older operation of proximal ligation is gratifying, but it will not deter me from making another attempt to follow out the principles of Matas if the occasion should arise.

History.—The patient was a Russian, 40 years old, and a tailor by occupation. He had served as a soldier in the infantry of his country. For the past ten years he had suffered not infrequently from what he called rheumatism. He stated emphatically that he had never been infected with gonorrhea or syphilis, and careful physical examination strengthened my belief in his truthfulness. For about a year there had been a stabbing pain in the precordial region, which had been pretty persistent but not progressive. In December, 1904, the precordial pain began to radiate to the right shoulder and down the right arm. Soon after this a localized swelling was noted in the right supraclavicular region and there was a general enlargement of the right arm and hand, especially noticeable in the fingers. The patient also complained of a prickling sensation in the right hand. He entered one of my wards at Mount Sinai Hospital, Feb. 4, 1905.

Examination.—The man's general physical condition and nutrition were good. The superficial veins over the right supraclavicular and infraclavicular regions were markedly dilated, running over the top of the shoulder. Dullness and rather high-pitched respiration were noted in the right infraclavicular region. Above the middle of the right clavicle there was a hemispherical, strongly-pulsating tumor, a little smaller than half a lawn-tennis ball. The pulsation was distinctly expansile in character and was accompanied by a marked systolic thrill. With the stethoscope a short systolic and a short diastolic murmur could be heard. The overlying skin was not discolored, nor was it adherent to the mass. The clavicle, too, seemed to be uninvolved. The right shoulder and the entire arm and hand were slightly cyanotic and were covered with numerous minute bluish vessels. The right arm and hand were swollen so that they were considerably larger than the left, but there was little, if any, pitting on pressure. The fingers of the right hand were markedly clubbed (Fig. 1). Pulsation at the right radial was somewhat delayed and was much weaker than at the left. There was no evidence of arteriosclerosis. The temporals were visible but were not abnormally tortuous.

Operation.—Four days after admission, February 8, the patient was anesthetized with chloroform and an incision was made from the outer fourth of the clavicle to the sternoclavicular articulation and thence for four inches along the anterior border of the sternocleidomastoid muscle. The skin flap was dissected off, the insertion of the sternocleidomastoid was divided and the inner half of the clavicle was subperiosteally resected. A temporary ligature of chromicized catgut was thrown around the common carotid artery, but not tightened, and the vessel was then followed down to its origin from the innominate. By working carefully and keeping close to the vessel, no important nerve or vein was injured. Exposure of the innominate was excellent and ligation of this vessel would have been easy. A temporary ligature of chromicized gut was now thrown around the first portion of the sub-

clavian about one-half inch from its origin, and was held by a clamp at a sufficient tension to obliterate pulsation in the aneurism. Pressure over the aneurism caused easy and complete emptying, but on release of pressure there was a gradual refilling of the sac. From the rate of this reflux, which was still further diminished by tightening the carotid ligature, I believed that it might be possible to open the sac and secure the mouths of the tributary and branching vessels, so as to treat the case by Matas' method. I accordingly pierced the most prominent part of the tumor with the point of the scalpel and cut toward the shoulder for about three-quarters of an inch: To my disappointment there was a steady, non-pulsating fountain of blood, which spurted vertically for about four inches. The insertion of my finger for purposes of exploration at once checked the hemorrhage. The only opening in the sac which I could detect was a large one, which occupied a position toward the shoulder of the patient and admitted the tip of the finger. There were no coagula. The lining wall of the aneurism was everywhere smooth. There was no indication of a tributary opening toward its cardiac side. Evidence

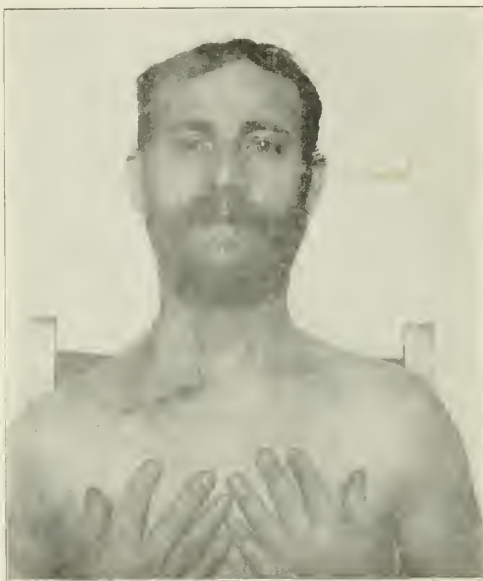


Fig. 1.—Photograph taken four weeks after operation. Note difference in size of the two hands, the line of the clavicle and the asymmetry due to the transplantation of the right sternocleidomastoid muscle. (This photograph was kindly made for me by Dr. *Branower of the House Staff of Mt. Sinai Hospital.)

of irregularity indicating atheromatous degeneration or calcification was wanting. The anatomy of the aneurism, thus shown to be of the sacculated variety, may be understood from the accompanying diagram (Fig. 2).

The patient's condition, which had been excellent, now gave some indication of shock, and I determined to risk nothing further, but at once sutured the vascular wound with catgut and a hemostatic needle. The first portion of the subclavian was then ligated with double No. 3 chromicized gut after the method of Ballance and Edmunds. The carotid was also permanently ligated. The divided sternomastoid muscle was attached to the remainder of the clavicle and the wound sutured with drainage. The usual dry gauze aseptic dressing was applied and the hand and arm were enveloped in cotton and bandages.

Pain following the operation was slight, but for several days there was considerable reaction of absorption and some tender-

ness over the aneurismal tumor. The temperature rose as high as 102 F., but gradually subsided and the patient's condition never gave reason for alarm. He was kept in bed for twenty-two days and then was allowed to be about in a wheeling chair. The circulation in the right upper extremity was never poor, but there was naturally some local cyanosis and the radial pulse remained absent up to the time of his discharge, March 22, 1905, when the patient was presented before the New York Surgical Society. The cyanosis had by that time almost disappeared. Pulsation in the temporal artery returned faintly thirty-eight days after the operation.

Postoperative History.—The patient was seen about three months after the operation and the cure of the aneurism seemed to be complete. The tumor had disappeared, except a small, hard mass, and there was no pulsation in the subclavian region nor in the radial. The right hand had remained larger than the left, but was apparently progressing toward the normal. On testing the circulation by pressing and releasing the fingernails it was noted that the sublingual blush returned almost, if not quite, as promptly as in the left hand. There was still slight disability of the shoulder from the resection of the clavicle, but the bone had in great part reformed.

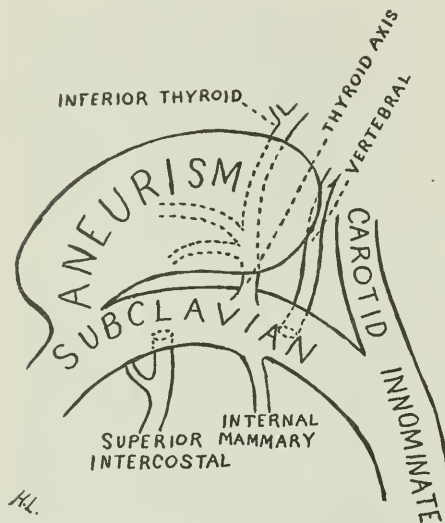


Fig. 2.—Diagram of the aneurism.

In reviewing this case a few of the more interesting points may be discussed. First, the cause of the trouble. In the total absence of anything pointing to general arterial disease we may perhaps conclude that the most probable causal factor may have been an injury to the healthy vessel by a direct blow, possibly with one of the angles of the rifle stock during military exercise. The aneurism, however, had not the anatomic characteristics of the traumatic variety.

Secondly, we may discuss the modern methods of treating these large aneurisms when they do not occur in an extremity. To be sure, the result here was so excellent that one might be forgiven for following the precedent another time, and yet to leave a large blood clot in a vessel to be taken care of by Nature is not the best surgical practice. Not only is there apt to be serious reaction during absorption, but there is a distinct liability to infection of the clot. The method of Antylus, which consists in proximal and distal ligation with incision of the aneurism and turning out clots and with final packing of the cavity is one which has always been

considered extremely dangerous. Proximal and distal ligation without opening the aneurism has been practiced and at times with success,² while extirpation (method of Purmann)³ has been well thought of by many surgeons. These procedures, however, cut off important blood supply and we must not forget the consequent danger of gangrene of the extremity.

If it were possible to deal with these cases after the method of Matas, which would cure the disease by obliterating the aneurism without interfering with the lumen of the vessel, there would be a distinct gain. Thus far, to my knowledge, this operation has been done only when the elastic tourniquet could be employed. My failure was due to the fact that a sufficient number of tributary vessels had not been cut off. Ligation of the thyroid axis, the internal mammary and even the vertebral would not have been difficult nor directly dangerous. A temporary ligature of the axillary would also probably have been required to keep the sac empty enough to permit suture of its orifice (Fig. 2). Matas, however, calls attention to the danger of dissecting out the aneurismal sac, since its walls are nourished, not by the contained blood, but by small vessels in the surrounding structures, and necrosis of the sac is apt to follow its clean dissection. Bearing this warning in mind, I did not wish to prejudice the vitality of the sac by a dissection sufficiently free to ligate all the vessels mentioned. Having explored the interior of the aneurism, I was aware that, in addition to what had already been done, possibly a temporary ligature around the axillary alone would control the current, but by this time a considerable quantity of blood had been lost and I felt the need of some haste. Were I called to operate in a similar case, I would certainly control the axillary before incising the aneurism.

I believe that the Matas method would have proved perfectly feasible in this instance, because I am sure that neither the thyroid axis, the internal mammary nor the vertebral was connected with the sac (Fig. 2) and that, therefore, a free dissection of the aneurism with the consequent danger of necrosis would not have been necessary. The collateral circulation into the axillary must have supplied the blood which filled the aneurism after the subclavian and carotid had been tied.

Whether or not the incision and digital (rubber glove) exploration of the interior of the sac with its subsequent suture had anything to do with the prompt clotting and the speed of cure is an interesting question.

The entire subject of aneurism of the vessels higher than the axillary is too large to be treated here. The literature of aneurism of the subclavian is rather voluminous. Dr. Eben Alexander, Jr., of the house staff of Mt. Sinai Hospital, kindly secured for me notes on eighty-nine cases, most of which were operated on before 1890. Many of these aneurisms were of the traumatic variety and the operative procedures were various. The mortality rate in the entire number from all causes was 52.8 per cent. It is, in reality, probably much higher, since failures are unfortunately less likely to be reported than successes. It seems, however, from the figures of Jacobsthal,³ in an article on the operative treatment of subclavian aneurisms, that there has been a distinct lowering of the mortality rate since 1890, probably due to improvement in technic. Thus, before 1890, 55 out of 75 cases succumbed, showing a mortality of 73 per

2. Dr. J. A. Blake presented a beautiful case of aneurism of the subclavian treated by this method. See report of meeting of New York Surgical Society, Nov. 22, 1905.

3. H. Jacobsthal: *Deut. Zelt. f. Chir.*, vol. LXVIII, p. 239.

cent., while since 1890 only 4 out of 25 cases were fatal, or 16 per cent. This author believes in extirpation as the proper operative procedure and reports 20.8 per cent. cures: 5 in 24.

Confining this discussion to those operations in which there has been simultaneous ligation of the subclavian or innominate and the common carotid arteries proximal to the aneurism, I have been able to find the reports of 13 or, including my own, 14 cases, with 7 deaths, or 50 per cent. mortality. Sheen⁴ has reported 12 of these cases, by various operators, including one of his own, in which there was simultaneous proximal ligation of the innominate and carotid. The thirteenth is an old case by Liston.⁵ One of Sheen's fatal cases, however, was a secondary operation, ligation having been performed for hemorrhage following extirpation of a subclavian aneurism—operator, B. G. A. Moynihan. Omitting this, we have a mortality in 13 cases of 46.1 per cent. The interesting cases collected by Wyeth⁶ illustrating the results of distal ligation for aneurisms near the heart do not concern us here.

The following are my conclusions and suggestions of technic for performing the Matas operation in sacculated aneurism of the subclavian artery:

From an examination of the literature one may readily see that the greatest danger following the ligation of the large arterial trunks is that of hemorrhage, either because of erosion of the vascular walls by the ligation, or on account of infection and ulceration into the lumen of the ligated vessel. Speaking on theoretical grounds, hemorrhage is all but impossible after endoaneurismorrhaphy (Matas). By performing this operation instead of ligation or even extirpation we shall probably greatly improve the statistics. It is simple, and, although best suited to the sacculated forms, may be perfectly feasible in certain cases of the fusiform variety. In a sacculated aneurism of the right subclavian, such as the one here reported, the technic suggested is the following: The incision should be along the anterior border of the sternocleidomastoid muscle from a point about at the level of the cricoid cartilage to the interclavicular notch, thence along the clavicle to its outer fourth. The sternocleidomastoid may then be divided at its insertion and the common carotid artery exposed and followed to its origin in order to find the subclavian. One should remember that anomalies are sometimes found here. Temporary ligatures should now be placed on the carotid and subclavian and the aneurism carefully observed, both as to pulsation and as to the refilling of the sac after it has been emptied by manipulation. If pulsation persists, or if there is a rapid refilling, a temporary ligation of the axillary is necessary. There should be no free dissection of the sac and no exposure of the smaller subclavian branches, such as the vertebral, thyroid axis, internal mammary or superior intercostal. The aneurism may now be opened by an incision small enough to be plugged by the exploring finger and the interior of the sac carefully examined to ascertain the number of large openings.

The character of the hemorrhage must be noted. It will probably not be severe and may be found to proceed from a single orifice of moderate size. There will probably not be pulsation. Endoaneurismorrhaphy may now be performed as described by Matas,¹ and on

its completion the ligatures may be removed, first that of the carotid, second the axillary, and third the subclavian. If everything is in order the wound may be closed without drainage.

In dealing with aneurism of the left subclavian the steps must be changed somewhat to suit the anatomy.

NOTE.—Soon after this paper was sent to THE JOURNAL for publication, at a meeting of the Southern Surgical and Gynecological Association, reported in THE JOURNAL A. M. A., Jan. 6, 1906, page 66, Dr. F. W. Parham, New Orleans, stated that he had cured a case of left subclavian aneurism by suture of one orifice within the sac after the failure of proximal ligation.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XIII.

ASTRINGENTS—Continued.

METALLIC ASTRINGENTS.

The insoluble salts of bismuth are admirably adapted for the protection of the intestinal mucosa from irritations of various kinds. While as much as thirty times the average single dose of bismuth salts has been given in the course of a day, by mouth, without any distinct evidence of untoward results, absorption and poisoning have followed the external use of bismuth salts as a dusting powder when used over a large surface.

Owing to the extremely poisonous nature of bismuth when absorbed, the soluble salts seem to us to be entirely superfluous, particularly as their solubility precludes the very object for which bismuth compounds are chiefly used—that is, for the mechanical coating of the surface with a protective layer of insoluble powder. It must be admitted, of course, that even the soluble salts of bismuth are astringent, but we have many safer astringents which are harmless that might well be used in their stead.

The activity of the nostrum-makers has resulted in placing on the market a number of preparations that are intended to combine the antiseptic properties of the benzene derivatives with the astringent properties of bismuth, but until we know more of the possibilities and the limitations of internal antiseptics it is preferable to use the simple astringents and to use our antiseptics separately.

Bismuth subnitrate, or subcarbonate, when triturated with water, should form a creamy mixture, and the physician should not permit the use of that which readily separates as a heavy powder, leaving a nearly clear stratum of liquid above it. The covering power of bismuth is in direct proportion to the creaminess of the mixture.¹

BISMUTHI SUBNITRATIS.—U. S.—An insoluble white powder, without odor or taste.

BISMUTHI SUBCARBONATIS.—U. S.—Closely resembles the subnitrate.

Average dose (of either salt): 0.5 gm. (8 grains).

BISMUTHI SUBSALICYLIS.—U. S.—This preparation closely resembles the subnitrate in physical properties and is intended to combine the antiseptic properties of the salicylic acid with the astringency of bismuth salts.

1. A typical prescription for gastric irritation, or ulcer is as follows:

| | | | |
|----|-----------------------------|---------|-----|
| R. | Bismuthi subnitratits | grs. ʒi | 10 |
| | Mucilaginis acaciae | ʒxv | 50 |
| | Aquae cinnamomi q. s. | ʒiij | 100 |

M. Sig.: Shake well and take one or two teaspoonfuls three or four times a day.

In cases in which marked irritability persists, the addition of 0.01 gm. (1/6 grain) of cocaine hydrochlorid to each dose, as a local anesthetic, may be advantageous, but we do not advise it as a routine procedure. For diarrhea one or two drops of the deodorized tincture of opium may be included for each dose, or, if preferred, 1 c.c. (15 minims) of paregoric, the official camphorated tincture of opium. For this purpose, it is usually preferable to give one dose every hour for three or four doses then every two to four hours as needed. Bismuth subcarbonate may be used instead of the subnitrate and tincture of kino, tincture of krameria or the compound tincture of gambir (catechu) may be added in the treatment of diarrhea.

4. Wm. Sheen: *Annals of Surg.*, July, 1905, p. 1; also November, 1905, p. 802.

5. Quoted by Wyeth in "Essays in Surgical Anatomy and Surgery," Wm. Wood, 1879.

6. Wyeth, J. A.: "Text-Book on Surgery," Appleton, 1888.

Average dose: 0.25 gm. (4 grains).

BISMUTHI SUBGALLAS.—U. S.—This substance was at one time widely advertised and is even now occasionally prescribed by its proprietary name, dermatol. It occurs as a bright yellow, insoluble, odorless and tasteless powder, which is mostly used externally as a substitute for iodoform.

Average dose: 0.25 gm. (4 grains).

Official Lead Salts.

Lead is of interest chiefly because of the chronic lead poisoning so often encountered.

The principal internal use of lead is in the form of the pill of the acetate, usually combined with opium, in the treatment of diarrhea. It has also been recommended for dysentery, but it is not nearly so useful in that disease. This preparation should not be given for any considerable length of time, lest it give rise to chronic lead poisoning. The solution of lead subacetate is unfit for internal administration, but is of value in painful swellings and local inflammations and burns. The well-known mixture of laudanum and lead water has long been popular as an external application, but any mucilaginous liquid could probably be used in place of the tincture of opium without detriment, since the astringency of the lead is the main factor, the local application of the opium alkaloids being entirely superfluous because they are not absorbed from the unbroken skin. The local use of lead water itself is so thoroughly well established that it scarcely requires further comment.²

PLUMBI ACETATIS.—U. S.—Acetate of lead, or sugar of lead, is said to have been known to Geber. It was described by Raymond Lully in the thirteenth century, but was not used in medicine until introduced by Goulard a little more than a century ago. It occurs in crystals or as a heavy white powder, having an acetic odor and a sweetish, astringent, afterward metallic taste.

Average dose: 0.05 gm. (1 grain).

LIQUOR PLUMBI SUBACETATIS.—U. S.—An aqueous solution containing not less than 25 per cent of lead subacetate.

LIQUOR PLUMBI SUBACETATIS DILUTUS.—U. S.—This contains about 1 per cent. of lead subacetate and is made by mixing 4 parts of the solution of lead subacetate with 96 parts of distilled water.

The Local Treatment of Mucous Membranes.

The local treatment of inflammation of the mucous membranes in the mouth, nose, throat, vagina and urethra, after thorough cleansing, preferably with a solution of hydrogen dioxide, may require mild astringents of either organic or inorganic substances, though, as previously stated, the use of the solution of hydrogen dioxide has greatly lessened this necessity. Alum has long enjoyed a particular reputation in the treatment of stomatitis, and has also been used as a gargle, but it is injurious to the teeth, and the necessary solution, made of 1 part of alum in 20 parts of water, is preferably applied directly to the affected parts by means of a camel's-hair pencil or a swab made of absorbent cotton. After gargling, the mouth should be rinsed with water. Alum is not given internally so often as it was formerly, it is irritating and possesses no advantages over other astringents. Because of this irritant action it is emetic, and, while not very dependable, may serve in an emergency if no surer emetic is at hand. Small ulcerations of the throat, after having been cleansed with an antiseptic solution, may be touched with a mixture of 1 part of ferric subsulphate and 2 parts of glycerin with a camel's-hair pencil.

A very large number of astringent gargles are in common use, but the following is a good representative of the class:

3. The following mixture will probably answer the purposes for which laudanum and lead water are commonly used:

| | | | |
|-------------------------|-------|---------|-----|
| R. Liq. plumbi subacet. | ..... | ℥. ixxv | 5 |
| Mucil. acac. | ..... | ℥. xlv | 3 |
| Aqua, q. s. ad. | ..... | ℥. iiii | 160 |

The solution of lead subacetate is diluted with 55 c.c. (16 grains) of water and the mucilage with 27 c.c. (8 drams) the two are then mixed. Fifteen c.c. (4 drams) of alcohol may be added to the water, but the amount of alcohol present in the mixture of laudanum and lead water is too small to be of any benefit.

| | | | |
|-----------------------------|-------|---------|-----|
| B. Tincture ferri chloridi. | ..... | m. d | 10 |
| Potassii chloratis | ..... | ℥. iiii | 12 |
| Aqua, q. s. | ..... | ℥. vi | 200 |

Those who object to the use of ferric chlorid may find the following preferable:

| | | | |
|-----------------------------|-------|-------|-----|
| B. Glyceriti acidi tannici. | ..... | 3v | 20 |
| Aqua, q. s. | ..... | ℥. vi | 200 |

ALUMEN.—U. S.—Alum should contain not less than 99.5 per cent. of pure aluminum and potassium sulphate. It occurs as colorless crystals or as a white powder; it is odorless, but has a sweetish and strongly astringent taste. Alum is soluble in 9 parts of water, but is insoluble in alcohol.

Average dose: 0.5 gm. (8 grains).

ALUMEN EXSICCATUM.—U. S.—Popularly known as dried alum, must contain not less than 99 per cent. of anhydrous aluminum and potassium sulphate. It is used for the same purposes as alum, and in addition is somewhat caustic when dusted, as a dry powder, on exuberant growths.

The Use of Zinc Salts.

Zinc sulphate and zinc phenolsulphonate may be considered together; they have a variety of applications, and it is only necessary to suggest the strength of the solutions that are to be used for various purposes.

For the eye they are generally used in the strength of from one-fourth to one-half of 1 per cent. in a solution of boric acid, to which camphor water may be added.

For the urethra strong solutions should not be used, one-half of 1 per cent. in water being sufficient. The popular combination of zinc sulphate and lead acetate, resulting in the insoluble lead sulphate and the very astringent zinc acetate, may possess some advantages over the more simple solution, but they are not very apparent.

Vaginal douches may be somewhat stronger and are frequently prescribed of from 1 to 2 per cent. strength.

As noted before, all the astringents may act as emetics if they are sufficiently irritant to the mucous membrane of the stomach and are not caustic. Zinc sulphate, however, deserves the preference among the astringents used as emetics. For this purpose it is usually given in doses of 1 or 2 gm. (15 to 30 grains) dissolved in a teacup of warm water.

The official salts of zinc that are of interest as astringents are:

ZINCI SULPHAS.—U. S.—Colorless crystals, without odor, having an astringent metallic taste. Zinc sulphate is soluble in less than 1 part of water, but is insoluble in alcohol.

Average dose: Emetic, 1 gm. (15 grains).

ZINCI PHENOLSULPHONATE.—U. S.—The zinc sulphocarbonate of previous editions of the Pharmacopeia has been referred to under antiseptics.

Average dose: 0.12 gm. (2 grains).

ZINCI ACETAS.—U. S.—This constitutes a widely used and deservedly popular astringent.

Average dose: 0.12 gm. (2 grains).

ZINCI OXIDUM.—U. S.—A white or yellowish-white powder, insoluble in either water or alcohol, it is largely used as a local application in dusting powders and in ointments, but is seldom given internally.

Average dose: 0.25 gm. (4 grains).

Copper and Iron Salts.

CUPRI SULPHAS.—U. S.—Blue stone or blue vitriol was known to the Greeks as Chalkanthos. Discordes described it as being a valuable astringent and, in large doses, emetic. It occurs as deep blue crystals that are devoid of odor, but have a nauseous, metallic taste. It is soluble in about 3 parts of water.

Average dose as an astringent: 0.01 gm. (10 mg. or 1/5 grain); as an emetic, 0.25 gm. (4 grains).

Of the numerous preparations of iron that have astringent properties we will mention but one, the chlorid, as representative of the whole class. This is official in several forms:

FERRI CHLORIDUM.—U. S.—This occurs in orange-yellow crystalline pieces, nearly odorless, but having a strongly styptic taste.

Average dose: 0.05 gm. (1 grain).

LIQUOR FERRI CHLORIDI.—U. S.—An aqueous solution of ferrie chlorid, containing about 29 per cent of the anhydrous salt.

Average dose: 0.1 c.c. (1½ minims).

This preparation is but little used, except for preparing

TINCTURA FERRI CHLORIDI.—U. S.—This is made by adding 35 parts of solution of ferrie chlorid to enough alcohol to make 100 c.c. The official tincture is directed to be prepared at least three months before being used.

Average dose: 0.5 c.c. (8 minims).

This preparation is injurious to the teeth; therefore it should be directed to be taken through a tube and the mouth rinsed with water or a very mild solution of an alkali, like limewater.

Use of Silver Nitrate.

Silver nitrate in the form of the sticks, lunar caustic, is mainly used as a caustic for touching warts of various kinds and for non-granulating wounds. A solution of silver nitrate is sometimes used as an application to the conjunctiva, followed at once by a solution of sodium chlorid, whereby a momentary action of the silver nitrate is obtained, the nitrate being instantly converted into the chlorid when the solution of sodium chlorid is applied.

Silver in combination with different proteids has been introduced under a variety of trade-marked or proprietary names and recommended as a non-irritant antiseptic, mainly for the treatment of gonorrhea. Crédé some years ago introduced a soluble form of metallic silver, for which certain manufacturers make the fabulous claim that it is an efficient disinfectant of blood and tissue. So long as septic diseases resist all treatment, it seems strange that reputable manufacturers will make such obvious misstatements.

The only official preparation of silver that is of direct interest in connection with astringents is

ARGENTI NITRAS.—U. S.—This salt is supposed to have been known to Geber, but was introduced into medicine by Angelus Sala during the seventeenth century. It is very soluble in water and occurs as colorless, transparent, tabular crystals, that darken on exposure to light in the presence of organic matter. It is odorless, but has a bitter, caustic and strongly metallic taste.

Average dose: 0.01 gm. (10 mg., 1/5 grain).

The internal use of silver nitrate as an astringent is necessarily empirical, as the actual composition that is formed when silver nitrate is brought in contact with organic matter must be complex and problematic. A favorite pill of the late Dr. William Pepper for chronic gastritis was the following. It is given without comment:

| | |
|---------------------|----|
| R. Argenti nitratis | \| 02 |
| Extracti hyoscyami | |
| Mannae, aa | |
|gr. 1/3 | |

To make one pill.

This was directed to be given three or four times a day, and the composition was occasionally varied by substituting powdered opium for the extract of hyoscyamus.

Vasoconstrictors.

In addition to the astringent drugs depending on tannin or the metallic salts, certain alkaloids possess a markedly astringent, or, more properly, vasoconstrictor effect when applied to mucous membranes. Of these, the most useful are hydrastinin, a derivative of hydrastin, from which it is obtained by oxidation, and the alkaloid of the suprarenal gland. Here we are compelled to admit that this latter alkaloid, which is now being marketed at the modest price of some \$800 per ounce, despite Abel's simple and inexpensive method of preparation, is superior to the official desiccated suprarenal gland. The application of a 1 to 1,000 solution of hydrastinin or a 1 to 5,000 solution of the suprarenal alkaloid, in 0.9 per cent. solution of sodium chlorid, to an inflamed conjunctiva or inflamed nasal mucous membrane often affords prompt relief. In view of the very great difference in cost without a corresponding difference in effect, the physician can well afford to use hydrastinin in preference to the more expensive alkaloid in such conditions.

The desiccated suprarenal gland may be macerated in water and the fluid filtered and used, but any of the preparations of

the alkaloid which appear under a variety of trade names will usually be preferred. Slight hemorrhages are also stopped by either of these means.

When the flow of blood is copious and hot water is ineffective, styptics are useful; they are not alone astringent, but also cause a sudden coagulation of the blood, and this plugs up the orifice. Large clots must be removed, as they prevent the immediate contact of the astringent or styptic and may conceal a hemorrhage occurring in cavities—the uterus, for instance—in which case the clot may fill the upper part of the vagina.

It is necessary to bear in mind the difference between the action of vasoconstrictors, like the alkaloid of the suprarenal gland, and the action of styptics, like tannin or the ferrie salts. With the former the action is transitory and the hemorrhage may recur as soon as the action of the drug has worn away, while styptics, when effective, form a plug in the normally extended blood vessel.

GLANDULE SUPRARENALES SICCÆ.—U. S.—Desiccated suprarenal glands are directed to be obtained from the sheep or ox, freed from fat, cleaned, dried and powdered. One part of desiccated suprarenal gland represents approximately 6 parts of fresh glands free from fat.

Average dose: 0.25 gm. (4 grains).

The alkaloid contained in the suprarenal glands has been variously designated as epinephrin by Abel, supranerin by Fürth and adrenalin by Takamine. The trade names that are now applied to the solutions of the same substance are legion, and it seems very unfortunate indeed that the committee on revision of the Pharmacopœia did not recognize the alkaloidal substance in an official way and give it an official title. The only effect to be expected from the internal administration of the gland or its alkaloid is the local constriction that is noticed when it is applied to the mucous membrane. The solution of the alkaloid is useful only for intramuscular or intravenous injection. When injected just beneath the skin it produces practically no effect, except a local vasoconstriction.

(To be continued.)

Clinical Notes

A CASE OF PRIMARY ARTERIAL THROMBOSIS OF THE EXTERNAL ILLIAC ARTERY, WITH SECONDARY EMBOLUS.*

M. THORNER, M.D.
INDIANAPOLIS.

Primary or autochthonous arterial thrombosis of the large vessels, other than the aorta with sequelæ, affords a sufficient incentive to a most careful analysis of each case from a clinic as well as from a histologic standpoint, as the gravity of the subsequent conditions is of paramount importance.

The occurrence of secondary emboli from thrombosis in arteries other than the aorta and pulmonary arteries gives the following case an especial significance. To Virchow is given the credit of first actually proving anatomically and clinically, as well as of having first recognized that not all intravascular and antemortem clots are formed at the place where they are found, but are the result of emboli. It is a well-known fact that embolus with secondary thrombosis plays a greater rôle in arterial occlusion than primary thrombi, yet the close relation of the latter to the former, as in this case, accentuates the necessity of such careful analysis in order to establish the dependence of the one on the other.

The pathologic findings in the following case place it in the category of primary arterial thromboses, and I

* Read before the Marion County Medical Society, Indianapolis, Ind.

have given *seriatim* the phases of the case from the point of clinical interest, and have endeavored to analyze them with reference to their influence in the production of the thrombus.

Patient.—Mrs. X., a patient of Dr. H. O. Pantzer,¹ was first seen March 10, 1905. She was a rather small woman, anemic (skin of a greenish hue), poorly nourished, 47 years old, though much older in appearance, and showed the lines of much suffering and wasting. Her only complaint now is that of repeated attacks during many years of colicky pains in the gall-bladder region, and lately she becomes jaundiced during the attacks.

Physical Examination.—The heart was not enlarged; its action was regular and sounds were normal. The radial artery was soft and easily compressible; temporals could be seen, but were faintly outlined and soft. The lungs were negative. In the abdomen, in the region of the gall bladder, a pear-shaped tender mass projected below the free border of the ribs. The liver dimensions otherwise were normal.

Operation and Result.—April 1, under chloroform, cholecystotomy was done, and many gallstones were removed. Convalescence was uneventful until April 9, when the patient had an attack of severe abdominal cramps in the epigastric and hypogastric regions and to the left of median line, accompanied by repeated vomiting. An enema was given, and this was followed by a discharge of a large amount of disintegrated blood and some fecal matter. Nothing was found in vagina or rectum to account for the bloody discharge. Twelve hours later there was a similar discharge of gases, fecal matter and blood. Pain gradually localized itself in the abdomen just below and to the left of umbilicus, where an indefinite tumefaction could be made out, with marked tenderness over same. Castor oil was given and free evacuation of bowels followed; the stools were normal. Pulse was 120; temperature, 101.4.

Further Course of Disease.—There was general and local improvement. Pulse and temperature were nearly normal. Early in the morning the patient complained of sharp pain and numbness in the left ankle and foot extending to knee, but after a few hours this entirely disappeared, and nothing unusual was observed in the foot. Twenty-four hours later the patient experienced a sudden, excruciating pain in the left foot extending to the knee. When seen six hours later the foot was pale, cold, and extremely tender to slightest touch. The veins were apparently empty in this extremity; there was no pulsation in the anterior tibial artery and but very slight pulsation in the left popliteal. The left femoral pulsated, but the tension was much less than in the right. By evening, areas of purple appeared over the distribution of dorsalis pedis artery. Physical examination of the heart revealed normal sounds, no displacement; there was no enlargement and the action was regular and forcible.

April 22: The patient's general condition was retrograding, and in her poor state amputation of the limb promised little. She was removed by her relatives to her home out of the city.

May 3: The patient was visited in her home. Her general condition was better than when seen last. The tongue was dry and coated; the skin and sclera were yellowish. Temperature ranged between 99 and 102 in morning and went to 103 in afternoon. Since arriving home the affected limb has been immersed in moist and dry hot applications. The gangrene had continued to spread, and the entire foot and leg were dry and black. An indefinite mass could still be made out on deep palpation of the left side of the abdomen; it was slightly tender. No bruit could be heard over this on auscultation. Bile still discharged from the now fistulous wound. No pulsation could be felt in the popliteal or femoral arteries. Over the latter's course a hard, thick cord could be made out.

Amputation and Result.—It was decided to amputate the limb, and this I did, with the kind assistance of Dr. Pantzer and the physician in daily attendance. Amputation was done at the beginning of the middle third. On cutting through the femoral vessels, a mixed thrombus was found to occupy the

artery and a red thrombus the vein. There was some bleeding from the arteries in the anterior part of the limb, but active spurting from those in the posterior part on removal of the constrictor. The deeper circulation was evidently maintained by the crucial anastomosis. The skin circulation was not so good anteriorly as posteriorly. There was bleeding from the nutrient artery of the femur. The flaps were united, drainage inserted to inner angle, and wound dressed. The patient recovered without shock.

May 26: Margins of stump after the first week began to show malnutrition, and shortly thereafter necrosis of the flaps occurred, with separation of the same. The general condition gradually retrograded. Temperature ranged between 99 and 101, and pulse from 90 to 130. A marked marasmic state supervened, and the patient died.

Autopsy.—After much persuasion, an incomplete autopsy was granted by the relatives, the result of which follows:

The brachial artery in the left arm had been injected with a formalin solution. There was pronounced rigor mortis. The stump of the amputated limb was powdered with some drying material. The flaps showed marginal necrosis; the bone stump was dry. A small amount of clear fluid was in the pericardium. The heart was of normal size, the valves were glistening and white, and there was no evidence of endocarditis. The ventricles and right auricle contained a small amount of blood; no thrombi or ulcerations were found on the valves or on any part of the endocardium. The first part of the aorta was examined; the valves of this, as well as of the pulmonary artery, and the vessel walls showed no changes.

Abdomen: There was a very slight amount of clear fluid in the peritoneal cavity. The omentum was found intimately adherent to the anterior and lateral abdominal walls in the left iliac region and to a coil of small intestines, which it almost completely hooded in. This coil of small intestines, about eight inches in length, was situated below and to the left of the umbilicus. It was acutely kinked on itself, much distended, the contiguous margins of the kink closely adherent, and the whole coil adherent by not marked adhesions to the lateral and posterior abdominal walls. At points near the beginning of the upper limb of the kink and near the end of the lower limb were two apposed necrotic areas, the size of a 10-cent piece, and opposite the mesenteric attachment, which had involved nearly the whole thickness of the intestinal walls. Coincidentally, this entire mass was directly over the left common iliac artery.

Stomach: This viscus was contracted and small, and presented no evidence of inflammatory thickening or tumor.

Liver: This organ was small, anemic, and on section apparently the seat of fatty changes.

Spleen and Pancreas: This was somewhat enlarged and hard, and the pulp was deeply congested.

The pancreas was not enlarged, but was anemic. On section nothing abnormal was noted. The splenic vein was not thrombosed, and the retroperitoneal glands not enlarged.

Left kidney: The capsule was somewhat thickened and in places adherent. On section the tissue was pale; the striæ were well shown.

Arteries: The left common iliac artery contained a thrombus up to about three-quarters of an inch above its bifurcation into the internal and external iliacs. The left common iliac and external iliac were dissected out and removed for examination to a point about an inch above Poupart's ligament. The femoral artery and vein were also dissected out and removed to one inch below Poupart's ligament. The popliteal artery and vein were dissected out and removed from the amputated limb, which until now had been kept in a strong formalin solution. The dorsalis pedis artery, with the tissue around, was in part excised, its lumen was not obstructed and contained but a thin clot.

Histopathology.—The kidney showed marked parenchymatous degeneration, affecting chiefly the convoluted tubules. The glomeruli, for the most part, were considerably contracted; there was congestion of the cortical blood vessels, but no interstitial deposits. The whole aspect was that of a parenchymatous degeneration of considerable degree. The arteries of the kidney show no arteriosclerosis whatever. The

1. This case occurred in the service of Dr. H. O. Pantzer, of Indianapolis, to whom I am indebted for the privilege of reporting it.

liver showed moderate fatty degeneration, without special reference either to the central or peripheral parts of the lobule. The pancreas was negative.

Section of arteries: Commencing about one-half of an inch from the upper end of the common iliac section (really the lower half-inch of the artery), the intima was very much thickened (due to proliferation of the subendothelial layer) and projected into the lumen for about 1/5 the diameter of the vessel. This was a node in form, as a very short distance below and above this the intima was but slightly thickened. The media showed a granular degeneration opposite the intimal thickening and was thinned out here. The adventitia showed no thickening or infiltration. The vasa vasorum showed no changes. The contained thrombus was, for the most part, of the mixed type, varying with red. Examining the thrombus from above downward, the first evidence of organization was seen at the beginning of the external iliac artery. This organization sprang from the intima on the same side as the intimal node above, and consisted of a stroma of fairly old connective tissue, and projected into the lumen of the vessel for about one-third its diameter. This was the only point in all the sections of the arteries where there was organization, and this was most probably the oldest part of the thrombus. The intima in the different sections was very slightly thickened throughout. The media nowhere else, except in the part mentioned, showed any degenerative changes or round-celled infiltration. The vasa vasorum showed no obliterative endarteritis in any part of the sections. The internal iliac (a small section examined), besides containing a mixed thrombus, showed no structural changes. The popliteal and femoral veins, in the sections examined, contained a red thrombus for the most part; some of the sections, however, showed mixed thrombi. That part of the femoral vein just below Poupart's ligament showed beginning organization; this was the only point in the veins where organization was found. Bacterial staining was made only of the thrombus contained in the popliteal artery, but no bacteria were found. This was the only part of the thrombus examined for bacteria, first to establish the presence or absence of a bacterial embolus, and, second, to determine if that part of the thrombosed vessel above the amputation, exposed to contamination as it was, would offer no proof as to whether or not the primary thrombus contained bacteria.

Remarks.—The study of the physical signs and the histopathology in this case—the soft radials and temporals, and the absence of degenerative or other changes in the walls of the other large vessels examined—would point to the primary changes found in the common iliac as a local process.

DISCUSSION OF THIS CONDITION.

In determining the etiologic factors in the production of this localized arteriosclerosis, there were conditions which do not harmonize with the usual course in the arteries after syphilis or senility—there were no calcification or calcification, no cellular infiltration, nor were the vasa vasorum opposite the intimal thickening (or at any other point) in any but a normal condition. The change seemed to have been primarily in the media, in the form of a granular degeneration; the media was thinned out at this point and compensatory hypertrophy of the intima followed. There was entire absence of specific history or symptoms of alcohol or gouty manifestations, yet, in the presence of a parenchymatous degeneration in the kidney and fatty changes in the liver, there must have been some other toxic influence present, probably from the gangrenous intestine, and the intestinal disturbance following.

It is evident, also, from the microscopic findings in the artery, that the thrombus formation began not at the point of greatest intimal thickening, but at a point about half an inch below. This being the oldest part of the thrombus, it was from here, most probably, that the embolus was cast off, and from this a secondary ascend-

ing thrombus resulted. From the sequence of events the embolus most probably lodged in the anterior tibial artery.

The compression of the common iliac by the mass of intestines bound down above it lent its influence in affecting the blood current at this point, and the formation of slight eddies beyond the projection of the intima would seem a most natural site for thrombus formation, and at this point, indeed, was found the oldest part of the thrombus.

We have here, therefore, the cardinal factors in thrombus formation, namely: disturbance in circulation; local lesion in the vessel wall; changes in the chemistry of the blood—a marasmic state which may have been primary or secondary to the toxemia from the intestines.

The diagnosis of the embolus in this instance was typical of such a state. The first embolic impact, though marked, was not intense. Then followed a subsidence of the symptoms after a few hours, and twenty-four hours later there followed what I believe to have been a second embolus, when the symptoms were sudden and very intense.

The occurrence of a "reflex chill" at the time of embolic impact was absent in this case. Dr. W. H. Welch states that chills associated in such cases are due usually to infection rather than to vascular plugging.

The temperature about the time of the embolism was 99+, rising to 100+ (rectum) in the evening. The patient had a slight elevation of temperature before this attack, and the amount of temperature due to the embolism or thrombosis can not be stated. Dr. Welch states that, independently of the intervention of pathogenic micro-organisms, arterial embolism may be accompanied by temperature. Gangolphe and Courmont attribute the fever sometimes observed after arterial occlusion to the absorption of pyrogenetic substances which they find in tissues undergoing necrobiosis.

The prognosis in cases such as this one must necessarily be grave. I can not see how any assistance can be rendered in saving the limb or even the life in a case like the one I report, unless cicatrization and healing first take place in the original site of the thrombus, from which point secondary emboli may continually be displaced, and from which, in turn, other thrombi are formed, even if the primary thrombus itself does not become an occluding thrombus.

TREATMENT.

From the pathologic findings in this case it would seem that, barring the infectious emboli, conservatism, namely, awaiting definite developments in the part, is the safest manner of handling such cases. At first palliative measures should be used for the encouragement of collateral circulation, provided, of course, that from the anatomic conditions this can be accomplished, and if the process is not rapid. Routine treatment in general consists of elevating slightly the affected limb and enveloping it in warm compresses or solutions. In the palliative treatment I would suggest, further, that the affected limb should be treated most aseptically. The limb should be shaved and the part thoroughly cleansed and kept continuously under the influence of mild antiseptics, preferably dry, so that in case of local gangrene the danger of sepsis is largely avoided and more time allowed for the recovery of the part or for a line of demarcation to form. Beginning with the onset of the embolism or other evidence of thrombosis it would seem

that the iodine preparations should be given to aid in the absorption of the new-formed tissue, as well as to treat a possible specific basis for the arteriosclerosis. If the resulting gangrene is so extensive that amputation is necessary, this, of course, must be done, but well up in healthy tissue, where this is possible.

224 North Meridian Street.

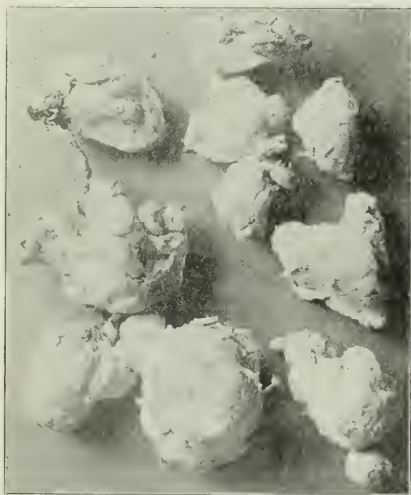
RETENTION OF URINE CAUSED BY ENLARGED PROSTATE AND RELIEVED BY PROSTATECTOMY.*

GEORGE W. KING, M.D.

HELENA, MONT.

Patient's History.—Twelve years ago the patient had an attack of retention while out prospecting and had to travel a distance of fifty miles to reach medical aid. He was easily relieved by the use of a catheter and instructed in the care and use of the instrument. By its aid he was enabled to go on with comparative comfort until a recent date.

For many years he has resided alone in a cabin situated near an infrequently traveled road, and when the present attack of retention came on there was no available way of securing assistance. He had been a sailor at one period of his career and having a flag in his possession he naturally conceived the idea of floating it at half mast as a distress signal. After some days, fortunately, it attracted the attention of a passerby who went into the cabin, and, discovering his condition, took him to the nearest physician where an attempt to pass a catheter was made without success.



View of the prostate removed; weight, 5½ ounces.

Hospital History.—He was immediately sent to the hospital and came under my care. He had a history of five days' retention and there were already symptoms of uremia. Obviously the first thing to do was to relieve the retention by the usual method if possible. The prostatic obstruction was found to be so great that no form of soft catheter could be passed. A metallic instrument with long curve was made to enter the bladder without serious difficulty and a considerable quantity of bloody urine evacuated. The amount taken away did not exceed one-third of the contents of the bladder. This was amply sufficient to afford temporary relief, which was the most urgent indication at that time. By this plan too sudden reduction

of pressure on the bladder, ureters and kidneys was avoided and time was gained for further investigation. The introduction of the instrument caused so much pain it was used but twice in the twenty-four hours instead of at shorter intervals. This treatment was continued during the three days preceding the operation. The obstruction being seated so high up in the pelvis, it was a debatable question which route to choose. The perineal was finally decided to be the safer in this instance and was therefore given the preference.

Operation.—The operation was begun with the expectation that it would be difficult and so it proved to be. The growth could not be brought down by the sound or by any of the tractors designed for the purpose; hence the work had to be done almost entirely by the fingers, guided by the sense of touch, to define the boundaries of the diseased tissue. By patience and perseverance the mass, as seen in the accompanying illustration, was removed and free drainage established. The patient withstood the operation remarkably well for one of his years; there was no shock, and no elevation of temperature after the reactionary stage had passed. He was allowed to get up when he pleased. In fact, he did get out of bed on the day following the operation, but of course did not move about much for a day or two.

His convalescence has been exceptionally rapid, a small amount of urine came through the natural passage on the sixth day, which is not the rule. With a complete healing of the wound I believe his troubles will be over.

ICE-BAGS AND WHEN TO USE THEM.

P. A. AURNES, M.D.

MINNEAPOLIS, MINN.

The reluctance with which the laity used to submit to the application of ice-bags or to the use of cold water in disease is fast disappearing. Wholesome and general awakening to the full appreciation of the great remedial power possessed in the scientific application of simple means like water and its different forms, vapor or ice (hydrotherapy, thermotherapy or frigerotherapy) instead of relying on antipyretic and analgesic drugs, when fighting systemic or localized inflammations, is evidence that the teaching of men like Esmarch, Winternitz, Schlikoff and others is gaining ground.

There is, however, still field for educational work, not alone among the laity, but also among physicians, as there are many who still keep on "crossing the river in going after water," as the saying is.

Many medical men know the value of cold applications as well as the danger of antipyretic and analgesic drugs, yet they lack the moral courage to carry theory into practice from fear of being discharged by an ignorant patient for applying anything so "dangerously" cold as an ice-bag. Furthermore, some men relegate themselves to the rear guard of the profession by condemning at all times the use of hydro-therapeutic measures and cold applications in any form, and prefer to stick to the dirty, antiquated flaxseed poultice or to some proprietary "mud" preparation with its cure-all qualities.

Scientifically considered, heat and cold differ only in degrees, but let it be understood that, although the physiologic effect during their application within certain limits may be identical, there is a distinct difference in the results obtained, when they are applied to parts, where a pathologic process is in evidence.

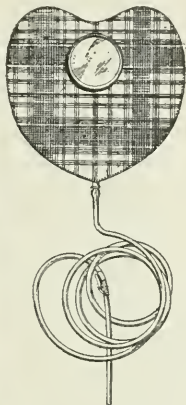
Thus a warm poultice application tends to relieve pain, but it also tends to favor the formation of bacterial growth—the formation of pus—when pyogenic germs happen to be the cause of the inflammation. On the other hand, if an ice-bag be applied to such a region it will not alone relieve congestion and pain, and that

* Presented at a meeting of the Lewis and Clark County Medical Society.

more effectively than any bearable hot application ever can do, but, what is usually of greater importance, it tends to prevent the formation of pus, it will cool the region involved to such an extent, even if the trouble be deep-seated, as proven by Winternitz, Esmarch and others, that the growth of bacteria is retarded, if not entirely checked.

This relation of bacterial invasion and growth to the majority of acute inflammations is an established fact, and it is further true that such growth is retarded or entirely checked, and that the cardinal symptoms of inflammation, redness, heat, pain and swelling are effectually relieved and even the fever of a systemic infection materially reduced by the proper application of ice-bags. It is the opposite of good treatment to apply warm applications to acutely-inflamed regions, especially when pus-producing germs are suspected to be at work, unless the purpose be to aid in the production of pus, which seldom is the case and never should be, if treatment is started early.

Heat, particularly moist heat, has its place and is of considerable utility when it is a question of aiding Nature to remove inflammatory products and when the acute process is at an end, as, for instance, after crisis



in lobar pneumonia or for the elimination of serous exudates. Cold, on the other hand, is indicated in the majority of acute ailments, but it should be remembered that the selection of the form of cold to apply is of the greatest importance in the physiologic effect produced. A cloth wrung out of cold water and applied to an inflamed area produces at first a certain amount of nervous shock, absorbs heat, contracts the blood vessels and thereby lessens congestion. Removing this cloth, wringing it out from cold water and again replacing it creates a distinct irritation or stimulation of the parts, a process of reaction, an increased blood supply and a dermic stimulation that is frequently undesirable, particularly when the inflammation is caused by bacterial invasion. In all such cases the object should be to apply a form of cold in which the cooling agent is of constant and lasting degree and in which the degree of cold is one that will help to retard or to check bacterial growth, to relieve congestion and pain and at the same time do no injury to the vitality of the parts covered. Uniform currents of cold water, cold air, the use of liquid air, freezing mixtures, etc., have all been tried, but no form of cold is more simple and better suited for the purpose than melting ice, when properly applied.

In order to apply melting ice properly the ice-bag should be one that is provided with a drainage tube, so that the water from the melted ice is constantly drained off, and in which the degree of cold used is constant, thereby utilizing the enormous amount of heat required to liquefy ice, the difference between melting ice and ice-cold water as a heat-absorbing agent being as 80 to 1, measured by calorimeter in centigrade degrees. The importance of drainage in ice-bags, therefore, is evident. Without such provision ice-bags, soon after their application, become more or less filled with water and air, forming a rolling body hard to keep in place, which gives only the effect of cold water—so greatly inferior to that of melting ice. A drain ice-bag filled with crushed ice to such an extent only that its weight can cause no obstruction to the circulation of the parts to be covered is the ideal form of ice application. Such an ice-bag, when water and air are pressed out at the time of applying it, remains collapsed and holds the ice between the walls of the bag by the outer pressure of the air and, furthermore, retains any shape given it till the ice is melted. Thus it can readily be made to fit the head, neck, chest, abdomen or a joint.

Of diseases in which the application of ice-bags is of great importance as an auxiliary remedy the following may be mentioned: Acute meningitis, acute mastoid disease, acute tonsillitis, lobar pneumonia (with marked success), acute pleurisy, acute endocarditis and myocarditis, acute hepatitis, acute gastritis, acute rheumatic arthritis and acute synovitis, acute enterocolitis, acute peritonitis and acute pelvic diseases, acute cystitis, acute appendicitis (of great benefit), hemoptysis, hematuria, typhoid fever (to head and abdomen), scarlet fever (to head), erysipelas (to region involved), neuralgia, headache, etc.

My drain ice-bag and specially designed pneumonia bag now in use at many hospitals are shown in the accompanying illustrations.

SCHISTOSOMA HEMATOBIIUM IN THE CANAL ZONE.

M. EARLE HIGGINS, M.D.

ANCON, PANAMA.

The following cases of infection, with the blood fluke, *Schistosoma hematobium* (bilharzia), occurring in routine stool examinations, would indicate that this parasite is not an uncommon one in the Canal Zone, particularly among the negro laborers from Martinique:

CASE 1.—Martinique negro; male. On Isthmus one month (Culebra). Admitted Dec. 2, 1905, with lobar pneumonia.

Stool: Ova of bilharzia and uncinaria.

Blood: On admission this was negative for malaria; nine days after crisis leucocytes were 9,500; hemoglobin, 40 per cent.

Urine: During the height of fever there was a slight trace of albumin, with a few hyaline and granular casts. Albumin and casts disappeared before discharge. Sedimented specimens showed no blood or ova.

There were no bladder symptoms.

CASE 2.—Martinique negro; male. On Isthmus one and one-half months (Panama). Admitted Dec. 10, 1905, with malaria and bronchitis.

Stool: Ova of bilharzia and uncinaria; *Tricomonas intestinalis*.

Urine: Negative; sedimented specimens.

No bladder symptoms.

Blood: Ameboid rings; estivo-autumnal parasites; leucocytes, 4,200; hemoglobin, 35 per cent.

CASE 3.—Martinique negro; male. On Isthmus three months (Paraiso). Admitted Dec. 12, 1905, with anemia.

Stool: Ova of bilharzia and uncinaria; embryos *Strongyloides stercoralis*; a few red blood cells.

Blood: Leucocytes, 9,300; hemoglobin, 77 per cent.

Urine: Negative. Centrifugalized specimen showed no ova or blood.

No bladder symptoms.

CASE 4.—Martinique negro; male. On Isthmus two months (Paraiso). Admitted Dec. 22, 1905, with anemia.

Stool: Ova of bilharzia, uncinaria, *Trichocephalis dispar* and *Ascaris lumbricoides*.

Blood: Leucocytes, 5,800; hemoglobin, 57 per cent.

Urine: Negative.

No bladder symptoms.

An interesting feature of these cases is that they were all benign; none of the patients apparently suffered any inconvenience from the presence of the parasites. Ova of the *Uncinaria americana* or *Anchylostoma duodenale* (both parasites occur here) were associated with every case, and probably produced the concomitant anemia. None of the patients presented any bladder symptoms, and no ova or blood was observed in the urine (microscopic examination of sedimented specimens in three cases and of centrifugized specimen in one case).

A careful examination of the rectum of each patient showed no appreciable ulceration or polypoid growths.

The ova corresponded to the usual descriptions, and in every instance the characteristic spine was laterally situated—a point which Manson suggests may indicate a distinct variety of the parasite, with oviposition only in the bowel. In Cases 2 and 4 the ova were fairly numerous, two or three occurring in each cover-slip preparation. In the other two cases they were less frequent—one ovum to two or three preparations.

Brem, who first observed the ova at this hospital, saw the following three cases:

CASE 5.—Martinique negro. On Isthmus two months. Past history of painful urination and hematuria. While in the hospital he had a cystitis with retention.

Stool: Ova bilharzia and uncinaria; blood, pus and mucus.

Urine: Sedimented specimen showed numerous pus cells, but no ova or blood.

Defecation was painful.

CASE 6.—Martinique negro.

Stool: Ova of bilharzia and uncinaria; no blood.

Urine: Sedimented specimen, no ova or blood.

CASE 7.—Venezuelan.

Stool: Ova of bilharzia and uncinaria; no blood; large unknown ciliated monad.

No bladder symptoms.

Urine: Negative for albumin; no microscopic examination.

While six of the seven cases were in negroes, who had recently come to the Isthmus from Martinique, the occurrence of the parasites in the Venezuelan shows that the infection is not confined entirely to the former country.

A NEW AND PHYSIOLOGIC EXPLANATION OF A COMMON PSYCHOLOGIC PHENOMENON.

F. PARK LEWIS, M.D.

BUFFALO, N. Y.

On first viewing an unfamiliar scene many people have, doubtless, experienced the curious sensation of having seen it before. This may have been obviously impossible. It may have been in a part of the world visited for the first time and yet there is a feeling so haunting in some instances as to be distressing—that it is all a repetition of something that has occurred in the indefinite past.

This is a phenomenon so common that various theories have been offered in explanation. The most commonly accepted is that of the psychologist, who tells us that at the instant of the

first glance the mind is pre-occupied and that a space of time, which may be infinitely minute and imperceptible, elapses before the intelligence can grasp the meaning of the sensual impression and interpret it into a cognizable fact. In the realm of the subconscious there is no measure of time—as on the limitless ocean or in infinite space, there is no estimate of distance. One mental impression bears the relation to another mental impression which is not consensual with it, as being merely before or after, but how long, before or after, the mind is incapable of determining. The conscious sensation conveyed to the intelligence is merely that at some former indefinite period, which in point of fact is an infinitely small space of time, although it may seem years away, the same mental picture had been presented as that which is now obviously evident. Almost coincident, then, with the view is the impression of a former view, and as they are not perfectly blended the one is associated with the memory of the other. That we have no estimate of time in our subconscious state is shown in dreams. Here we seem to pass through years in time that is measured by seconds. The well-known illustration will be recalled of a man who dreamed that he had enlisted in the British Army—was sent to India—served through many experiences—deserted—was recaptured—tried by court-martial—sentenced—led out for execution—placed before the detailed squad and a volley fired. He had been asleep less than a moment and the same noise which had aroused him had excited the long and involved dream.

Recognizing the fact that the conscious intelligence is unable to form any judgment as to the length of time that intervenes between two sensual impressions that follow in quick succession, a more logical explanation than the accepted one can be given of this not uncommon phenomenon.

In order that a clear and definite picture of that which we see may be conveyed to the brain, the two retinal images must be blended at the cerebral visual centers as the two views of a single scene are blended by a stereoscope. In order to have an efficient working instrument, the stereoscopic lenses must be focused alike; and to have a binocular blending of images in the more delicate focal adjustments which are governed by nervous action and muscular effort the eyes must be alike.

According to the experiments of Sulzer, of Paris, based on the discoveries of experimental physiology, the accommodative act in the normal human eye is accomplished in about 2/100 of a second. In the hyperopic or astigmatic eye, in which greater muscular effort is required to focus the visual rays on the retina, manifestly the accommodative act would be produced less quickly. In cases in which the two eyes are definitely unlike the focal acts are not coincident, and it may easily take 4/100 of a second, or twice the length of time that is required by the more nearly normal eye for the less perfect eye to define the retinal picture and convey its impression to the cortical sight center. An interval of 2/100 of a second would thus intervene between the times that the same picture was focused on the two retinae and received by the brain, an interval too short to be recognized by the individual but long enough to give two distinct impressions to the mind with a vague, an indeterminate, an immeasurable space of time between.

It is very probable that auditory differences of a like character may sometimes exist, but even when this does not occur, when, owing to refractive differences in the eyes, the faculty of concomitantly blending sensual impressions into intellectual conceptions has been lost, the habit of synecopating impression (if the term might be employed in this connection) will have obtained, and the brain will receive a double impression, whether the images are of visual or auditory character.

That this explanation is a correct one finds its verification in the fact that those to whom this phenomenon is of common occurrence find that it disappears when focal differences are corrected by proper glasses, permitting thereby concomitant action on the part of the ciliary muscles of both eyes.

It will be seen, too, that refractive differences, when marked, and in those of especially unstable nervous dispositions, may cause a mental confusion which is also relieved by the visual correction. Such a case, found in a state hospital for the insane, in my clinic, was cured by a correction of the refractive and muscular inequalities.

As this is a new as well as a rational and physiologic explanation of a common phenomenon, and one easily submitted to a demonstrative test, I will be indebted for any verifications with which I may be favored in which this sense of double impression disappears after a refractive correction. I will be glad, too, to receive a copy of the prescription showing the refractive differences in the eyes.

45+ Franklin Street.

THE DIRECT READING OF ACIDITIES OF GASTRIC CONTENTS.*

GEORGE WILTON MOOREHOUSE, M.L., M.D.

CLEVELAND, OHIO.

In the quantitative determination of the acidity of gastric contents a decinormal solution of sodic hydrate is usually employed. Each cubic centimeter neutralizes an acidity equivalent to .00365 gm. of hydrochloric acid. Six cubic centimeters is ordinarily considered an average amount to neutralize the total acidity of 10 cubic centimeters of normal contents. The acidity of gastric contents is most commonly expressed by multiplying by 10 the total number of cubic centimeters of N/10 NaOH required to neutralize 10 cubic centimeters of gastric contents. A normal total acidity is, therefore, about 60. The solution of sodic hydrate, however, is not permanent; should it be accurate when received from the chemist it will not be accurate after a few days, and the variations may be considerable to one using it infrequently.

To minimize the difficulties imposed by constant change in the concentration of sodic hydrate solutions some workers determine at frequent intervals the value of their solutions of alkali, and express the acidity of gastric contents in grams per hundred or per thousand. This involves titration and computation as frequently as necessary to determine the value of the sodic hydrate solution; titration and computation to express the result in grams per hundred or per thousand, and a further computation before it is possible to express the result in the terms which are more generally understood and more easily remembered. It is probable, however, that a considerable number of those who express the results in the simpler form replace their solutions at whatever intervals they consider necessary to insure sufficient accuracy, and always consider the value of the solution to be .00365. Such renewal of solutions is an unnecessary expense, since the titration of the alkaline solution to determine its value is hardly more troublesome than sending the bottle to the chemist for standardization would be.

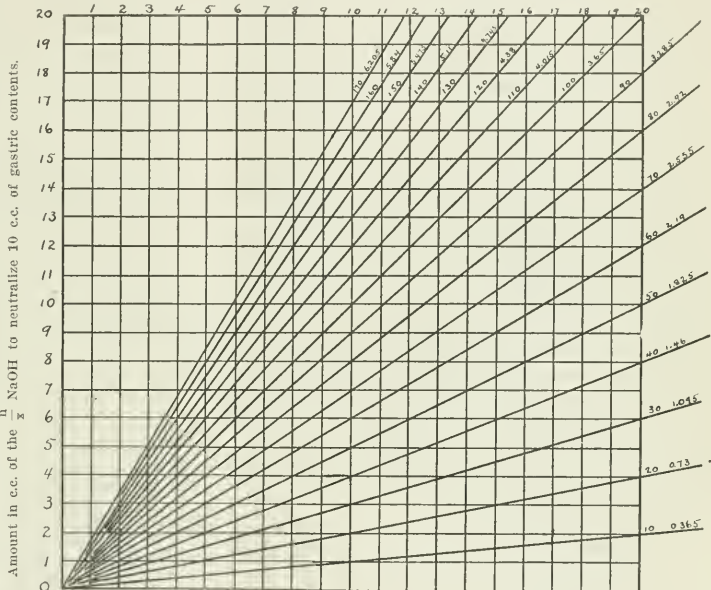
The use of the accompanying diagram makes accurately decinormal solutions of sodic hydrate and computations unnecessary in quantitative examinations of the acidity of gastric contents. With sufficient frequency, about once a month, the number of cubic centimeters of alkaline solution to neutralize 10 cubic centimeters of a true decinormal acid solution should be determined and recorded. In use with gastric contents, it is necessary only to determine the amount of alkaline solution in cubic centimeters to neutralize, first, the free

hydrochloric acid of 10 cubic centimeters of the gastric contents, and, second, its total acidity. With these facts determined, the acidity of the gastric contents may be read from the diagram either in grams per thousand or as 60, 70, etc., the more common method of expression.

The vertical lines represent the number of cubic centimeters of a N/x NaOH required to neutralize the 10 cubic centimeters of decinormal acid solution. The horizontal lines represent the number of cubic centimeters of this solution of alkali required to neutralize 10 cubic centimeters of gastric contents. On the diagonal, passing (actually or by interpolation) through the point at which these lines cross, may be read off the acidity of the gastric contents, both methods of expression being given.

Examples: If 10 cubic centimeters are required to neutralize the decinormal acid solution and 6 to neutralize the gastric contents, follow the vertical line 10 down to the line 6. Where these lines intersect a diagonal line may be found which is marked 60 and 2.19. This means that the acidity of the gastric contents is 60, or, expressed in terms of hydrochloric acid, contains 2.19 gm. of acidity to each thousand cubic centimeters of gastric contents.

Amount in c.c. of the $\frac{N}{x}$ NaOH to neutralize 10 c.c. of a decinormal acid solution.



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[Further information on second advertising page following reading.]

SATURDAY, MARCH 24, 1906.

MEDICAL AND LIBERAL EDUCATION.

All who have been striving to promote solid progress in the American medical profession have taken great interest in the recent efforts to make possible the combination of liberal education, as represented by a preliminary college degree in arts and science, and the exacting requirements of present day medical education. From the comparative low standard of fifty or more years ago, the requirements for admission to college and for obtaining the degree have been gradually and steadily increased until the average age for graduation has been increased two, three or even more years. The graduate of fifty years ago was no more advanced than the present sophomore and besides this the requirement for admission to college was much less exacting. Moreover, at least two additional years have been added to the time required for medical study and this is not optional, but required by state laws, much to the benefit of the standing of the medical profession. As a result of these increased requirements it is seldom possible for a man to get the liberal education represented by a college degree and to take the four years required in medicine before twenty-seven or twenty-eight years of age, and the man does not reach his period of useful activity until he is nearly thirty years old. The increase in time is so great that many men at present do not even try for a liberal education.

That this postponement of a man's practical usefulness should be cut down to two or three years and still leave him the advantage of liberal culture at college is generally admitted. To accomplish this various plans have been suggested. Chicago, Cornell, Michigan, Columbia and a number of other institutions have arranged a combination of courses by which the student may take a degree both in science or arts and in medicine in one or two years less time than the eight years regularly required for both degrees taken separately. Among the institutions not having a medical department, Wabash College allows its students to enter an approved medical college after three years of study and grants the degree in arts at the end of the first year of professional instruction. The cutting down of the required college course from four to three years for all students has been urged on several sides of late. This would not be so great an innovation, however, for Johns Hopkins Uni-

versity has required of its art students only three years of study, and with a liberal range of electives from the start, and for years Yale has maintained a three years' course in its scientific school. At Harvard the present system gives an opportunity to take the degree in three years, and about 15 per cent. of the student body avail themselves of this. We are told that the change has not lowered the standard nor lessened the distinction of the degree.

The discussion of a three years' course as the normal for the degree in arts has recently been taken up at the meeting of the Associated Harvard Clubs and a sixty page report prepared, giving the opinion of the graduate body on the practical side of the question and the actual bearing of period of residence on after life in the professions and in business, specially in the West. The counting of the first year of professional study as the fourth year in college is thought objectionable because it forces the student to discriminate in favor of the professional school connected with the university in which he takes his arts degree, for they consider it desirable that he should choose independently. An abstract of the report, published in the *Harvard Graduates' Magazine*, 1905, vol. xiv, p. 95, will be of interest to all who have been following these questions. There has undoubtedly been a falling off in the proportion of the college educated men taking up the study of medicine and by cutting down the liberal course of study the number would no doubt be somewhat increased again. European experience, where secondary schools are highly organized and well conducted and professional education amply developed, all indicates that four years of liberal study can not be maintained between the school period and the period of professional study. The standards of the secondary schools should be improved and it would not be difficult to prepare the average student for college at least two years earlier than is usual at present. If this were arranged, with the cutting off of one year from the college course, it would be possible for students to graduate in both arts or science and medicine at twenty-four, instead of two or three years later, as is now usually the case. The shortening of the course of liberal study seems more justified from the reason that the mental discipline of the professional course is more valuable than formerly. The shortened course would also tend to lessen the excess of attention given to athletics and indulgence in other diversions injurious to proper attention to study, without depriving the student of reasonable opportunity to enjoy ideal college life. Three years of undergraduate study is sufficient to give the general culture, which is the object of college education, and three comparatively strenuous years are better altogether than the present four years of lax effort.

Whether the suggestions of the committee of the Associated Harvard Clubs will lead to any change of policy by Harvard University will remain to be seen. But the fact that the report of the committee includes letters

and interviews from over fifty persons in business and professional life indicates a live interest in the problem by busy men. Those of the medical profession, who have had the advantages of collegiate training, are general advocates of similar liberal studies for others; and, no doubt, whether these changes are introduced or not, a great proportion of the coming leaders of the medical profession, as in the past, will precede their medical studies by a college course. That the efficiency of education need not suffer by an arrangement which would shorten the course two or three years, we feel sure, and any arrangement that would bring about such an end would undoubtedly be welcomed by students.

EXPERIMENTAL EOSINOPHILIA.

There are two opinions in regard to the relationship between the various forms of white blood corpuscles, the one maintaining their genetic distinctness, the other that transition is easy from one form to another, and well-known hematologists are arrayed on either side.

On account of the large size and the staining properties of their granules, the eosinophilous leucocytes have served as the basis of more study than other forms. Their increase in the blood in certain diseases has considerable importance in diagnosis; as is well known, in trichinosis, for example, eosinophilia is very characteristic, but it may occur in other forms of helminthiasis as well. The behavior of eosinophiles in bacterial infections has long been the subject of investigation, and it has been ascertained that in some infections an increase of eosinophiles indicates a favorable outcome, while diminution in number has the contrary significance. In spite of the many researches these cells have instigated, their origin and their granules still present many problems.

It has been generally taught that the eosinophiles, in common with other leucocytes, are produced in the hematopoietic lymphoid structures, especially the bone marrow; that their appearance in the blood in larger numbers than normal is due to a chemical attraction caused by substances or alterations in the fluids of the blood, and their great excess over other forms of leucocytes in the tissues in certain inflammations and tumors, the so-called localized eosinophilia, has also been explained by chemotaxis.

Now the similarities in appearance and reactions to dyes of the erythrocytes and the granules in the eosinophilous leucocytes have led to suspicions that there might be a genetic connection between the two; indeed, it was once supposed that the red cells were derived from these granules. The exact converse of this, the origin of the granules from the red cells, is also an old idea, but one which has met with little acceptance because of the prevalent belief in the distinct origin and specific nature of each form of leucocyte and their inability to be transformed, one into another.

It is, therefore, of great interest to have rather convincing evidence offered in favor of the assumption that the granules in eosinophilous leucocytes consist of hemoglobin derived from the red corpuscles; in a word, that eosinophiles are essentially phagocytes; and a point of view is presented that may lead to quite radical alterations in our ideas of leucocytes.

Stschastnyi finds a marked eosinophilia in animals a few days after the intraperitoneal injection of either normal alien serum or alien serum with increased hemolytic properties, the so-called immune serum.¹ The presence of eosinophiles in the peritoneal cavity, in the omental vessels and vessels of other adjacent structures in greatly augmented numbers preceding the development of a generalized eosinophilia led him to trace the origin of the eosinophilia in the phagocytosis of erythrocytes, terminating in eosinophilous leucocytes by unbroken transitions, which followed the injections. Phagocytosis was also present in the bone marrow, and here also the eosinophiles were increased in numbers. These experiments indicate, therefore, that the eosinophilia is an expression of the manner in which the organism disposes of its own red corpuscles.

This explanation of the experimental eosinophilia caused by hemolytic sera may throw some light on the increase of eosinophiles observed, for instance, in hemorrhagic pleuritic exudates; also on the eosinophilia appearing after the acme of numerous infectious fevers and on the repeated occurrence of eosinophilia in the afebrile stages of the malarial fevers. It is noteworthy in this connection that phagocytosis of red corpuscles is a part of the histologic changes in many infections. The study of hemolysis has been, for the most part, the study of the solution of the red blood corpuscles of one species by the blood serum of another, a field apparently quite removed from practical medicine. These observations of Stschastnyi must be added to the list, already a long one—many examples have been considered in these columns—of instances in which light has been thrown unexpectedly on obscure processes of spontaneous disease by the study of hemolysis.

"SPIROCHLETA PALLIDA" IN HEREDITARY SYPHILIS.

"*Spirochaeta pallida*" has been demonstrated in the organs of hereditary syphilites by a number of observers. Just recently Levaditi publishes an important contribution to this subject,² in which several interesting facts are brought to light. Thanks to an improved staining method (impregnation of small pieces of formalin fixed tissue with silver nitrate, reduction with pyrogallie acid, and counterstaining), Levaditi is able to establish more clearly the relations of the spirochete to the lesions in hereditary syphilis than heretofore possible. He shows that organs and tissues most involved in the syphilitic process contain the largest number of organisms, namely,

1. Ziegler's Beiträge, 1905, vol. xxxviii, p. 456.

2. Ann. de l'Inst. Pasteur, 1906, vol. xx, p. 41. See p. 917.

the liver, the lungs, the adrenals, and the skin, in the order given, thus demonstrating the rôle of the spirocheta to be more important than that of a mere secondary invader.

In acute, rapidly fatal cases the parasites are more diffusely distributed, in the chronic, tardy cases they are present mostly in the organs affected, e. g., the liver. The parasites appear to become arrested first in that fetal organ, namely, the liver, which is the first to receive the blood as it comes from the placenta. Levaditi pictures spirochetes in the lumen of the hepatic vessels in certain cases; the organisms do not appear to multiply in the blood, however, but to pass into the perivascular tissues and the glandular epithelium. There result endarteritic and periarteritic processes, infiltrations and sclerosis of the connective tissue, and parenchymatous degeneration, all due, it would seem, to the direct action of the organisms themselves, which are present in enormous numbers, rather than to the diffusion of soluble products. The maceration of the syphilitic fetus after intrauterine death is regarded by Levaditi as the result of a widespread secondary autolytic effect and not as due directly to the spirochetes. The presence of organisms within large phagocytic cells, especially in the pulmonary alveoli, would seem to indicate that phagocytosis is an important means of defense against this virus and especially because the organisms are seen to undergo disintegration within the phagocytes. The presence of spirochetes in the lumen of bronchi and also in the renal epithelium indicates that the sputum and also possibly the urine may be infective in hereditary syphilis. Another source of infection is seen in the skin, the papillæ of which, as well as the contents of pemphigal vesicles, may harbor well-preserved spirochetes.

In doubtful cases the demonstration of *Spirocheta pallida* may settle the diagnosis if, as seems to be the indication, this organism comes to be accepted as the causative agent of syphilis. Already interesting questions suggest themselves as to the mode of infection in congenital syphilis, especially in those cases which we now regard as paternal and conceptional.

THE ZEISS OPTICAL WORKS.

Few of us who use the admirable microscopes which bear the name of Zeiss realize that when we buy one of these instruments we are encouraging a most novel and daring, if not revolutionary, industrial experiment. Carl Zeiss and his partner, Ernst Abbe (the inventor of the Abbe condenser) are not known to the scientific world as altruistic dreamers, yet the record of their experiment in profit sharing and in the application of democratic ideals to industrialism reads almost like the optimistic visions of a Bellamy.

The Zeiss optical works were started in a humble way in Jena as long ago as 1846 under Carl Zeiss, who later, in 1875, took as partner Ernst Abbe. From the first Zeiss seems to have planned the organization of the

industry on a co-operative basis, with the guarantee of personal liberty to the employés in all political matters, an unusual departure in Germany at that time. His views, however, were not fully realized during his lifetime, but were developed after his death by Abbe, a man of singular unselfishness and idealism. At Zeiss' death, in 1896, the entire capital invested in the now enormous business was left in Abbe's hands and he handed it over to an organization, the "Carl Zeiss Stiftung," which is established under the laws of Saxony with a trustee appointed by the State to supervise it. For himself Abbe reserved only the modest income of \$2,500 a year up to his death, which occurred a short time ago. The 1,300 employés, most of them highly skilled artisans, form now an association which undertakes the management of the business through committees, their avowed object being the payment of wages, not the making of profits.

The management of the works follows principles which would seem to us socialistic in the extreme. There is a regulation that the highest paid official shall not receive more than ten times the average yearly earnings of the average adult workman. An employé who has reached a certain yearly rate of wages can not after that receive any less sum on account of slack times. Most remarkable of all, in case of dismissal for no fault, after three years' employment, the workman receives at least six months' pay. Of course, there are minor advantages, such as the eight-hour work day, holidays on full pay, grants for buying homes, insurance against sickness and death, premiums for new inventions and labor-saving devices of all kinds. These apparent extravagances, however, do not prevent the company from making profits, which profits are partly distributed among the workmen, the rest being used for extension of the works, for grants to the University of Jena, and for institutions of social amusement and education for the workers themselves. The influence of Carl Zeiss is seen especially in the provision which makes it possible not only for the artisan to join any party or trades union that he may choose, but which encourages him to hold office under the local or imperial government, granting him leave of absence on full pay for the time required to perform his public duties.

Whatever we Americans may think of the ideals of Zeiss and Abbe we must admit that their experiment, now fully ten years old, has proved itself a success in the business world and that the product of this utopian factory has probably no equal anywhere.

VIVISECTION.

A correspondent has sent, for examination and comment, a pamphlet entitled "Illustrations of Human Vivisection," published apparently in Chicago by the "Vivisection Reform Society," an organization the avowed purpose of which is to make vivisection experiments a crime, except when under legal regulation.

While the tone of the pamphlet is generally unjudicial and the author seems to have a strong personal bias against at least one prominent member of our profession, we are willing to assume for present purposes that ignorance, and not wilful malice, must have been the cause of some of his illegitimate inferences, not to use another designation. We would therefore say, for his information, that, in accounts of physiologic experiments, "toxic" does not mean lethal or even necessarily dangerous; that "inoperable," from a standpoint of cure, does not mean that operation to prolong life or to make the remnant easier is unjustifiable; that the administration of pain-relieving drugs to neuralgic soldiers is not inhuman, even if the pulse and pupils were observed, and that it would be usually considered very mild treatment for military malingerers. Forty years ago comparatively little was known of the antagonism of atropin and morphin, and such observations were valuable and the world has profited by them ever since. Other suggestions might be made, but we have probably gone sufficiently out of our way now to set the author of the pamphlet right. It is to be hoped that he will be more careful in the future in his inferences and deductions. *THE JOURNAL* is in full accord with every right-minded person in denouncing reckless experimentation, but it does not expect to suit some of the antivivisectionists who, ignorantly or otherwise, reject facts when these do not conform to their theories.

GOOD RAILROAD RATES FOR THE BOSTON SESSION.

The Trunk Line Association, covering the eastern railroads, as well as some of the other passenger associations, have granted a rate of one fare for the round trip, plus \$1.00, for the coming session of the American Medical Association. Undoubtedly all of the other passenger associations will take the same action, so that we may depend on one-half rates from all parts of the country. An extension of time to June 30 will be granted on payment of \$1.00. Those coming from the Pacific Coast points can have an extension of return limit up to August 31. This concession to our friends on the Pacific Coast is made, of course, on the supposition that, after coming so far, they will want to take advantage of the trip to visit friends or to see the attractions of the east. Efforts are being made to secure such arrangements that one may go by one route and return by another, as was the case last year. Whether or not such concessions will be granted on the half-rate fare is yet to be decided.

LEGISLATION TO PREVENT THE SALE OF UNDRAWN POULTRY.

Senator Gallinger has introduced into the United States Senate a bill making it "unlawful for any person, firm or corporation to sell, offer or expose for sale, within the District of Columbia, any poultry, refrigerated or otherwise, which has not been properly drawn and prepared by removing the viscera at the time of slaughter." Violation of the act is punishable by a fine not exceeding one hundred dollars, or by imprisonment not exceeding thirty days, or both. The bill was referred

to the Committee on the District of Columbia and by that committee recommended for passage. The necessity for such legislation will be recognized by those who have given the matter thought. The keeping of meats, eggs, vegetables, fruits, etc., in cold storage has grown to such enormous proportions that it would seem that in the large cities the greater bulk of our foods is being so preserved. To what extent such foods are injurious or are depreciated in their food value has not been sufficiently investigated to come to definite conclusions, but undoubtedly many articles so preserved do depreciate in many ways and become a danger to health.

THE AUTOMOBILE NUMBER OF THE JOURNAL.

To no one class of people is the automobile of more practical importance as a business proposition than to physicians. Whether in the city or country, the physician needs a means of quickly, safely and surely reaching his patients—and of getting home again. On account of this general interest of physicians in the subject, it is believed that a special number of *THE JOURNAL* devoted to a discussion of the automobile as a convenience for physicians will be of practical interest and will be welcomed. We have had such a number in hand for some weeks, and have already received a large number of articles on the subject, but we shall be glad to hear from any physician who has had practical experience and who has not already written us. We want both sides. The expense and the difficulties connected with the machine as compared with the horse, the type of car most practical, technical points connected with gears, transmissions, cylinders, fuel, cooling apparatus, tires, etc., are important items for discussion. Articles must be brief, terse and to the point, as the space devoted to the subject must necessarily be limited. All manuscripts should be received by April 2. The date of issue will be April 21.

QUININ IN PNEUMONIA.

It is possible that in emphasizing a certain point in the editorial under the above title in last week's issue we may have been misunderstood, for we came very near to actual overstatement. We said: "In private practice it is no uncommon thing for a busy physician to treat 40 to 50 consecutive cases of pneumonia by the so-called expectant or symptomatic plan, and to have no deaths." It would have been better if we had said that "it may occasionally happen that a physician with a large practice," etc. Undoubtedly, in private practice, and more rarely in hospitals, a considerable series of favorable cases may be met with, especially in the young, and in these cases an unusually favorable outcome may result. We would not imply that the mortality from pneumonia is low, for we have repeatedly shown that the total mortality from this disease is pretty nearly as high as that from tuberculosis. Dr. E. F. Wells published some statistics some time ago in which it was shown that the mortality from pneumonia was 18.1 per cent. This was based on a study of 233,730 cases.¹ We repeat that

1. E. F. Wells: *THE JOURNAL A. M. A.* 1902.

we welcome any contribution to the subject of treatment of this disease that is based on a careful study of a number of cases, whether by the treatment recommended by Dr. Galbraith or by that which recognizes the disease as a self-limited one and that the *vis medicatrix nature* will bring about a cure in the majority of instances.

Medical News

COLORADO.

New Hospital.—The new City Hospital, La Junta, was opened February 12.

Fire in Medical College.—Fire did damage to the amount of \$10,000 to the Denver and Gross College of Medicine January 30.

Will Erect Dispensary.—The Denver and Gross Medical College will shortly erect a dispensary on two lots adjoining the College of Music at Fourteenth and Arapahoe streets.

Physician Gets Damages for Injury.—A verdict of \$5,500 was rendered against the Inter Mountain Improvement Company in favor of Dr. Fred H. Welles, Victor, who had his left leg and foot crushed between the elevator and the wall of the shaft in a building owned by the defendant, in 1902. He sued for \$50,000 damages.

Eastern Practitioners Meet.—The Eastern Colorado Medical Society held its annual meeting January 9 and 10 at Wray, and elected the following officers: President, Dr. Earl D. McGill, Wray; vice-presidents, Drs. W. E. Turner, Brush and George B. Billsborrow, Yuma; secretary, Dr. S. S. Bootay, Akron, and treasurer, Dr. N. J. Phelan, Denver.

Personal.—Dr. Frank N. Carrier, Canon City, has been appointed physician of Fremont County; Dr. James W. Rambo, Florence, assistant county physician, and Dr. Wilbur T. Little, Canon City, county health officer.—Dr. F. L. Bartlett has been elected president, Dr. John W. O'Connor, vice-president, and Dr. William H. Bergtold, secretary, of the Colorado Automobile Club, Denver.—Dr. Michael Beshoar, Trinidad, after fifty-three years, retired from active practice February 25.

January Vital Statistics.—During January 939 deaths were reported, equivalent to an annual death rate of 16.8 per 1,000. Scarlet fever caused 13 deaths; typhoid fever, 12 deaths, and diphtheria, 8 deaths, during the month. There were reported during the month 179 cases of scarlet fever, 75 cases of typhoid fever, 49 cases of diphtheria, and 26 cases of smallpox, an increase, as compared with the preceding month, of 60 cases of scarlet fever, 8 cases of typhoid fever, 1 case of diphtheria, and 16 cases of smallpox.

DISTRICT OF COLUMBIA.

Smallpox. The smallpox situation in the District is becoming serious. All the cases are said to be traceable directly to cases erroneously diagnosed, which remained unquarantined.—Dr. Arthur C. Stanley, an interne at Garfield Hospital, is ill with smallpox.

Banquet in Honor of Dr. Hare.—The Clinical Society of Washington gave a banquet March 10, the guest of honor being Dr. Hobart Amory Hare, Philadelphia, who delivered an address on "The Relation Between Diseases of the Heart and Diseases of the Arteries."

Hospitals Get Money.—By the verdict of a jury in the Probate Court, March 6, the will of the late Dr. Henry E. Woodbury, which bequeathed the bulk of his estate, valued at about \$35,000, to the Garfield Memorial Hospital and the Children's Hospital, share and share alike, was sustained.

Want a Clean River.—A determined effort is being made by the officials of the Army Medical Department, Public Health and Marine Hospital Service, Medical Society of the District of Columbia, and other organizations, to prevent the pollution of the Potomac River and to improve the sanitary conditions.

FLORIDA.

State Health Officer Indorsed.—By a unanimous vote the Jacksonville Board of Trade adopted resolutions expressing implicit confidence in Dr. Joseph Y. Porter, Key West, state health officer, and urging him to withdraw his resignation. Similar resolutions were adopted by the Key West Chamber of Commerce.

Hospital Closed.—The Emergency Hospital, Jacksonville, was closed February 1 owing to the failure of the city council to make provisions for its maintenance.

Personal.—Dr. and Mrs. Percy J. Stollenwerck, Jacksonville, have returned from Europe.—Dr. George W. Lamar, Quincy, has been appointed by the governor, medical superintendent of state convicts.

Mental Healer Imprisoned and Fined.—After a trial of twelve days Helen M. Post, head of the Mental Science Institute, Sea Breeze, an "absent treatment" institute, was found guilty, February 3, of using the mails for fraudulent purposes and sentenced to pay a fine of \$500 and to be imprisoned for thirty days in jail.

New Sanitaria Completed.—The Centro Espanol Sanitarium on the bay shore, Tampa, erected by the Spanish colony of that city and presented to the city of Tampa, was dedicated February 4.—The De Soto Sanitarium, Jacksonville, which is owned and operated by local physicians and has a capacity of 50 patients, is now open to the public.

GEORGIA.

Damage by Fire.—Dr. B. J. Simmons, Milledgeville, lost \$1,000 by a fire which did severe damage to the business portion of the city, February 1.

New Laboratory Installed.—The new municipal laboratory, Atlanta, has been installed in the City Hall and is under the charge of Dr. Claude A. Smith, city chemist.

Historic Building Demolished.—The historic old medical college building, Atlanta, which was pressed into service during the Civil War as a Confederate hospital, is being torn down to make room for the new building of the Atlanta College of Physicians and Surgeons, to be erected at a cost of \$75,000.

Personal.—Dr. Thomas R. Wright, Augusta, has been re-elected a member of the governing board of the city hospitals.—Dr. Joseph E. Allen has been elected dean of the faculty of the Medical College of Georgia, Augusta, to fill the vacancy caused by the death of Dr. De Saussure Ford.—Dr. Edward Geddings has been elected emeritus professor of physiology and pathology in the Medical College of Georgia, Augusta.—Dr. George Brown, Atlanta, assistant surgeon general, has been commissioned colonel and surgeon general of the National Guard, Georgia, vice Dr. Joseph A. Guinn, Conyers, retired.—Dr. Samuel H. Green, Chattahoochee, has been commissioned captain and assistant surgeon, National Guard of Georgia, and assigned to the Fifth Infantry.—Dr. Joseph J. P. Bowdoin has been elected mayor of Adairsville.—Drs. William W. Owens, Savannah, and A. P. Taylor, Thomasville, have been reappointed members of the State Board of Health.—Dr. John M. Caldwell, Augusta, city physician for the third district, jumped from his buggy when his horse ran away, February 9, and fractured his leg just above the ankle.

ILLINOIS.

Benefaction to Hospital.—Brokaw Hospital, Bloomington, has received \$100,000 from the Brokaw estate.

Acquittal.—In the suit of Mrs. Arthur Rueckman against Dr. Isaac Moore, Alton, for slander, the jury returned a verdict of acquittal.

Smallpox.—It is reported that smallpox of mild type has broken out in Freeport. It is supposed that the disease was imported from Lanark.

Books Given to Library.—Dr. Thomas J. Pitner has given 300 volumes to the Jacksonville Public Library, and the sons of the late Dr. David Prince have donated 700 volumes to the same institution.

Physicians Vindicated.—In the suit of W. P. Eich, Emington, against Dr. Clarence P. Wikoff, Emington, for damages for alleged malpractice, the physician was completely vindicated, as the plaintiff utterly failed to make a case.

Personal.—Dr. Thomas L. Catherwood, Shelbyville, was stricken with paralysis at his home, March 7.—At the last meeting of the Imperial-Royal Medical Society of Vienna, Dr. Nicholas Senn, Chicago, was unanimously elected an honorary member of the society.—Dr. John L. Vinton, Bloomington, was elected physician of McLean County, March 8.—Dr. William Hiesert, Chicago, has been appointed surgeon in the Alexian Brothers' Hospital.

Dr. McCormack's Itinerary.—Dr. J. N. McCormack, chairman of the Organization Committee and national organizer for the American Medical Association, will spend the month of April in Illinois. In Dr. McCormack's reply to the invitation of Dr.

H. C. Mitchell, president of the Illinois State Medical Society, he urges the importance of securing the attendance of laymen at all meetings. The invitations should include senators, representatives, municipal and county officials, the pastors, bar and teachers' associations, druggists, W. C. T. U. and other clubs, as well as business men generally. He says: "I am discussing the scientific and business affairs of the profession, the 'patent-medicine' question, and other matters of this kind before popular audiences every day, and I find that it enables me to strengthen the profession with the public in a way that has never seemed possible before." The itinerary for Dr. McCormack as now arranged is as follows:

Councilor District 9.—Carbondale, April 2; Mt. Vernon, April 3.
Councilor District 7.—Centralla, April 4; Decatur, April 5.
Councilor District 8.—Olney, April 6; Newton, April 7; Champagne, April 12.

Councilor District 6.—Pittsford, Quincy, April 9; St. Sterling, Virginia, Jacksonville, April 10; Carrolton, Carlinville, Alton, April 11.

Councilor District 5.—Lincoln, April 13; Bloomington, April 14.
Councilor District 4.—Galva, Rock Island, April 16; Monmouth, Macomb, April 17; Peoria, April 18.

Councilor District 2.—Pontiac, April 19; Ottawa, April 20; Sterling, April 21.

Councilor District 1.—Freeport, April 23; Rockford, April 24; Aurora, April 25.

Councilor District 3.—Joliet, April 26; Chicago, April 27-28.

The meeting places and other local arrangements will be announced in the various towns and councilor districts by letter and through the local press.

Chicago.

Arrest Spitters.—Acting under orders from the chief of police, a crusade has again been begun against men who expectorate in street cars and other public places.

Hospital for Acute Alcoholism.—Alderman Scully has introduced an ordinance in the city council providing for the construction and maintenance of a hospital for the treatment of acute alcoholism.

Sues Advertising Specialists.—Adolph Sieffert on March 12 sued the Auld Medical Company for \$80, which he claimed to have paid under contract that he was to be cured of a disease which had been pronounced incurable by physicians.

Deaths for the Week.—The total deaths from all causes for the week ended March 17 were 555, 52 less than for the previous week and 2 less than for the week ended March 18, 1905. The respective annual death rates per 1,000 were 14.10, 15.44 and 14.57. Pneumonia caused 99 deaths; consumption, 62; heart diseases, 39; Bright's disease, 38; acute intestinal diseases, 30; violence including suicide, 28; and bronchitis, 26. Scarlet fever caused 9 deaths; whooping cough, 2; measles, 1, and diphtheria, 9.

INDIAN TERRITORY.

Hospital Established.—The Wilburton Emergency Hospital has been established by Drs. U. A. D. Collema, W. H. Florine and Arthur L. Anderson.

Orders Vaccination.—The Muskogee Board of Health has ordered that all school children who can not produce certificates of recent vaccination must be vaccinated.

License Revoked.—The medical board of the southern district recently revoked the license of Dr. R. W. Freeman, Chickasha, on the ground of dishonorable and unprofessional conduct. Dr. Freeman secured a writ of supersedeas and has now brought suit for damages aggregating about \$13,000 against fellow practitioners, who he alleged were responsible for the charges which led to the revocation of his license.

Society Meetings.—The Muskogee Medical Society, at its meeting January 16, adopted a resolution that all regular physicians should take their professional cards from the daily papers and should refrain as much as possible from newspaper publicity.—The Medical Clinical Society met at Durant, February 13, and elected the following officers: President, Dr. A. S. Hagood, Sterrett; vice-presidents, Drs. G. M. Rushing, Durant, and W. M. Armstrong, Mead; secretary, Dr. J. A. Humphrey, Durant, and treasurer, Dr. H. W. Yates, Bokshito.

INDIANA.

Epidemic Diseases.—Several hundred cases of whooping cough are reported from Princeton.—At Argos, north of Rochester, 172 cases of measles have been reported, with three deaths.

License Revoked.—On the allegation that she has been guilty of criminal practice, the State Board of Medical Registration and Examinations on March 12 revoked the license of Dr. Mary A. Wherry, Fort Wayne.

Goshen to Have Hospital.—The Goshen Medical Society met with Dr. Irvin J. Becknell, March 9, to discuss plans for a city hospital. About \$25,000 will be required for this purpose, \$5,000 of which has been bequeathed by a woman of Denver.

Acquitted.—The jury in the case of Dr. William H. Dings, Mitchell, charged with performing an illegal operation on Carrie Shaw at Mitchell in September, 1904, as a result of which the woman died, returned a verdict of acquittal, February 23.

Newcastle Gets Epileptic Village.—It has been decided that the state epileptic village shall be located in Henry County, near Newcastle. Forty-two towns in the state were applicants for the location. The state paid \$122,882 for the site, or \$100 an acre.

Condemns Criminal Practices.—The Delaware County Medical Society on March 2 passed a resolution calling on the State Board of Medical Registration and Examinations to bar from the practice of medicine all practitioners in the state convicted of criminal practices.

Ross Again in Trouble.—Dr. Nelson B. Ross, Muncie, whose license to practice was revoked on account of gross immorality, was arrested and taken to Newcastle, February 18, on account of an alleged connection with the death of Miss Ethel Hart, Springfield, from an illegal operation.

Physicians Banqueted.—A banquet was given by the physicians of Terre Haute, March 6, in honor of the fifty-fifth anniversary of the doctorate of Dr. Stephen J. Young.—A banquet was given by the faculty of the Indiana Medical College, March 1, in honor of Dr. Henry Jameson, dean of the faculty. Dr. John H. Oliver officiated as toastmaster.

Smallpox.—From 15 to 20 cases of smallpox have been reported on the west side of Michigan City.—About 20 cases have been reported at English, Crawfords County, and the March term of court, which was to have convened at that place March 12, has been postponed.—Epidemics of smallpox are reported in Miami and Fulton counties.

Personal.—Dr. Volney S. Cheney has resigned as health officer of Bluffton.—Dr. J. B. Seaman, Osceola, who was recently injured in a collision with a street car in South Bend, is improving.—Dr. David S. Linville, Columbia City, is seriously ill.—Dr. William A. Eshelman, secretary of the Anderson board of health, has resigned to accept a position as medical examiner for the Pennsylvania System.

Society Meetings.—Floyd County Medical Society met at New Albany, March 1, and elected the following officers: President, Dr. George H. Cannon; vice-president, Dr. Walter J. Leach; secretary and treasurer, Dr. Dumont Garey; delegate to the State Medical Society, Dr. Elihu P. Easley, and alternate, Dr. J. F. Weathers, all of New Albany.—Physicians of Summitville have organized a physicians' club, with the following officers: President, Dr. Winsor Anstin; vice-president, Dr. Audley V. Fankboner, and secretary and treasurer, Dr. Elta Charles.

IOWA.

Pure-Food Law.—The legislature has passed a law providing for an annual appropriation of \$10,000 for a pure-food laboratory and other necessary expenses.

Itinerant Physicians.—There are fifteen physicians in the state practicing as itinerants. A list of these is given in the March number of the *Iowa Health Bulletin*.

Mahaska County Medical Society.—At the meeting of the Mahaska County Medical Society, March 13, papers were read by Drs. H. C. Homer, J. G. Roberts and D. C. Brockman. In the evening Prof. Henry Albert, state bacteriologist, gave an illustrated lecture on "Bacteria and Disease," to which the public was invited.

Medical Legislators.—The following are the physician members of the Thirty-first General Assembly, now in session: In the Senate, Dr. Henry Young, Manson; in the House of Representatives, Drs. Mark A. Dashiell, Indianola; Ross H. Gregory, Nevinville; Louis J. Leech, West Branch; George McCulloch, Humeston; L. F. Summers, Milton, and Elbert W. Clark, Grinnell.

Practicing Without License.—A. J. Kendig, Winterset, was tried and convicted in Madison County for practicing medicine without having procured the required certificate.—B. P. Miller, an alleged drugless healer of some denomination, has been indicted by the grand jury of Black Hawk County for violating the medical practice law.—The following persons were indicted by the Page County grand jury for practicing

medicine without a certificate: John E. Swanson, Essex; D. W. Humphrey, Shenandoah; John L. Cox, late of Braddyville, and Mrs. Thielen of Clarinda.

Tuberculosis in Iowa.—The board of control of state institutions has just submitted to the legislature its report on the extent of tuberculosis in Iowa and the best means of prevention and treatment of the disease. The report consists of a fifty-page volume and contains considerable interesting information. According to the report there were during the year ending June 30, 1904, 4,569 cases of tuberculosis in the state, as reported by 2,436 out of the 3,532 physicians of the state, no reports having been received from 1,096 physicians in response to blanks sent out by the board of control. Of the 2,436 physicians who reported cases 1,039 had no cases to report. There is no doubt but that there are more than 4,569 cases of tuberculosis in the state. That figure probably represents two-thirds of the total number, if we consider that the physicians who had no report had just as many cases as those who did report. Of the 4,569 cases reported 3,725 were of the pulmonary type and 844 were cases of tuberculosis in other organs. Women are more frequently affected than men, as shown by the figures that 2,611 of the cases were females and 1,877 were males. The following age reports are also of significance: From 1 to 10 years, 332 cases; from 10 to 20, 685; from 20 to 30, 1,586; from 30 to 40, 1,076; from 40 to 50, 435; from 50 to 60, 266; from 60 to 70, 161; from 70 to 80, 50; over 80 years of age, 5. It will, therefore, be seen that the vast majority of the cases are in persons from 20 to 40 years of age, very few below 10 years of age, and very few above 60 years of age. The occupation of the tuberculous individuals is also given. It states that there are 10 physicians who have tuberculosis. The report also gives the results that have been obtained by different methods of treatment in various parts of the world and ends with the following conclusions: 1. There are at least 7,000, probably 7,500 cases of tuberculosis in Iowa; 2. that the best means of preventing the spread of the disease is by informing the people regarding the dangers of tuberculosis, the reporting of all cases, prohibiting expectoration in public places, and the removal of consumptives to sanatoria.

KANSAS.

New Hospital.—A new hospital is to be erected at Independence to contain 25 rooms and to cost about \$10,000.

Orders Fumigation of Street Cars.—The city board of health of Topeka has issued an order requiring the Topeka Railway to fumigate its street cars at least once a month.

Diphtheria Prevalent.—During the month of February there were 220 cases of diphtheria and 29 deaths, as compared with 55 cases and 10 deaths for the corresponding period of 1905.

Smallpox.—Four cases of smallpox have developed among the convicts from Kansas and Oklahoma confined in the state penitentiary at Lansing. The prison has been placed under strict quarantine; no convicts will be received or discharged, and no guards will be permitted to leave the prison until the quarantine is raised. More than 1,000 of the convicts have been vaccinated.

MARYLAND.

Baltimore.

Health Report.—Five cases of smallpox were reported during the week ended March 17. Diseases due to cold and wet were in the majority. The deaths from pneumonia were 37; from consumption, 32; from bronchitis, 7; from influenza and whooping cough, each 5.

Personal.—Among those who will go abroad this summer are Drs. Randolph Winslow, J. Mason Hundley and Frederick Dobyns.—Dr. Ira Remsen, president of the Johns Hopkins University, is in California this week, attending a meeting of the American Universities, held under the joint auspices of Leland Stanford and California universities at San Francisco, March 14 to 17.—Dr. Thomas S. Cullen sailed on March 14 for a trip of several months through Europe.—Dr. William A. Parvis is recuperating his health at Mount Jackson, Va., and will leave for Colorado June 15.—Dr. Summerfield R. Bond has been appointed chief medical examiner of the Baltimore & Ohio Railroad.—Dr. Harry D. Purdum has resigned from the resident staff of the University Hospital to accept a position in a Michigan insane hospital.

Tuberculosis Bills.—There are now two bills before the legislature for a tuberculosis sanitarium, one asking an appropriation of \$100,000, the other of \$25,000. The former contemplates a state institution, the latter simply an appendage to the present Endowment Consumptive Hospital. It is claimed by

advocates of the second bill that contributions can hereafter only be secured for the proposed institution by its remaining private, and that, in fact, a large amount has already been secured. The state bill, however, has the backing of the profession and was urged at Annapolis, March 13, by Drs. Welch, Thayer, Finney, Fulton, Hocking and others. While advocating the state institution these gentlemen, however, are not opposed to the appropriation also asked for the Endowment institution, over which Dr. Henry Barton Jacobs presides and in which he is specially interested.

MISSOURI.

Hospital Opened.—The Sisters of Mercy at Springfield, Mo., opened to the public an February 22 the new St. John's Hospital, recently erected at a cost of \$50,000.

Accident.—Dr. R. Wood Brown, Kansas City, sustained a fracture of the left leg in a fall from a street car, January 24, and lay in the street for more than four hours before help was rendered him.

St. Louis Urological Society.—This society was organized March 16 with twelve charter members. Dr. Bransford Lewis was elected president, and Dr. Eugene A. Scharff, secretary and treasurer.

Fined for Illegal Practice.—Dr. R. D. Haley, an advertising specialist, and his assistant, C. W. Laybourn, St. Louis, were each fined \$500 for practicing medicine without a license, February 28. They both gave notice of appeal.

Goes to Prison Unguarded.—Dr. Joseph D. Todd, Richards, was sentenced to imprisonment for twelve years for the murder of Robert Wall and appealed, being released on bail. When the decision of the lower court was affirmed by the Supreme Court, March 6, he went to the penitentiary and reported to the warden to begin serving his sentence.

Personal.—Drs. Augustus C. Bernays, George W. Cale, Jr., Willard Bartlett and John M. Dean have gone to Rochester, Minn., for a week.—Dr. and Mrs. Jefferson D. Griffith, Kansas City, sailed for Europe, February 8.—Dr. Charles M. Johnson, St. Charles, celebrated his eightieth birthday January 28, and his golden wedding anniversary on February 26.

NEW YORK.

The Epidemic at Yonkers.—The epidemic of tonsillitis in this city continues unabated and hundreds of people are confined to their homes.

Brooklyn's Water Supply.—Bills have been introduced into the legislature repealing the laws of last year prohibiting New York City from going to Long Island for a water supply, and giving Brooklyn permission to get water from Suffolk and Nassau counties.

Oppose Osteopathy Bill.—The State Department of Education has issued a formal statement to the members of the legislature declaring that, contrary to widely circulated reports, the department was opposed to the pending bill to secure legal recognition for the practice of osteopathy in the state. They assert that the state should not recognize any school of practice in medicine any more than any special creed or cult.

Personal.—Dr. F. Park Lewis, Buffalo, will spend the summer in Europe.—Dr. Roswell Park, Buffalo, has resumed his work after his severe illness.—Drs. Harvey Gaylord and G. Cloves of the New York State Cancer Laboratory, Buffalo, have sailed for Jamaica.—Dr. Burt C. Johnson, Buffalo, has gone to Europe.—Dr. William Mahon has been appointed superintendent of the Manhattan State Hospital, Ward's Island.

Osteopathic Legislation.—The osteopaths have again begun a campaign for medical license from the state. At a recent hearing at Albany Mr. M. W. Littleton spoke before the committee of the Assembly and the Senate. The medical profession was well represented in opposition to this bill. Last year the committee rejected the bill, and it is sincerely hoped that a similar fate awaits it this session.—Assemblyman Cox has introduced a new osteopathic bill which provides for a separate board of examiners and a three-year graded course.

Milk Decision Affirmed.—The validity of the law of the state prohibiting the vending of milk containing less than 12 per cent. of milk solids was argued before the Supreme Court of the United States in the case of Frederick S. John, a Buffalo milk dealer who was arrested for violating the law. The Supreme Court of New York affirmed his conviction and the constitutionality of the law, denying his plea that it deprived him of the equal protection of the law guaranteed by the federal Constitution. St. John's complaint was that the trial jus-

tice refused to allow him to prove that the milk he sold was in the same condition that it came from the cows and had not been adulterated, thus depriving him of the chance to prove his innocence.

Society Celebrates Centennial.—The Medical Society of the County of Rensselaer celebrated the one hundredth anniversary of its organization at Troy, February 22, with a banquet at which 125 members and guests were present. Dr. C. Howard Travell, the president, officiated as toastmaster, and addresses were made by Corporation Counsel George P. Wellington, who spoke on "Scientific Politics"; Dr. William M. Polk, New York City, who responded to the toast of "The Physician and the Layman"; County Judge Michael E. Tierney, who spoke of "The Physician in Law"; Prof. William D. Mason of the Rensselaer Polytechnic Institute, who responded to the toast "Professional Education," and Dr. R. Brockway, Bontecou, the Nestor of the society, who gave an exhaustive résumé of the growth and development of the organization.

Sea Side Hospital and Convalescent Home.—Assemblyman Tompkins has a bill before the legislature which creates a commission for the purchase of a stretch of ocean front on Long Island to be converted into a free park and convalescent home. This measure was first proposed by Mayor McClellan of New York in a message to the board of aldermen, in which he said: "Provision must soon be made by the city toward securing fresh air homes for children and convalescent patients from the city hospitals as well as breathing spaces for the whole people." It is proposed to set aside \$2,500,000 for this excellent project. Anticipating the passage of the bill sites have been discussed and suggested at Long Branch, Coney Island and Rockaway Beach. This building of hospitals and convalescent homes by the sea though apparently a modern idea is ancient, for in antiquity they built temples to Æsculapius near the sea side, and many great and ancient institutions of medical renown were situated on the sea side. This is particularly true of the great school of Salerno, one of whose teachers, a woman, Tratulá, wrote a treatise on the value of sea baths.

New York City.

Ball for Hospital.—Beth Israel Hospital's annual Purim ball was held March 14, when \$10,000 was realized for this hospital.

Hospitals Crowded.—It has become necessary to set apart two wards of Bellevue Hospital for tuberculosis patients, as there is room for no more tuberculosis patients at Blackwell's Island. As a result of this action the medical wards of Bellevue are somewhat overcrowded.

Health Department After Fur Dealers.—Notices have been served on dealers in raw furs in the business district that they must ventilate their work rooms from the top or stop dealing in "green" furs. The department insists that they shall ventilate through the roofs and then apply for a permit to do business as the law requires.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended March 10, 2,384 cases of measles, with 55 deaths; 436 cases of diphtheria, with 62 deaths; 414 cases of tuberculosis, with 187 deaths; 250 cases of scarlet fever, with 13 deaths; 30 cases of cerebrospinal meningitis, with 25 deaths; 17 cases of typhoid fever, with 3 deaths, and 171 cases of variola, making a total of 3,702 cases, with 345 deaths.

Street Cleaning and Pure Food.—A resolution for the issuance of special revenue bonds to the amount of \$25,000 for the special investigation of the street cleaning department was adopted at the last meeting of the board of aldermen. A resolution was also adopted urging the legislature to grant Dr. Darlington an appropriation for the investigation of the purity and healthfulness of foods, wines and beverages manufactured and sold in this state.

Concealed Measles.—Health inspectors in the Bronx have discovered that no less than 50 cases of measles in well-to-do families were not reported by the attending physician, and in cases where no physician was summoned mothers and nurses were charged with wilful neglect. These cases were all located in the neighborhood of the Bedford Park school and have had such an effect on the attendance that the school may have to be closed. Several children attended school while affected with the disease, and the health department has ordered a thorough investigation.

Homes for Medical Students.—The woman's advisory board of the Students' Club, the intercollegiate branch of the Young Men's Christian Association, is endeavoring to enlarge the work that it is conducting for medical students. John H. McCracken stated that there were not as many medical students in New

York as there were twenty years ago, owing to the lack of accommodation, and that if there was one class of men neglected more than another it was the medical students. It was right that more attention should be given to the housing of medical students and efforts would be made to enlarge the home so that forty men could be accommodated. The board has \$2,000 toward furnishing the new home.

Transfer of Dying Patients.—The practice of transferring dying patients from one hospital to another for the purpose of keeping down death rates has been criticised from time to time, and several deaths that have occurred recently have brought this matter to the attention of the coroners, who have framed the following resolutions:

Resolved, That this is in violation of all principles of justice and humanity, and meets with our disapproval; that we not only object but protest, and ask that all persons in charge of hospitals take measures at once and instruct the physicians in charge of patients not to remove them to other hospitals when conditions are such as to endanger the lives of the patients; and it is further *Resolved*, That if this matter is disregarded this board will take stringent measures to bring the violator to justice.

NORTH CAROLINA.

State Society Meeting.—The Medical Society of the State of North Carolina will hold its fifty-third annual session in Charlotte, May 29, 30 and 31. The State Board of Medical Examiners will meet in the same city May 24.

Hospital News.—Mercy General Hospital, Charlotte, was informally opened and dedicated February 26.—Two Philadelphia surgeons have purchased the old military school building at Rutherfordton and will erect a hospital and sanitarium to cost \$25,000.

January Deaths.—During January 222 deaths were reported, equivalent to an annual mortality of 17.1 per 1,000. Pneumonia caused 44 deaths, consumption, 23; heart disease, 16; brain diseases and diarrheal diseases, each 14; nervous diseases, 10, and accidents and violence, 9.

Personal.—Dr. James S. Lafferty, Concord, has removed to Greensboro.—Dr. Peter E. Hines, Raleigh, is critically ill with cerebral hemorrhage at his home.—Mrs. Ginnada T. Sykes, Grissom, and Erwin Q. R. Houston, Davidson, recently suffered severe losses by the burning of their residences.—Dr. Hubert A. Royster, Raleigh, has retired from general practice and now devotes himself exclusively to surgery and gynecology.—Dr. Richard H. Lewis, Raleigh, has been elected president, and Dr. Chase P. Ambler, Asheville, a member of the executive committee, of the Audubon Society of North Carolina.—Dr. McTeirre G. Anders, Connolly Springs, has located in Gastonia.

The Matthews Case.—Dr. Joseph B. Matthews, Greensboro, who was held after a preliminary hearing before a magistrate for trial at the next session of the Guilford Superior Court on the charge of having murdered his wife, was found guilty and sentenced to imprisonment for twenty years. The evidence was of a most serious nature. Three physicians who were called into the case found Mrs. Matthews in a dying condition from an excess of morphin, and it was with great difficulty and prolonged efforts they succeeded in reviving her. Constant efforts were made during the day by Dr. Matthews to get the physicians out of the room on various pretexts. Finally in the afternoon he succeeded, and returning after a short absence, two of the physicians discovered Dr. Matthews injecting a concentrated solution of strychnin into his wife's body. Her death ensued shortly after with the characteristic symptoms of strychnin poisoning.

NORTH DAKOTA.

Personal.—Dr. D. Tufte, Fargo, has returned after six months in Europe.—Dr. J. Dempster Taylor, Minot, has been re-elected physician of Ward County.

New Hospitals.—The new hospital for the insane at Jamestown has just been completed at a cost of \$60,000.—The Lutheran Hospital Association has decided to erect a hospital at Rugby, to cost about \$30,000.

Births and Deaths of 1905.—The secretary of the State Board of Health reports that during 1905, 4,912 births were reported to the board and only 1,747 deaths. Of the latter 479 were due to communicable diseases.

Agreement Regarding Insurance Examinations.—Physicians registered and practicing in the sixth councilor district, believing that the duties of insurance medical examiners require a high degree of professional skill, absolute integrity and special attention to the interests of the insurance companies, have pledged themselves to exercise skill and care in all examina-

tions and to make no discrimination in examinations or fees to different companies. They agree to be governed by the following schedule of fees: \$5 for each ordinary examination, including urinalysis; \$10 for each examination where microscopic examination of urine, sputum or other secretion is required, and \$3 for each certificate of health for renewal of lapsed policy. This agreement has been signed by all the physicians in Burlington and Kidder counties, and copies have been sent for signature to the physicians in the other counties in the sixth judicial district.

OHIO.

Hospital Needed.—Middletown is in urgent need of a hospital, and Dr. David B. Bundy has offered \$1,500 toward the establishment of such an institution.

Dr. Haugh Found Guilty.—Dr. Oliver C. Haugh, Dayton, charged with the murder of his father, mother and brother, was found guilty, March 9, of murder in the first degree.

Injured and Ill.—Dr. James W. Ward, Lytle, suffered a serious injury to one of his eyes a few days ago.—Dr. Addison K. Kirkpatrick, Eckmansville, has been taken to Cincinnati, where he will undergo a surgical operation.

Hospital Patients in Peril.—The Cleveland Homeopathic Medical College was practically destroyed by fire March 9, and the Huron Road Hospital, with its 63 patients, was placed in grave jeopardy thereby. Fortunately a panic was prevented, but one patient died from shock.

White Hospital Report.—The annual report of the White Hospital, Ravenna, for the year ended Jan. 1, 1906, shows that 182 surgical cases, 103 medical cases, and 23 obstetrical cases were received during the year. Six patients were moribund on admission and, including these, there were 13 deaths during the year.

A Frank Confession.—Health Officer Allen of Cincinnati has received the following naive letter from a delinquent dairyman: "I have investigated, and find that my night men, instead of putting filtered water into the milk, used hydrant water. You see, I have been putting one gallon of water into every can of milk because the cows give so little milk now and it is so rich."

Personal.—Dr. William S. Bond, Hubbard, is recovering from an attack of pneumonia.—Dr. Daniel A. Berndt, Portsmouth, has been appointed assistant surgeon of the Norfolk & Western Railway.—Dr. Harry R. Geyer has been appointed workhouse physician of Zanesville, vice Dr. Herbert J. Sheppard, resigned.—Dr. Harrie B. Martin, Springfield, has returned after two years abroad.—Dr. Rufus D. Jacobs, Vinton, who has been seriously ill, is improving.

PENNSYLVANIA.

Smallpox at Bethlehem.—A case of smallpox was reported in South Bethlehem, March 11. The victim was a Russian immigrant, who landed in New York twelve days before. It is stated that she was allowed to land by the United States quarantine officials in New York, although she had no marks indicating previous vaccination.

Free Hospital for Poor Consumptives.—The report of the Free Hospital for Consumptives, White Haven, for the year ended March 1, shows that 540 patients were treated in the institution. There were but 2 deaths, one of these an employé of the institution and the other a female patient about to be discharged, both deaths being due to pneumonia. There were 114 patients in the sanatorium March 1, 1905, and 426 patients were admitted during the year. The patients discharged during the year numbered 268, while those leaving numbered 134. On February 28, 133 persons remained at the sanatorium. Of the total number of patients treated the report states that in 142 the disease was arrested; in 85 the condition was greatly improved; 83 were reported improved, and 76 not improved. During the year 165,820 quarts of milk were used, and 281,766 eggs, at a cost of \$7,192.64 for milk and \$5,765.51 for eggs. The receipts for the year were \$73,587.03, and expenditures, \$73,585.72.

Philadelphia.

Announcement.—At the March 28 meeting of the Philadelphia County Medical Society a symposium on sanitary and moral prophylaxis will be held, and the educational movement for the prevention of venereal disease will be fully considered. The meeting will be addressed by Dr. Prince A. Morrow of New York City.

Smallpox Appears.—One case of smallpox was reported during the week in a colored child. This is the first case of this

disease reported for fifteen months, and every effort is being made by the authorities to prevent the spread of the disease. All the houses in the immediate neighborhood were quarantined and fumigated.

Personal.—Dr. George W. McCafferty has been appointed to succeed the late Dr. David D. Richardson as resident physician of the State Hospital for the Insane, Norristown.—Dr. Clarence A. Veasey has returned from a visit to southern California.—The report that Dr. J. C. McCracken, who represents the University of Pennsylvania in China, was injured in the recent riots, is unfounded.

Examinations for Internships.—The following hospitals have announced the dates of their examinations for resident physicians: St. Joseph's Hospital, Philadelphia, May 1, six vacancies to be filled; term of service, sixteen months. Methodist Episcopal Hospital, Philadelphia, April 12, and Allegheny General Hospital, simultaneously in Philadelphia, Pittsburgh and Ann Arbor, Mich., April 7, at 9 a. m.

Addresses. Dr. Richard Hunt, Washington, D. C., addressed the Pathological Society of Philadelphia, March 22, on "Studies in Metabolism in Relation to Alcoholism."—Dr. Casey A. Wood, Chicago, addressed the section on ophthalmology at the College of Physicians, March 20, on "Some Forms of Hereditary Cataract."—Dr. Philip P. Calvert addressed the Fortnightly Club of Mount Holly, N. J., March 12, on "Historical Sketch of the Discovery of the Deep Sea Animals."

Medical Staff of Widener Memorial.—The medical staff of the Widener Memorial Home for Crippled Children, which was formally opened March 3, will be composed of the following men: Surgeon-in-charge Dr. DeForest Willard; assistant surgeon, Dr. Edward B. Hodge, Jr.; visiting physician, Dr. Albert D. Ferguson; pediatric, Dr. Alfred Hand, Jr.; neurologist, Dr. William G. Spiller; ophthalmologist, Dr. G. Oram Ring; assistant ophthalmologist, Dr. Carl S. Williams; laryngologist, Dr. Francis R. Packard; dermatologist, Dr. Jay F. Schamberg, and pathologist, Dr. Robert L. Pitfield.

Medical Visits to Schools.—The report of the work of the assistant medical inspectors in the bureau of health during February shows that 5,985 visits were made to the public schools, in which 19,818 pupils were examined. There were 1,064 pupils excluded from school on account of illness, 553 of whom were girls and 511 boys. Of the number excluded 245 were suffering from measles and 118 from measles contact; 16 from diphtheria and 9 from diphtheria contact; 6 from scarlet fever and 6 from scarlet fever contact; 42 from chickenpox; 35 from acute conjunctivitis; 32 from ringworm; 100 from mumps, and 2 from erysipelas. The inspectors performed 121 vaccinations and, in addition, reported 3,143 children to their parents as being in need of medical attention.

Health Report.—The total number of deaths reported for the week reached 591, as compared with 633 reported last week, and 589 reported in the corresponding period of last year. The principal causes of death were: Typhoid fever, 26; measles, 19; scarlet fever, 3; whooping cough, 4; diphtheria, 16; meningitis, 2; consumption, 70; cancer, 25; apoplexy, 20; heart disease, 54; acute respiratory disease, 96; enteritis, 34; appendicitis, 5; Bright's disease, 43; puerperal sepsis, 5; suicide, 5; accidents, 16, and marasmus, 4. There were 448 cases of contagious disease reported, with 48 deaths, as compared with 357 cases and 46 deaths in the previous week. The number of contagious disease cases reported shows, therefore, a large increase over the previous week, particularly in diphtheria and typhoid fever, 117 cases of the former and 287 of the latter being reported, as compared with 77 cases of diphtheria and 231 cases of typhoid in the previous week.

Money for Charity.—At the meeting of the executive committee of the twenty-sixth annual charity ball the treasurer was authorized to distribute \$2,350 to each of the following beneficiaries: Hospital of the University of Pennsylvania, Jefferson Medical College Hospital, Howard Hospital and St. Timothy's Hospital.—By the will of the late Edward T. Dobbins the following institutions are named as beneficiaries: Women's Medical College Hospital, to endow a free bed, \$3,000; Women's Medical College, to pay tuition for the regular course of instruction in medicine of a young woman who can pass the necessary examination, preference being given to a graduate trained nurse, \$3,000; Burlington County Hospital, \$5,000; Philadelphia Home for Incurables, \$5,000; to maintain a scholarship at the Philadelphia College of Pharmacy, to be conferred on a New Jersey apprentice passing the highest preliminary examination, \$2,500; Christ Church Hospital, \$10,000, and Hospital of the Women's Medical College,

\$10,000.—As a result of an autograph auction book sale held at the Germantown Cricket Club \$800 was realized, which is to be donated to the Germantown Hospital.

GENERAL.

Gastro-Enterologists to Meet at Boston.—The ninth annual meeting of the American Gastro-Enterological Association will be held at Boston, June 4 and 5, 1906. The president's address, "The Mutual Obligations of the Surgeons and Internists in the Proper Development of Gastric Surgery," will be by Dr. H. W. Bettmann, Cincinnati.

Prevention of Yellow Fever.—In response to the request of a number of citizens of New Orleans, six surgeons of the Public Health and Marine-Hospital Service have been assigned to visit the parishes adjacent to that city to assist the state authorities in such measures as may be necessary to prevent a recurrence of yellow fever during the coming summer.

Cholera in the Philippines.—Dr. Heiser, chief quarantine officer at Manila, states in *Public Health Reports* that there is a gradual increase in the number of cases of cholera reported from the provinces. Many cases of the disease are occurring among the fishermen and others who are employed on the small craft which ply between the upper end of Manila Bay and the numerous rivers which lead into it from Bulacan and Pampanga provinces. The infected territory is lowland and marshy. The villages are built along the banks of the rivers on insanitary sites. If there is any considerable increase in the number of cases, the direct drainage into the rivers will no doubt soon infect them and then a more serious epidemic is to be expected. The eradication of the disease will be exceedingly difficult, and under the most favorable circumstances a number of months will probably elapse before the disease can be checked in these provinces.

Quarantine Regulations for Fruit Vessels.—Strict regulations are to be enforced regarding fruit vessels at foreign ports suspected of being infected with yellow fever. The captain or his representative is to be the only person allowed to land, and that only to enter and to clear the vessel, and then only in the daytime. No one from the shore is to be allowed to board the vessel, except customs officers and the agent of the ship. Fruit intended for shipment on vessels lying at docks is to be graded and payment made for it on shore or at the dock. Passengers must embark at the regular ports and must have been under observation by a United States sanitary inspector for at least five days prior to the departure of the ship. The vessel must not lie where the crew will be exposed to the danger of contracting yellow fever, and at ports where the vessels lie at wharves the vessel must be moved into the stream or at least 200 meters from the wharf before sunset, and not returned to the wharf before sunrise the following day, except at ports where previous permission has been obtained. Water tanks, water buckets and other collections of water about the vessels are to be guarded in such manner that they shall not become breeding places for mosquitoes. The destruction of mosquitoes aboard must be insured as far as possible by the simultaneous fumigation—two pounds of sulphur per 1,000 cubic feet, all openings closed for two hours—of all compartments which can be so treated without injury to the cargo. Pyrethrum powder may be substituted in the engine room at the option of the medical officer. The vessel is to sail immediately after this fumigation is completed. All baggage is to be rigidly inspected and the exclusion of mosquitoes assured. Fruit vessels plying between United States ports and fruit ports where yellow fever is known to exist will not be admitted to entry under the provisions of these special regulations until they have been not less than five days from the port of departure before being admitted to pratique at the quarantine station at the port of arrival. Fruit vessels without certificates of the United States sanitary inspectors at foreign ports and fruit vessels infected with yellow fever will be subject to the general quarantine regulations of the United States. Persons exposed to infection in unloading cargoes on to lighters shall be detained after such exposure, as provided for other persons exposed to yellow fever. Any officer of a fruit vessel detected in evading or violating these special regulations shall forfeit, for any vessel on which he may subsequently be found, or be engaged, any participation in the special privileges accorded by these regulations. Fruit vessels trading with any ports infected with yellow fever must carry a competent, qualified physician. Fruit vessels arriving with yellow fever on board, or having had yellow fever on board during the voyage will be quarantined. The personnel shall be removed, with the exception of the master, the living apartments thoroughly disinfected, the ves-

sel provided with a new crew, sufficient to care for her, and towed to the docks for the discharge of cargo. On completion of the discharge of cargo the holds are to be fumigated with sulphur and the vessel towed to the quarantine station to take on her crew before proceeding to sea.

FOREIGN.

Immunity of Lime Workers to Tuberculosis.—We are informed that a communication signed by more than a thousand physicians is to be presented at the approaching International Medical Congress on the subject of "Immunity to Tuberculosis of Workers in Lime and Gypsum Kilns." The *Siglo Medico* publishes an appeal for all physicians who have any experience in the matter to inform those getting up the article. Address Dr. G. Fisac, provincia de Ciudad Real, Daimiel, Spain.

Moritz Steinschneider.—The international journal devoted to the history of medicine and medical geography, *Janus*, in its issue for February, pays homage to the oriental student, Moritz Steinschneider, who reached the age of 90 March 30, 1906. He is still actively engaged as occasional assistant at the Berlin Royal Library. His researches on the pharmacology, toxicology, medicine and natural sciences of the Arabian and other writers during and just preceding the Middle Ages will be a mine of information for generations of scientists yet unborn.

Smallpox in India.—The epidemic of smallpox which began in Calcutta in December shows no signs of abatement. It is impossible to determine accurately the number of cases or deaths, as they are rarely reported to the health department. Hindoos of all classes are averse to hospital treatment of every kind, and they dislike to have any disinfecting operations carried on in their houses. They also look on smallpox as a very ordinary visitation. Because of these facts they not only do not report cases, but conceal them. It is estimated that there have been about 5,500 cases since December.

Medical Boycott in Italy.—Under the heading "Boicottaggio del Comune di Lentini," the *Gazz. degli Ospedali* for March 1 publishes an appeal from the president of the National Association of District Physicians. He calls on the presidents of the various local medical associations and the members to stand by Dr. L. Piazza, until recently district physician in the commune of Lentini. He has always conducted himself with honor and professional devotion, and his abrupt dismissal by the local authorities was an undeserved insult. The commune is now without a district physician, and it is proposed to boycott it until Dr. Piazza is restored to his position or reparation offered.

Recrudescence of Plague in Brazil.—Recently 11 fatal cases of plague have been reported in Bahia. The number of other cases is not stated. The outbreak appears to be a recrudescence and not new cases introduced from Rio de Janeiro or other Brazilian ports. During the week ending January 21, 2 deaths from bubonic plague were reported in the city of São Paulo. These cases appear to have occurred in individuals arriving there from other ports; one of these patients had lately been in the city of Rio. During the last three years sporadic cases have from time to time made their appearance in that city, but there has never been anything pointing to any infection of the city itself.

Medical Institutions Founded as Anniversary Presents.—As already mentioned, the emperor and empress of Germany announced some time ago that on the occasion of their silver wedding they would prefer not to have personal gifts made to them, but rather to have the occasion celebrated by endowments of charitable and medical institutions. Thirty cities have announced their intention of founding various institutions, representing a total expenditure of more than \$600,000. The list includes homes for convalescents, for infants, means to reduce infant mortality, hospitals for the blind asylums, sanatoria, etc. Several of the institutions are to be endowed by private individuals. Berlin has appropriated funds for a sanatorium for lung affections, for the model infant asylum, for a maternity, and for a "night nursery." The largest amount was given by Breslau—\$90,000—to found an infant asylum.

New Journal of Applied Hygiene.—The first number of a new French monthly, *L'Hygiène Générale et Appliquée*, has been received. It has been founded by Chantemesse, professor of hygiene at Paris, chief of the national sanitary service. Its aim is to popularize hygienic measures and record their successful application. The first number opens with a sketch by Chantemesse of the late epidemic of yellow fever in New Orleans, and the lessons to be learned therefrom. The second

article describes the workings of the course in hygiene, entitling to a diploma, recently organized at Lyons. Forty-nine persons are taking the course, including a number of pharmacists, architects, chemists, and teachers, as well as physicians and medical students. Requests have already been received for an evening course of lectures for persons employed during the day. Other articles are on the "House Book," and other topics connected with hygiene. The editors urge the readers to send in reports of successful stamping out of epidemics or of eradication of insanitary conditions, and to ask questions on any subject in the line of sanitation or hygiene. Replies by experts will be published in the monthly. 1. is issued by O. Doin, Place de l'Odéon, Paris. The subscription is 12 francs, or about \$2.40, including postage.

German Sleeping Sickness Commission to Africa.—The German government has appropriated about \$30,000 for the expenses of a scientific commission to study sleeping sickness in Africa. Robert Koch is to head the party, which will include Drs. Beck and Kleine, his assistants on his former trips. His wife will accompany him as usual. The party sails from Naples April 16, and expects to be gone a year and a half. In an address delivered recently in Berlin Koch described the history and onward march of sleeping sickness in Africa, where it has been known since the beginning of the last century. At first confined to the west coast, it has now spread to the north shore of Lake Victoria Nyanza, and is threatening the German possessions. He remarked that nearly a quarter of a million people had probably died from the disease, whole villages having been thus depopulated; on certain islands he found that the inhabitants had died to the last person. No remedy is known for the disease; the main hope is to exterminate the insect in which the germ breeds. This might possibly be accomplished, he said, by burning the undergrowth in its haunts. It is only a few months since Koch returned from a scientific trip to Eastern Africa, bringing back several new data in regard to trypanosoma infection and other tropical affections, as was mentioned in these columns on page 1885 of the last volume. His illustrated communication on the subject was published in the *Deutsche Med. Wochsft.* for Nov. 23, 1905, page 1865. A brief summary was given in these columns on page 236 of the current volume.

Official Postgraduate Instruction in Germany.—An imposing four-story building was dedicated in Berlin on March 1, which is unique in its design, its construction and its purposes. It owes its inception to the late Empress Frederick, who from her deathbed impressed on the authorities the importance of up-to-date training for practicing physicians. Within a year twenty-four local centers had been formed for postgraduate instruction, and more than a third of all the physicians of the realm had taken advantage of the courses offered. The importance of the mechanical arts for the development of medicine was being recognized more and more. The perfected microscope, the Roentgen equipment, etc., required technical skill of the physician in which he had not been trained. To meet these wants and centralize and economize efforts in this line, the building known as the "Kaiserin Friedrich Haus" has been erected by popular subscription, costing about \$400,000. The first floor is devoted to the permanent exhibition of medical and surgical instruments and appliances, medical electricity, optics and medical chemistry. On the next floor is a reading room, an assembly hall and a permanent exhibition of tropical medicine, models and other plastic reproductions for teaching purposes and more exhibits of optical and mechanical devices. The floor above is devoted to the exhibits which are to be loaned out to other postgraduate centers—traveling exhibitions. The upper floor contains lecture rooms and laboratories for clinical chemistry and microscopy, bacteriology and experimental therapy, and for Roentgen work and scientific photography in general. The reading room is to contain the medical journals of the world and a small collection of the latest manuals, atlases and illustrated compendiums. The assembly hall has 200 seats, with standing room for 40. Each seat has a small writing-table attachment, and the blackboards and tablets on the wall are arranged so that they can be raised or lowered instantaneously, leaving the calcimined wall free for the lantern views. The loan exhibits are not arranged for museum purposes, but any or all of the objects in them can be loaned to physicians, teachers, lecturers, etc., for instruction of the general public or special classes, as well as to physicians. Various persons, especially physicians, have donated the funds to equip certain parts of the establishment in which they are most interested. The funds contributed have not all been expended and remain as a permanent endowment. The state also aids in the support of the institution. The *Zeitschrift f. ärztliche*

Fortbildung, of which Dr. R. Kutner is editor, is the official organ of the "Äerztliche Fortbildungswesen," as the entire postgraduate movement is called. Its editorial office has been removed to the new building, Berlin NW. 6, Luisenplatz 2-4. The issue for March 1 contains an illustrated description of the ceremonies attending the opening of the house, as part of the silver wedding celebration for the royal pair, with a view of the building and diagrams of the various floors. Sir Felix Semon represented Great Britain at the ceremonies, Blondel, France, and von Gross, Hungary.

LONDON LETTER.

The Duration of the Medical Curriculum.

An important report on the duration of the medical curriculum has been presented to the Royal College of Physicians by the Committee of Management of the Conjoint Examining Board in England, consisting of Dr. F. Taylor, chairman, Dr. Norman Moore, Dr. E. Living, Mr. J. Langton, Mr. E. Owen and Mr. R. J. Godlee. In 1890, the duration of the medical curriculum was extended from four to five years. It was hoped that the additional years would lead to more thorough study of practical subjects before the final examination. In the opinion of most teachers, however, this result has not been attained, for, owing to the greater demands on the student's time by the accessory scientific subjects, less time is devoted to practical subjects than formerly. It has been suggested that another year be added to the curriculum or that the student be required to pass the preliminary scientific examination in chemistry, physics and biology before commencing his five years' education at a medical school. The latter proposal, at the instance of the council of the Royal College of Surgeons, was referred to the committee of management of the conjoint board. The committee thought it desirable to ascertain the present length of the curriculum and how long it takes the average student to pass all his examinations. Analysis of the records of 400 students who obtained the diplomas of the conjoint board during the last two years shows that only 8.5 per cent. passed the final examination in five years and only 28 per cent. in less than six years; 71.5 per cent. took six years or more to pass and 34.5 per cent. took more than seven years. These figures are derived from a period when the regulations adopted by the Royal Colleges in June, 1904, had not come fully into operation. It is not improbable that under these new regulations a year may be added to the total period of study required before the final examinations. Probably the student will take from five and one-half to seven years in his medical education. This is a serious prospect for parents, and suggests that the present system is too much for the capacity of students. The committee of management of the conjoint board is of opinion, however, that any alteration in the present regulations is undesirable.

The Liverpool School of Tropical Medicine.

The report of the Liverpool School of Tropical Medicine again shows a record of much good work accomplished by this enterprising institution. A special research on trypanosomiasis was carried on in connection with the Congo expedition. This school has an advantage over the services of the staffs of the allied sciences, who are also working along this line in the Johnston laboratories, viz., the comparative pathology department, the veterinary school of the University of Liverpool, the bio-chemistry department and others. The Johnston laboratories of the University of Liverpool, where accommodation for the research work and teaching of the school is provided, were presented to the university by Mr. William Johnston. The buildings are on the east side of the celebrated Thompson-Yates laboratories which they adjoin. They are 90 feet long and 47 feet wide at their broadest part, and 34 feet wide at their narrowest. They contain four floors (connected by staircases and by an elevator), each devoted to separate departments of study and research, and under the control of various professors and lecturers. The basement is devoted to comparative pathology and is under the control of Dr. Annett. The ground floor is devoted to tropical medicine and is controlled by Professor Ross. The first floor is devoted to the study of experimental medicine, including experimental investigation in medicine, pathology, physiology, bacteriology and allied subjects, under the superintendence of the professors of physiology and pathology. One set of rooms is devoted exclusively to cancer research under the direction of Mr. J. E. S. Moore. The second floor is assigned to bio-chemistry, and is presided over by Prof. Benjamin Moore. The laboratories of tropical medicine occupy a room about

95 feet long and 35 feet broad. The main part of the room is devoted to students, but three chambers are partitioned off for the special use of individuals who wish to do research work in connection with tropical medicine and parasitology. There is accommodation for forty workers. The partitions of the room are fitted with cupboards, in which the museum of tropical diseases, which the school is now forming, is being arranged.

A Comparison of Fresh and Concentrated Infusions.

In order to determine whether concentrated infusions of drugs are, from a pharmaceutical standpoint as good as fresh infusions, Mr. E. H. Farr and Mr. R. Wright, examiners to the Pharmaceutical Society, prepared a series of official infusions and of corresponding concentrated infusions for purposes of comparison. Though they had a predilection for fresh infusions, they found that in the majority of cases the concentrated infusions were quite as representative of the drug. The concentrated infusions of broom, cloves, orange, and, to a less extent, buchu and roses, were inferior to fresh infusions. On the other hand, concentrated infusions of scenna and valerian were superior to fresh infusions. In the case of buchu there is the difficulty that the drug contains volatile oil and mucilage, both of which are therapeutically valuable. An alcoholic preparation does not dissolve the mucilage; on the other hand, a certain amount of volatile oil accompanies the mucilage into solution in an aqueous infusion. It is satisfactory to know that concentrated infusions in general fully represent the drugs from which they are prepared; but as in many cases they can be prepared only by the use of alcohol, they can not be considered therapeutically as equivalent to fresh infusions.

The King's Sanatorium.

The King Edward VII Sanatorium for Consumption, probably the best-equipped institution of its kind in the world, has just been completed, fifteen months after the laying of the foundation stone. It is situated at Midhurst, Sussex, on the South Downs, and has cost \$1,000,000. The architect, Mr. Percy Adams, worked in co-operation with Dr. Latham in designing the institution and visited various continental sanatoria. The situation is an ideal one. The sanatorium is 600 feet above the level of the sea, which is twelve miles away. To the north it is sheltered by pine woods. The grounds exceed 150 acres and around the building have been laid out as terrace gardens. The rooms are so constructed as to collect all the light possible and to afford no lodgment for dust. There is accommodation for 100 patients. The corridors are protected half-way up by spring doors at regular intervals, so as to allow of free ventilation but of no through draft. Each bedroom allows of 1,750 cubic feet of air per head. On each floor is a wide outside balcony facing the south for promenaders. All the walls have a sanitary surface, which is like porcelain but is not so cold as glazed tiling would be.

The Metropolitan Asylums Board.

The Metropolitan Asylums Board is one of the most remarkable institutions of its kind in the world. It controls all the fever hospitals of London as well as other institutions. The scope of the work embraces an area of twenty-one square miles and a population of 4,648,950. Among the institutions controlled by it are fifteen hospitals for infectious diseases, six lunatic asylums and a land ambulance service with eight stations and 171 ambulance vehicles; a river ambulance service possessing three wharfs and five steamboats; the training ship *Eamouth* with infirmary on shore; a "shipping home" with accommodations for 60 boys; six homes for defective children; three seaside children's and seven other homes for children. In all, the board is responsible for forty-nine homes and hospitals. There are two recent additions—a home for convalescent fever patients and an asylum for imbeciles. The general expenditure for the year amounts to over \$5,000,000. Over 5,000 persons are employed on the staffs of the institutions, and there are 7,000 inmates of the asylums and 8,000 patients at the hospitals.

The After-Care Association.

A useful institution exists in London, known as the "After-Care Association," the object of which is to help poor persons discharged from asylums for the insane. The annual meeting was held under the presidency of Sir Richard Douglas Powell. The report stated that the work of the association during the past year had been very encouraging. There were 288 cases before the council—176 women and 112 men. The number successfully helped was greater than in any previous year. The total receipts in 1905 were \$5,000. The object of the association, the only one of its kind in the United Kingdom, is to enable people who had been in asylums to take up a useful part in life. This is done

by grants in aid, by influencing the friends of the patients on their behalf, by providing cottage homes and by educating public opinion on a matter to which as yet little thought is given. The occupations open to these poor people are necessarily somewhat restricted, but they might be usefully engaged in horticultural and agricultural pursuits of a simple kind and in simple handicrafts.

The Medical Profession in 1906.

The number of physicians on the Medical Registrar in 1906 is 38,921, an increase of 545 on the number of 1905. The number on the London list is 6,438, against 6,397 in 1905; the provincial list for England gives 16,976 against 16,718 in 1905. In the overcrowded state of the profession it is satisfactory that the rate of increase of the profession has been diminishing in recent years and, according to the most recent statistics, appears to be less than the increase of the population. The population of England and Wales, according to the census of 1901, was 32,527,843. In the middle of 1905 the estimated population was 34,152,977, an increase of a little over 5 per cent. The increase in the number of physicians in the same period was 921, a little under 4 per cent. In London the rate of increase is considerably less than the rest of England, amounting to 2.3 per cent.

Action for Injuries Due to Treatment by the X-Rays.

A most interesting action has been tried in the courts for damages due to alleged negligent treatment with the x-rays. The defendants were a firm of chemists who were in the habit of administering the x-rays. The plaintiff was a solicitor's clerk who was suffering from locomotor ataxia and was gradually losing power in his legs. The use of the x-rays was advised by a physician, who sent the patient to these chemists, who were in the habit of administering the x-rays for him. The plaintiff alleged that his feet were placed so close to the bulb that it touched the soles and that they were deeply burned. For the defense expert evidence was given showing that it was impossible for the plaintiff to have received the injuries alleged. There were no burns on the abdomen or other parts of the body to which the rays were applied.

Identification by Teeth.

A remarkable case of identification by teeth has just occurred. Two colliers were charged with breaking into a store and stealing. It was found that some one had bitten a piece off the side of a cheese and left the marks of his teeth. Suspicion falling on the two men they were arrested, and one of them unwillingly allowed a cast of his mouth to be made, which was found exactly to fit the marks on the cheese. Expert evidence was given by a dentist, who stated that no two sets of teeth are identical. The prisoner showed much anxiety that his mouth should be examined to see if his teeth would fit the impression on the cheese, and when this was done it was found that since his arrest he had knocked out a stump. He was found guilty.

The Death Rate.

The quarterly return of the registrar general shows that the death rate in England and Wales during 1905 fell to 15.2 per 1,000, which was lower than in any previous year since the civil registration was established nearly seventy years ago. The death rate has been below 17 per 1,000 in each year of the present century, and during the quinquennium, 1901-5, the mean annual death rate has been but 16 per 1,000—a decrease of 1.7 on the rates of the preceding quinquennial periods. Since the period 1861-5 there has been a steady decline of the death rate from 22.4 to 17.7 in 1896-1900.

Death Under Chlorid of Ethyl in a Dentist's Chair.

The dangers of the recently introduced general anesthetic chlorid of ethyl are illustrated by the following case: A clergyman, aged 67, went to a dentist to have four teeth extracted. Chlorid of ethyl was administered to him by a physician, the brother of the dentist. An average quantity of the anesthetic (5 c.c.) is said to have been given, but whether or not exclusion of air was practiced is not stated in the report. When the fourth tooth was drawn the patient became very pale and died almost immediately.

New Departure in the Prevention and Treatment of Tuberculosis.

At the Brompton Hospital for Consumption, a scheme is about to be introduced by which the benefits and educative influence can be extended to others than those who apply for treatment. It is proposed to get in touch with all the housemates of any phthisical patient who presents himself, ascertain their condition, treat them if necessary, and in any

case arrange that they are taught to keep themselves free from infection.

The Birmingham Anti-Corset League.

Birmingham possesses a society which is devoted to persuading women that they are seriously injuring themselves by wearing corsets. The members of the society are enthusiastic and demonstrate their views whenever possible. In a little over two years they have increased their numbers to 90, two-thirds of whom are women. They claim that there is an increasing demand for reformed dress outfits.

Epidemic of Cerebrospinal Meningitis.

Surgeon-General Fliin has issued a report to the local government board for Ireland on a localized epidemic of cerebrospinal meningitis which occurred in Innisboffin Island and in the Cloggan district of Ireland, neighboring areas separated by ten miles of sea. The origin of the epidemic could not be traced. No cases of epidemic meningitis have been reported in Ireland since 1900.

Pharmacology

Report of the Council on Pharmacy and Chemistry.

The following report was presented to the Board of Trustees of the American Medical Association at its meeting held Feb. 2-3, 1906:

To the Board of Trustees of the American Medical Association. Gentlemen:—We beg to make the following report:

A conference of the Council on Pharmacy and Chemistry was held at Cleveland, Sept. 11-12, 1905, to which certain manufacturing pharmaceutical and chemical houses were invited to send representatives, as the Council desired suggestions and criticisms regarding the general plan of the work. Several physicians were also invited. The rules were thoroughly considered and finally adopted in the revised form as follows:

(The term "article" shall mean any drug, chemical or similar preparation used in the treatment of disease.)

RULE 1.—No article will be admitted unless its active medicinal ingredients and the amounts of such ingredients in a given quantity of the article be furnished for publication. The general composition of the vehicle, its alcoholic percentage, if any, and the identity of other preservatives, if present, must be furnished.

RULE 2.—No chemical compound will be admitted unless sufficient information be furnished regarding tests for identity, purity and strength, the rational formula or the structural formula, if known.

RULE 3.—No article that is advertised to the public will be admitted; but this rule will not apply to disinfectants and food preparations, except when advertised in an objectionable manner.

RULE 4.—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is indicated. The therapeutic indications, properties and doses may be stated. (This rule does not apply to literature distributed solely to physicians, to advertising in medical journals, or to vaccines and antitoxins.)

RULE 5.—No article will be admitted or retained concerning which the manufacturer, or his agents, make false or misleading statements as to geographical source, raw material from which made, or method of collection or preparation.

RULE 6.—No article will be admitted or retained of which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to their own value.

RULE 7.—Labels on articles containing "poisonous" or "potent" substances must show the amounts of each of such ingredients in a given quantity of the product. A list of such substances will be prepared.

RULE 8.—If the trade name of an article is not sufficiently descriptive of its chemical composition or pharmaceutical character, or is, for any other reason, objectionable, the Council reserves the right to include with the trade name a descriptive title in the book. Articles bearing objectionably suggestive names will be refused consideration.

RULE 9.—If the name of an article is registered, or the label copyrighted, the date of registration and a copy of the protected label should be furnished the Council. In case of registration in foreign countries, the name under which the article is registered should be supplied.

RULE 10.—If the article is patented—either process or product—the number and date of such patent or patents should be furnished.

The proposed book, "New and Non-Official Remedies," was also discussed, and it was tentatively agreed that it should be divided into two parts: Part I to consist of definite chemical compounds and simple pharmaceutical preparations, and Part II to comprise pharmaceutical mixtures. The plan of procedure referred to in the previous report was slightly elaborated. Since the conference the Council has considered the merits of various proprietary articles and has provisionally arranged and classified a large number of preparations which are considered worthy of recognition.

As indicated in the first report, the consideration of pharmaceutical mixtures—the vast majority of preparations belong to this class—proved a most difficult problem. Such a preparation is usually an ordinary mixture, made according to some physician's prescription, or after some well-known formula, modified in some way to disguise its identity, which has been placed on the market as a new preparation under a catchy or suggestive name, accompanied with extravagant therapeutic claims. Such preparations represent nothing new and involve no unusual skill in their manufacture. Their use is to be deplored, but if they are to be used a complete statement regarding their composition should be furnished to physicians. If this were done, and if all mystery regarding them were removed, their use would be very limited. It has been decided, however, that as many of these mixtures as conform to the rules will be placed in Part II of the proposed Annual, where, when similar, they will be grouped together and explicit reference be made to corresponding official preparations.

In this connection, however, it should be borne in mind that standard preparations, such as those in the Pharmacopeia and in the National Formulary—fully equal, if not superior, to the proprietary mixtures—are not only listed in the catalogues of the manufacturing pharmacists and chemists, but are also easily compounded by any experienced retail pharmacist.

While the Council is acting solely for the medical profession it has remembered that there is no antagonism between legitimate pharmacy and medicine, that there is a mutual dependence, and that, consequently, there should be a mutual co-operation between the Council and legitimate pharmacists and chemists. While most of the well-known firms have been co-operating with the Council, some seem to hesitate about doing so. The Council believes, however, that this hesitation comes from the fact that these firms have not fully appreciated the objects for which it is working, and which are believed to be as much in the interest of scientific pharmacy as in the interest of scientific medicine, and therefore, in the interest of all honest and legitimate manufacturers. The Council has endeavored to make it plain and convincing to manufacturers that in the present movement there is no intention to interfere with the proper exploitation of their products, and that it does not expect them to reveal the technical secrets involved in their processes of manufacture, but that it must insist that a truthful statement concerning the actual composition, or the medically active components, both as regards quantity and quality, must be given, together with tests for the identification and confirmation of such medicinal constituents.

Certainly as much to be deprecated, and more harmful in their effects than secrecy in composition, are the false and absurdly extravagant claims made by some of the otherwise reputable vendors of proprietary medicines. These claims equal and occasionally surpass the claims made by "patent-medicine" vendors in their advertisements in the newspapers. During the last few years this method of advertising has grown steadily worse, each advertiser apparently wishing to outdo every other in eulogizing his particular preparation. It has finally come to pass that a plain, truthful statement regarding the therapeutic value of an article is generally considered valueless, and even reputable firms have not hesitated to make statements in their advertising literature that have been far from the truth. Many manufacturers acknowledge this and excuse themselves by saying that others have done it and they had to. They acknowledge that loose methods regarding this feature of their business have been in vogue, largely due to unchecked competition by unscrupulous concerns. We presume there is no objection to a reasonable optimism on the part of the manufacturer; but obvious misrepresentations as to the therapeutic value are quite as dishonest as misstatements concerning the composition.

Another difficulty which the Council has experienced in its investigations of synthetics, mixtures and new remedies is found in the character of the names proposed therefor. It is a recognized principle that the name proposed for a remedy should not in any way mislead or deceive. If the name, therefore, is indicative of origin, the origin indicated

must be the real one. If, on the other hand, it is indicative of quality or property, the preparation must have that quality or property. Names which, by their ending or otherwise, are indicative of definite classes of compounds, or which in any part of the name show derivation from any particular source or the possession of any particular quality, must be true to the indication. Many preparations would be excluded from classification by reason of false or misleading names.

Investigation has shown that, as a rule, the preparations placed on the market by the regular manufacturing pharmaceutical and chemical houses are as represented; at the same time we regret to state that in some instances otherwise reputable firms have been offering to the profession articles that are not in accord with the claims made for them. The Council does not think it wise to be more specific at this time, believing that these preparations will be withdrawn, or that a true statement will be made regarding their character and composition.

Investigation has also shown that certain remedies are being manufactured under patents that do not conform to the specifications of the patents.

Attention is called to the fact that occasional statements respecting the nature of the substances occurring in the mixture or methods of preparation are made by manufacturers which seem to be contrary to the established principles of chemical reactions. As an illustration of this, it may be stated that the mere mixture of two substances, which may possibly react chemically, is not properly represented by supposing that complete chemical reaction has taken place unless that actually has occurred. This is especially true of certain very complex organic compounds, which, it appears, can not possibly be made by the preparation either of the pure acids or of the pure bases, but in which attempts are made to produce the combination by mixing the substances in the crude or unmanufactured state and assuming that the chemical reactions have taken place.

In these cases the statement of the manufacturer should convey the facts of the case and not the assumed reactions.

As was mentioned in the former report, an investigation of some of the so-called cod-liver oil preparations has led the Council to believe that some of these articles are fraudulent, since they contain no cod-liver oil, and that both the public and the medical profession are being greatly deceived in many articles that are placed on the market as tasteless or fat-free cod-liver oil.

These are the features of existing conditions that are retarding the work and delaying the approval for admission of some articles which otherwise might be accepted.

The Council recognizes that sufficient time should be allowed manufacturers to make the necessary changes in their labels, circulars and printed matter to conform to the rules. July 1, 1906, has been tentatively fixed as the date when compliance with the rules be required of all preparations. It is hoped that soon after that date it will be possible to issue the first edition of the proposed book, "New and Non-Official Remedies." Although the first number will not be complete, the annual revision will afford opportunity for the admission of such articles as may not at that time have been acted on.

It is hardly necessary to remind you that there is much detail work of a chemical nature connected with this work, and while some of the members of the Council have been devoting much time and labor in this direction it is believed that some of this detail work could be done much more satisfactorily if facilities for it were provided by you at the Association building. Therefore, the Council begs to suggest that, if it is possible to do so, a chemical laboratory be established by the Association with a competent chemist in charge. There is a great amount of work to be done, and it is work that must be continued if the medical profession in the future desires to protect itself from unscrupulous promoters.

The Council reiterates its former plea to those connected with hospitals for their co-operation in making clinical tests. There has been some co-operation of this nature, but not so much as the Council wishes it could have.

The prospects for a satisfactory solution of the various questions which confronted the Council at the beginning are

more favorable as time goes on; it wishes to state, however, that the ultimate success of the work must necessarily depend largely on its endorsement by the members of the American Medical Association and by the physicians in general limiting their support to those manufacturers who are supplying them with honest preparations in a legitimate manner.

The evident appreciation of the efforts of the Council by the medical profession of the country is highly gratifying and encouraging.

Respectfully submitted,

C. LEWIS DIEHL,
C. S. N. HALLBERG,
ROBERT A. HATCHER,
L. F. KEBLER,
J. H. LONG,
P. G. NOVY,
W. A. PUCKNER.

SAMUEL P. SAYLER,
J. O. SCHLOTTERBECK,
GEORGE H. SIMMONS,
TERALO SOLLMANN,
M. I. WILBERT,
H. W. WILEY,
JULIUS STIEGLITZ.

Members of the Council on Pharmacy and Chemistry, American Medical Association.

Amenoretts.

DODGE CITY, KAN., March 9, 1906.

To the Editor:—As a slight contribution to the fight against nostrums, permit me to relate a recent experience with a detail man for a proprietary preparation made at Topeka, Kan. This man entered my office and introduced himself as the representative of "The Amenoretts Company," and laid on my desk a small box containing a number of vaginal suppositories.

He informed me, with zealous kindness, that the suppositories would cure all "female complaints" and save many a woman from the butchery of the surgeon's knife. He helped himself to a chair and sat down to tell me of the wonderful results achieved by his remedy.

I always listen to these men whenever I have the time, and in this case I heard the familiar tale of restored health after all other means had failed.

He had given me a circular, and this is what I read:

"Amenoretts, The Great Cure for All Female Trouble." "Amenorrhoea, leucorrhoea, displacements, ulcerations of the womb, pelvic cellulitis, peritonitis, abscess, tumors, sterility, ovarian dropsy, menopause and piles."

"For amenorrhoea, leucorrhoea, irregular or suppressed menstruation and neuralgia of the womb, use every other night.

"For enlargement and falling of the womb, use every night for three nights, thereafter every other night until cured.

"Ulceration and catarrh of the womb, use every other night."

"Pregnancy period, use once or twice a week after second month.

"Change of life period, twice a week

"To correct non-development of young women, use three times a week.

"Conorrhoea, use every night for ten nights, or until there is a feeling of lassitude, indicating overuse of the remedy.

"Piles, insert one in the rectum every other night, pushing it well up," and so on.

I asked him what the Amenoretts were made of, and he referred me to the circular. And here is what I read:

"FORMULA OF THE SUPPOSITORY."

"The active principles of Pyroligneous Acid, Iodine, Pieric Acid, Boracic Acid, Quinine, Tetraborate of Soda, Glycerine and Oil of Theobromo."

"TABLETS."

"Pyroligneous Acid, Iodine, Boracic Acid, and Tetraborate of Soda."

I said: "There is no active principle of pyroligneous acid [wood vinegar], iodine, pieric acid or boracic acid. Quinine is itself an active principle of cinchona, while the active principles of sodium tetraborate [borax], and glycerin must have their abiding place in the vivid imagination of the writer of this very remarkable formula. But laying aside these non-essentials, I don't see any quantities specified."

"No," said my visitor, "we don't print quantities."

"Why not?"

He smiled at my evident innocence. "Because," he replied, "you'd take the formula across the street to your

local druggist and we wouldn't get to sell you any of our suppositories. Understand," he continued, "we don't sell these to the laity. We're strictly ethical."

I ignored his last remark; it contained food for reflection, and said: "I certainly shall not buy of you unless I know not only what substances are incorporated in the suppository, but how much of each substance. And I think too much of my patients to experiment on them with such a product. Are you a physician?"

He said that he was not.

"Well, if you were a physician, how do you suppose that you would feel if a man, not a doctor, should come into your office and volunteer advice with regard to the treatment of your patients with something he had to sell, the composition of which he refused to disclose?"

Not being a physician, he didn't know how he would feel under such circumstances. I asked him if he had any difficulty in getting rid of his samples. He said that there was not much, that occasionally a doctor declined them, but that did not often occur. He had recently sampled Kansas City, spending two weeks there, and during the following month he received orders for \$200 worth of the goods. And I am afraid that he told the truth.

What right has medicine to be called a learned profession when its votaries, in the use of remedies of unknown composition, exhibit a credulity that puts them on a level with the aboriginal medicine man, and far below that of the Christian scientist?

W. H. GRAVES, M.D.

Petition in Germany for Central Government Office to Examine New Remedies.

A petition has been presented to the secretary of state for the German empire asking the establishment of a central bureau whose office shall be to examine the new "patent" and proprietary medicines and apparatus put on the market for the cure of disease. The petition was signed by a large number of German physicians, manufacturing chemists, and others. The aim of the central bureau would be something like that of the Council on Pharmacy and Chemistry of the American Medical Association, except that it would be an official institution of the government. The petition cites the present abuses and the scandal of having nostrums and fake apparatus protected by government patents. It also describes with approval the work done by the mayor of Carlsruhe, who, on his own initiative, has had all the remedies which are advertised in the local papers, bill boards, or elsewhere, analyzed, and the reports published to warn the public of the danger of being swindled. The petition also refers to the way in which manufacturers continue a preparation under another name when it has been exposed. The petition owes its inception to the German Antiquackery Society.

"Patent Medicine" and the Lumberjack.

A writer in the *State Review*, published in Grand Rapids, Mich., in the issue of March 3, 1906, comments on the government's action in forcing those who retail certain alcoholic nostrums largely used for liquor to take out a liquor dealer's license, and says that this new policy on the part of the internal revenue service will affect the Michigan lumberjack in particular.

The writer says:

"In nearly all the small lumbering towns in the upper peninsula, and in the cordwood camps conducted in connection with the woods operations of the furnace companies, patent medicines of every kind are sold in immense quantities. The 'medicines' are not purchased by the thirsty individual for the purpose of alleviating physical disorder, but rather with the idea of satiating an unquenchable thirst for 'something strong.' In the cordwood camps of Alger County, where Finns and Scandinavians are employed, the most favored patent medicine is known as Hoffman's Drops, a mixture in which ether and other chemicals predominate, and produce the desired result of a stimulant much more quickly than Peruna or the average brand of stomach bitters. The 'Drops' are used almost to the exclusion of all other patent medicines, and are purchased by dealers in case lots, being as staple a commodity as flour and sugar, with the additional feature of yielding a larger profit to the dealer.

"It is not an uncommon sight in stores located near lumber or woodchoppers' camps to find from ten to fifty cases of Peruna or other patent-medicine bitters piled up in the store room. In some localities Hostetter's Stomach Bitters, Rock-candy Cough Cure or other brands are preferred, but in most instances Peruna is the general favorite with the lumberjack, and is bought more eagerly than any other. In a single carload of 'local' freight taken out of Marquette recently on a certain railroad were 150 cases of Peruna consigned to general stores at stations east of here. This single shipment was unusual, of course, coming as it did in one day, but it is given as an illustration of the amount of this 'medicine' consumed in the lumber camps for other than medicinal purposes in the immediate vicinity of Marquette. In the absence of liquor the men are willing to accept any kind of medicine that will 'have the desired stimulative effect.' Not all the men in lumber camps, however, are addicted to the habit of bitters tipping, but the majority of them will take almost any kind of nostrum when liquor is not obtainable."

Working the Doctor.

LA JUNTA, COLO., March 7, 1906.

To the Editor:—Some time ago I received from the Resinol Company, of Baltimore, a sample of their soap. Accompanying the sample was a postal addressed to their home office, soliciting the names of a few of my patients who were likely to be interested in resinol soap. Suspecting that this meant open advertising of the resinol ointment to the public, using our profession for the purpose, I sent the firm the addresses of four of my patients, telling my patients what I had done and asking them to let me see what was sent to them. In a few days all received samples of resinol soap, which, of course, it was perfectly proper for the firm to send, but mark the sly way of advertising resinol ointment direct to the public, using me as their unpaid agent for the purpose. I enclose two circulars. One refers to the soap and, while extravagant claims are made for the soap, there is nothing otherwise objectionable in the circular. The second circular, however, is a different proposition. This circular calls special attention to resinol ointment and contains testimonials from thirteen physicians and one dentist. How a layman can read this circular and these testimonials without being convinced that resinol ointment is the greatest thing on earth for about everything that could happen I do not know. Judging by the circular it certainly has the indorsement of the medical profession, and the layman is told by physicians that it is good for erysipelas, all kinds of local inflammation, such as burns, boils, mammary abscesses, eczema of all kinds, herpes zoster, pruritus ani, pruritus vulvae, hemorrhoids, scald head, cold sores, red and inflamed nose (although we are told in parentheses that it will not apply in this regard to the red nose caused by alcoholism), fetor of feet or offensive perspiration, or any morbid exudation.

I realize that this particular instance is only one of thousands that are going on all the time. Physicians are "worked" for a testimonial, and after they have given the testimonial they are then "worked" to distribute them to the public so that the public can buy the stuff direct; for why should they go to a doctor when all doctors apparently say that resinol ointment will cure all skin diseases, besides several other things.

Is it not about time that we physicians realized how we are being humbugged and utilized by these proprietary men?

E. GARD EDWARDS.

Some More Endorsements.

Dr. Oscar F. Mayer, City of Mexico, writes:

"My congratulations to the good work of the Council on Pharmacy and Chemistry, which is appreciated by an old Ph.G."

Dr. B. E. Miller, Albion, Ind., writes:

"I like that reform movement dealing with drugs, and feel deeply interested in the reports."

Dr. S. H. Landrum, Whitewright, Texas, writes:

"I am enthusiastic for clean pages and scientific text. . . . THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION gets better every year. Its absolute independence is its great advantage."

Dr. C. L. Upton, Shelburne Falls, Mass., writes:

"I commend most heartily the good work THE JOURNAL is doing in the exposure of the 'patent medicine' fraud and the equally bad or even worse proprietaries. I have stopped my subscription for several journals because of the advertising they carry. If all the members of our profession would make their protests in this way we would soon correct the evil so far as the medical journals are concerned.

"I wish to add a few words about Chamberlain's Colic, Cholera and Diarrhea Remedy. Two weeks ago I was consulted by a railroad telegrapher who had been taking his medicine for the past two years. He began it for a diarrhea and has become addicted to it. He now takes from two to four ounces nightly (he is a night man), and has become a complete nervous wreck. This case needs no comment of mine; it speaks for itself. Let the good work go on."

Dr. T. E. Keeler, Lebanon, Ohio, writes:

"Your crusade against 'patent' and proprietary medicines is doing great good. Publicity is what is needed."

ACTION BY MEDICAL SOCIETIES.

At a meeting of the Kaufman County (Texas) Medical Society, held February 6, resolutions were adopted indorsing the action of the American Medical Association in establishing the Council on Pharmacy and Chemistry, and commending the educational campaign being carried on by the *Ladies' Home Journal* and *Collier's Weekly* in exposing the subserviency of the press to the Proprietary Association of America and the methods of this organization in exploiting remedies. The resolutions also condemned the prescribing of preparations of unknown composition.

At a meeting of the Bucks County (Pa.) Medical Society, held February 14, resolutions were adopted indorsing the stand that has been taken against nostrums and "patent medicines" by THE JOURNAL of the American Medical Association, *Collier's Weekly*, the *Ladies' Home Journal*, the *Druggist's Circular*, the *Farm Journal*, and other publications, and approving the work of the Council on Pharmacy and Chemistry in exposing the nature of many much lauded preparations, and recommending physicians to refrain from prescribing these remedies and from subscribing for or contributing to any medical publication under the control of nostrum manufacturers and vendors. The society also approved the bill to regulate the manufacture and sale of proprietary remedies drafted by the *Ladies' Home Journal*, and suggested that a national commission be created to investigate remedies and to pass judgment on their therapeutic value.

Similar resolutions were passed by the Rhode Island Medical Society, and the Lenawee County (Mich.) Medical Society.

At a meeting held February 21 the New Haven Medical Association decided to appoint a chemist to analyze secret and "patent medicines," provided it can be done without expense to the association.

At a meeting of the Madison County (Texas) Medical Society, held March 13, the following resolutions were adopted:

WHEREAS, The American Medical Association, through its Committee on Pharmacy and Chemistry, is making a heroic and much-needed war in defense of the decency and dignity of American medicine for the benefit of the people of the United States against the corrupt, unscrupulous, avaricious and shameless system of nostrum prescribing, advertising and selling; Therefore be it

Resolved, That the Madison County Medical Society heartily approves the work already accomplished by said Committee on Pharmacy and Chemistry and hopes for a continuance of same.

Resolved, That it condemns the slovenly, ignominious, unscientific and fraudulent practice of prescribing and advertising secret remedies of any kind, whether designed for the use of physicians or the public.

Resolved, That the bill, republished in the March (1906) number of the *Texas State Journal of Medicine*, under the caption "Mr. Bok's Patent Medicine Bill," meets with the approval of the society.

Resolved, That the delegates to the next meeting of the Texas State Medical Association are hereby instructed to have these resolutions read to that body and to ask for proper consideration.

At a meeting of the Evanston Branch of the Chicago Medical Society resolutions were adopted endorsing the work of the Council on Pharmacy and Chemistry of the American Medical Association, and urging that the present campaign of publicity be continued unremittently. The society also urged members to refuse to sanction in any way the use of any remedy the formula of which is not definitely known, and recommending the careful investigation of the methods of false advertising carried on by so-called medical specialists whereby the public is defrauded, and recommended that in this case also a campaign of publicity be inaugurated.

Medical Legislation

Governmental Department of Health.

Dr. M. W. Gray, Secretary of the Oakland County (Mich.) Medical Society, informs us that at a regular meeting of the society at Pontiac, March 13, 1906, the following resolution was passed:

WHEREAS, The public health problems of this country are of strictly fundamental importance and underlie success in agriculture, manufactures, commerce and every other branch of human activity as was shown in Cuba, where successful military operations depended on the work of the sanitary corps; as was shown in New Orleans, where the commerce of a city and of a great section of the country was paralyzed pending the suppression of an epidemic, and is being exemplified by the brilliant achievements of Colonel Gorgas in the Isthmus of Panama, where the gigantic operations of engineering stand at rest until successful sanitation makes their prosecution possible. Therefore, be it

Resolved, That it is the sense of the Oakland County Medical Society that a department of health, with representation in the Cabinet of the President, ought to be established, such a department to embrace an expansion of the present Public Health and Marine-Hospital Service, with the addition of other public health agencies now existing and in operation in other departments of the government, together with such other agencies and functions as may best subserve the public welfare.

The Vermillion County (Illinois) Medical Society, at its meeting at Danville March 12, with a membership of seventy-one representative physicians, voted unanimously in favor of the creation of "A Department of Public Health with Representation in the Cabinet."

The Society also voted unanimously in favor of all the subjects recently referred to the auxiliary committee, with the exception of "The Bill to Restore the Canteen in the Army," which received a unanimous opposition vote.

Bills in New Jersey Legislature.

During the present session of the legislature of the state of New Jersey a number of bills have been introduced which are of interest to the medical profession. One provides for a laboratory for the manufacture of diphtheria antitoxin and for its free distribution through local boards of health. Provision is also made for the appointment of sanitary inspectors, health officers and statisticians for the bureau of vital statistics. An appropriation of \$20,000 annually is asked for to insure the securing of pure foods, drugs, medicines, etc.

The most important bill is one providing for the regulation of the sale of drugs and for the inspection, analysis and regulation of their manufacture. We quote section one in full: "No person shall manufacture, sell or offer or expose for sale or give away any proprietary medicine or other medicinal preparation containing alcohol, opium or any of its preparations, its alkaloids or their derivatives, nux vomica and its alkaloids and their derivatives, digitalis, chloroform, cannabis indica, chloral or any of its derivatives, bromids, cocaine or any of its salts, eucain or any of its salts, acetanilid, antipyrin, bromoform, exalgin, holocain, phenacetin, phenocoll, sulphonal, trional, veronal or any other hypnotic, anesthetic, analgesic or cordiae, circulatory, respiratory or nerve depressant unless the same shall have plainly and conspicuously stamped or printed on the bottle, box or receptacle containing the same, or on the label affixed thereto, and also on the outside wrapper or package, if any, and also in the inside wrapper and on all circulars accompanying said medicine or medicinal preparation and relating to it, if any, a true statement of the percentage of alcohol and the percentage or proportion of each of the other above-mentioned or described drugs contained in each bottle, box, receptacle or package of such medicine or medicinal prepa-

ration. Such information shall be stamped or printed in antique or gothic type, easily to be read, of a size not smaller than that known as ten-point, and so displayed as to be conspicuous. Where alcohol is used as a solvent, vehicle or preservative, or for any other purpose, it is to be deemed as contained in the medicine or medicinal preparation within the meaning of this act, and the drugs above mentioned or specified shall be described by their common or English names."

The term medicinal preparation as used in the bill is intended to include every preparation or combination or mixture of drugs, or of drugs with substances which are not drugs, when such preparation is said to have medicinal properties or to be a remedy or medicine or cure or food, or is intended to be used for medicinal purposes. The act does not apply to preparations intended solely for external use.

The Patent-Medicine Bill in New York.

AN INTERESTING HEARING.

The senate and assembly committees on public health held a public hearing jointly on the Stevens-Wainwright Proprietary Medicine Bill (Senate No. 258, Assembly No. 456), in the capitol at Albany, N. Y., March 14.

This bill provides that proprietary medicines which contain alcohol, opium or any of its preparations, its alkaloids or their derivatives, strychnin, digitalis, chloroform, cannabis indica, chloral or any of its derivatives, bromids, cocain or any of its salts, eucain or any of its salts, acetanilid, antipyrin, bromoform, exalgin, holocain, phenacetin, phenocoll, sulphonal, trional, veronal or any other hypnotic anesthetic, analgesic or cardiac, circulatory, respiratory or nerve depressant, shall be so labeled as to reveal the presence and percentage of those ingredients.

Only seven persons appeared in opposition to the bill, viz., George L. Douglass, attorney for the Proprietary Association; Mr. Muir and Mr. Rogers, for the New York State Pharmaceutical Association; Mr. A. C. Searles, Mr. Peter Diamond and Mr. George Leanan, retail druggists. In behalf of the drug section of the New York City board of trade, Mr. Peters offered a substitute bill, of entirely different scope, viz., a bill to prohibit the sale of cocain, eucain, opium, morphin, heroin, chloral hydrate or any salt or compound of any of the foregoing substances, or any preparation or compound containing any of them, except on physician's prescription.

Two of the objections made to the Stevens-Wainwright bill had already been foreseen by the committee for safeguarding the sale of narcotics, under whose auspices the bill was introduced, and amendments had already been prepared to cover the objections, viz. (1) that to guard against injustice arising from the possibility of errors in analysis, the results of analyses should not be published by the State Department of Health until after thirty days' notice to the manufacturer. (2) The other objection was against the general descriptive words intended to cover new variations of coal-tar derivatives. The proposed amendment is to strike out those words and insert a provision authorizing the State Board of Health to add to the drugs enumerated in the bill, from time to time, as it may deem necessary for the protection of the public health. This is in accordance with the powers already conferred by statute on the State Department of Health with reference to additions to the poison list.

Mr. Douglas, for the Proprietary Association, argued that the bill meant "destruction, not regulation." He received his answer later, that such an assertion was tantamount to an admission that many of the preparations on the market which he was employed to defend were of such a nature that the public would refuse to buy them if it knew their contents.

He argued that the bill discriminated between proprietary preparations and medicines listed in the Pharmacopoeia, that a Pharmacopoeia preparation might contain 90 per cent. alcohol and be sold without labeling, while proprietary medicines which contained a small amount of alcohol, for example, 5 per cent., would come under the law. The obvious answer was made that the object of the bill was publicity. The ingredients of Pharmacopoeia preparations are known and they are properly excepted from the operation of the bill, as there is no desire to interfere with legitimate drug business.

Mr. Douglas argued that the bill was intended to prejudice the public mind against proprietary medicines; that alcohol was necessary as a solvent and to prevent freezing and precipitation. That proposition was met by a statement that the bill does not prohibit the use of alcohol nor attempt to limit its use or to condemn or in any wise criticize the use of alcohol, but simply provides that its presence shall be made known.

Mr. Douglas laid great emphasis on the fact that the users of proprietary medicines were not there advocating the bill, but Mr. William A. Jenner disposed of this argument effectively by reminding the committee that the users of those remedies were ignorant of their contents, and that while they were not there asking for legislation, neither were they present to oppose it.

A. A. Seymour, secretary of the State Department of Health, said he represented the commissioner of health. He advocated the bill. Said the department desired it and would enforce it.

The importance of the subject was well attested by the presence of so many distinguished men in favor of the bill, as follows: Mr. William A. Jenner, Dr. A. Jacobi, Dr. W. Gilman Thompson, Dr. Egbert Le Fevre, Dr. Arthur T. Root (representing the New York State Medical Society); Dr. Wisner R. Townsend, Dr. Albert Weston, Dr. Arthur T. Holding (Albany County Medical Society), William Jay Schieffelin, Ph.D. (of Schieffelin & Co., manufacturing druggists), Samuel Hopkins Adams (of *Gallier's Weekly*), Rev. Hervey Wood (representing National Temperance Society and delegated to represent all the Baptist organizations in the state), Mrs. Frances W. Graham (president New York State Woman's Christian Temperance Union, representing nearly 900 unions and about 26,000 members in the state), Rev. John M. Trout (delegated to represent all the churches of the Westchester presbytery), Homer Folks (delegated to represent the State Charity Organization Society), Edward T. Devine (delegated to represent the Charity Organization Society), Seth B. Robinson, Alfred L. Manierre.

Correspondence

Poison Ivy.

BUFFALO, N. Y., March 17, 1906.

To the Editor:—Referring to the discussion in regard to *Rhus toxicodendron* and *Rhus venanata* in your issues of January 27 and March 17, and intervening issues, I would like to make some observations and to ask some questions. I seem to be immune. When a little boy, spending the summer vacations on a farm, I repeatedly tried to poison myself by walking through patches of ivy barefoot, and even rubbing it into the skin and into abraded places, but failed in a number of trials in several summers. My object was to exchange the hygienic advantages and loneliness of the country for the more familiar disadvantages of the city. For a number of years afterward I did not hesitate to handle the plant freely, and was never poisoned. Since arriving at years of relative discretion I have avoided the plant as a matter of ordinary caution, but have not hesitated to walk through it, and have often touched it accidentally without harm.

In several summers' experience as physician at a boys' camp I never encountered a marked case of poisoning, although I have seen it produce urticaria-like wheals that promptly disappeared after washing with plain water. As a matter of precaution the boys were assembled at the beginning of each encampment and warned against the two poisonous rhoses, *Solanum dulcamara*, etc. Many cases of poisoning are due to confusion with Virginia creeper, *Ampelopsis quinquefolia*. A good way to impress the difference on children is to tell them that they can safely shake hands with the plant that has five leaflets, corresponding to their five fingers, but not with the three-leaved plant.

I have known of bad cases of poisoning due to the use of *Rhus toxicodendron* in place of toilet paper, and one of my friends was terribly poisoned in winter by a homeopathic physician who ordered the tincture in a liniment for some form of rheumatism.

Can anyone state from actual experience whether poisoning occurs from conveyance by wind, and whether dermatitis tends to occur a year later without fresh exposure? Both of these claims seem absurd, and yet I am credulous enough to accept any statement, however absurd, if it can actually be proved—and some things that have seemed absolutely absurd have been proved.

A. L. BENEDICT, M.D.

CINCINNATI, OHIO, March 16, 1906.

To the Editor:—In the current issue of THE JOURNAL A. W. Balch, Washington, passed assistant surgeon, United States Navy, takes exception to my article on "Dermatitis Venenata," abstracted in THE JOURNAL. He says that while I have had *Rhus toxicodendron* poisoning twice he has had it eighty times. He queries: "Is it possible that the work of Pfaff is not yet known to the profession?" Had he read the original of my article, not the abstract, he would have seen full reference to Pfaff and his work. I should be pleased to read Dr. Balch's experiences with his eighty cases of poisoning from *Rhus toxicodendron* more fully written up.

E. S. MCKEE, M.D.

Quinin in Pneumonia.

NEW RICHMOND, OHIO, March 16, 1906.

To the Editor:—In 1874 I read, at a meeting of the American Medical Society in Cincinnati, my translation of an article from "Volkmann's klinische Vorträge," written by Jurgenson in 1872, in which he advocates the use of large doses of quinin in the treatment of pneumonia in conjunction with cold water baths. He gave from 25 to 40 grains at one dose, or if this was not advisable owing to an idiosyncrasy of the patient, he divided the dose in three or four equal portions, giving each at intervals of fifteen or twenty minutes, but so that the entire quantity was taken within an hour, or the reduction of temperature would not take place. I followed out this quinin treatment for two years, but found that it did not influence the course of pneumonia either favorably or otherwise, and it was often followed by such unpleasant symptoms of cinchonism that I desisted, and have not used the method since.

R. F. ERDMAN, M.D.

Staining of Conjunctiva by Argylol.

DOVER, N. H., Feb. 28, 1906.

To the Editor:—In a pamphlet sent out by the manufacturers of Argylol I find the following statement: "Argylol is the only silver salt that does not permanently stain the conjunctiva. It may be used with safety by patients themselves, as often as required."

Last week a patient appeared in my office who had been using a 10 per cent. solution of Argylol in the left eye for nearly a year. It was originally prescribed by a competent oculist, but, of course, with the intention that it should only be used for a short time. I took pains to hunt up the original prescription to be sure that it was Argylol.

In this case the bulbar conjunctiva, the caruncle, and the lining of the lid were as badly stained as from the prolonged use of a solution of nitrate of silver.

LOUIS W. FLANDERS.

The Pure-Food Bill Board of Experts.

ANN ARBOR, MICH., March 18, 1906.

To the Editor:—Your editorial stricture on the provision in the amendment to Section 9 of the Hepburn bill providing for the appointment of a board of experts to pass on the wholesomeness or unwholesomeness of preservatives would be just if it were true, but you were laboring under a misapprehension when you made your editorial statement. You say that the decision of the board is final and that there is no appeal to the courts or to the Secretary of Agriculture. This is all wrong. The board of experts is selected by the Secretary of Agriculture, and he is instructed by the law to appoint disinterested men; the Secretary fixes the compensation allowed members of the board and he may accept or reject their findings. The Secretary of Agriculture, and he alone, is given the authority to render decisions, and even his decisions are of no further value than "the guidance of officials charged

with the administration of food laws and for the information of courts." The statement that no appeal from the findings of the board can be made in the courts is too puerile to deceive anybody. In this country, no one, not even a food manufacturer, can be convicted without a trial, and Section 6 of the Hepburn bill makes it plain that before any preservative can be condemned it must be shown by the prosecutor that it is poisonous or deleterious to health, and in such a trial the prosecutor and the defendant both have the right to bring forth whatever evidence each is able to produce. The findings of the board of experts as provided for in the amendment to Section 9 in such a trial may benefit either the prosecutor or the defendant, and either certainly would have the right to support or to combat the findings of such a board. The sole object in the amendment is to provide the Secretary of Agriculture with the best advice possible. A committee of agricultural chemists constitutes a suitable body for determining methods and standards for chemical analyses, but agricultural chemists are not fitted by their specialty to determine the effects of preservatives on the human body. It seems unnecessary to argue this point farther.

V. C. VAUGHAN.

[With all due respect to Professor Vaughan, and recognizing the fact that he is thoroughly conversant with the subject, we are still of the opinion that the clause to which we objected last week is vicious. Our readers, however, may judge for themselves. The clause will be found in section 9 of the bill, which was published last week.—Ed.]

Miscellany

The Record of the House.—Each house in Paris now has to have its sanitary record. It is something like a bank book or portfolio for each individual house. The cover bears the subdivision, ward, street and number, and inside is a small plan of the house, with designation of all drain pipes, cess pools, etc. A loose sheet contains a description of the house, another contains a record of all the cases of communicable diseases that have occurred in the building, and the deaths from them, recorded as they occur. Another sheet records the disinfections done on the premises, with dates and causes. One or more sheets contain the record of the changes ordered by the bureau of hygiene, and the record of the compliance with these orders. One or more sheets further contain the results of sanitary inspection of the house. All these house books for one street are kept in an envelope or box, which has a record on the outside of the length and width of the street, number of houses, number of inhabitants, system of sewerage, water pipes, etc. P. Juillerat is chief of the bureau d'assainissement de l'habitation et du Casier sanitaire des maisons de Paris, and thus has charge of all this work. It is part of the police department. He describes its workings in the first number of *Hygiène Générale et Appliquée*, Jan., 1906, and discusses the expense of introducing a system of "house books" (casier sanitaire). A French law of 1902 ordered the formation of a bureau of hygiene in every town of 20,000 inhabitants or over, and he assumes that the officials of this bureau will do the work necessary for the compiling of the records of each house. The first expense will not be much more than twenty cents a house, and, once installed, the expense of maintenance will be trifling. The Paris authorities are much gratified at the way in which the system is working, although scarcely more than commenced there.

Fallacies in the Clinical Diagnosis of Gonorrhea.—Dr. G. Frank Lydston, Chicago, in a paper read before the Mississippi Valley Medical Association, said that the most dangerous type of infection of the female is that in which the external manifestations of the disease are absent or wanting. Gonorrheal urethritis in the female in the chronic form may present no secretion whatever on external examination. There may be little or no vaginal, cervical, or uterine discharge, and even such as there is may, on examination, fail to disclose the micro-organisms of gonorrhea. Notwithstanding this, the mucous glands may be involved, and under the influence of sexual excitement and the mechanical effect of coitus the

physiologic hypersecretion might convey to the meatus gonococci in abundance. The result is obvious. It seems to Dr. Lydston that it is impossible for a physician to state in any given case that a woman is free from infection. This is one of the strongest arguments against regulation and medical inspection of prostitutes. He entertained serious objections to the medical profession constituting itself an assurance society for the protection and promulgation of the social evil, but aside from this scruple there remains the fact that no reliable system of inspection or examination can be devised. In many cases of infection of healthy women by a latent gonorrhea of the husband, mixed infection is responsible, and the resulting pathologic condition in the female is non-specific. Its being non-specific, however, does not preclude the possibility of its becoming very serious. Dr. Lydston thinks that there are no tests which will enable the physician to give a positive opinion of the infectiousness of a given case of suspected latent gonorrhea. The clinical history in many cases is more important than the laboratory study of the case, and a careful combination of both methods of study is always essential. The physician should be as chary of assuming responsibility in advising a gonorrheic in the matter of matrimony as he should be in advising syphilitics under similar circumstances.

Injuries from Quack Practices.—The German Antiquackery Society has been diligently collecting instances of injury from quack practices that have come under the personal observation of its members. A list has just been published in the organ of the society, *Hygienische Blätter*, for February. It includes 91 cases of severe injuries, terminating fatally in 37. All the particulars are on file at the society's office. (See page 453.) In one case inflammation of the pelvic connective tissue was treated by a quack with daily energetic massage, resulting in fatal septicaemia. In another an ovarian cancer was said to be the pregnant uterus and was massaged until too late for its removal. In another case a tubal pregnancy was treated as "colic." An incipient cancer of the cervix, diagnosed by a physician with the microscope, was treated by a quack with hydrotherapy, massage and electricity until it became inoperable. In 27 cases of serious injury resulting from quack treatment of surgical lesions 9 resulted in death from septicaemia, including 1 death from general sepsis after a small wound on the finger had been treated with bone sawdust compresses for a long time. Two cases of incarcerated hernia resulted in fatal gangrene after being treated with sandbags in one case and with tea and water in the other. One individual succumbed to the effects of necrosis of the bone after a knee lesion had been long treated with a plaster spread on pieces of newspaper. Another with hip-joint affection, treated with vigorous massage, succumbed to a resulting meningitis. One child died in consequence of a salve having been rubbed into its eye by a quack, and another was rendered blind. The cases are numerous in which cancers were allowed to become inoperable by wasting time with irregulars. The editorial concludes with the remark that many persons who have come to grief in the hands of irregulars are ashamed to confess it to the physician to whom they apply afterward. Others exonerate the quack for the evil results of his practices. One case is known in which a woman had been treated for cancer and her testimonial to her cure was repeatedly published in the papers. Investigation showed that she had died long since of her cancer. The quacks included magnetopaths, nature healers, untrained midwives, bone-setters, barbers, herb doctors, etc. Four were druggists, some of whom diagnosed and treated by letter.

Analyses of Food Products in Kansas.—In the January *Bulletin* of the Kansas State Board of Health Prof. E. H. S. Bailey, state chemist, reports on adulterations. Having stated that many adulterants are harmless and are intended to increase the bulk or weight, at the customer's expense, while others are positively injurious, even poisonous, Prof. Bailey gives the results of his analysis of a number of samples of food, including flavoring extracts, preserved fruits, syrups, vinegar, nitrogenous foods, and baking powders. Of twenty-five articles tested he found twenty-one adulterated. He found a sample of "Puritan" brand extract of lemon to be destitute of oil of lemon and colored with a coal-tar dye.

Extract of vanilla, "Puritan" brand, "strictly pure," he reports contained none of the natural resins of the vanilla bean. "Silver Leaf" tomato catsup he found to be artificially colored and preserved with salicylic acid. He reports that a pint glass can of strawberry, "Orchard" brand preserve, was dyed red with a coal-tar dye and sweetened with glucose. A few small strawberries were scattered through it. "Absolutely Pure Canada Sap Maple Syrup" he discovered was cane sugar, a much cheaper article, and therefore a fraud on the customer. On analysis, two bottles of vinegar, one called "White Vinegar" and the other "Wine Vinegar," were found to be artificially colored distilled spirit vinegars. He reports that "The Kansas City Baking Powder, Absolutely Pure," and Shepard's "Economical Absolutely Pure Baking Powder," among others, were alum phosphate mixtures—perhaps pure in the technical sense, but not in the pure food sense.

Sanitary and Moral Prophylaxis.—In the *Boston Medical and Surgical Journal*, Feb. 8, 1906, Dr. William L. Holt urges the organization of a state society on venereal prophylaxis. A year ago in New York the American Society of Sanitary and Moral Prophylaxis was founded. Similar societies already existed in Germany, Holland, and other European countries. The object of these societies is to limit the spread of diseases which have their origin in the social evil, and to study the best means of every order, moral, legislative, social and medical to be employed in the prevention of these diseases. Dr. Holt suggests a campaign of popular education similar to the anti-tuberculosis campaign. The ignorance of the masses, especially young people, concerning sexual hygiene, is deplorable. A system of education, whether at home or at school, is incredibly stupid if it leaves our children in darkness concerning the laws governing sexual function and the ravages and terrible consequences of venereal disease. Tainted and degenerate offspring, sterility, and abortion are among the strongest agents for race suicide. There should be a state branch of the national organization in every state in the union. It is a service which the medical profession owes to society to spread all the scientific information possible concerning this delicate and important matter.

Treatment of Chancroid by Heat.—E. Weland of Stockholm, describes in *Wicner klin. therap. Wochenschr.* the method which he has employed for many years in the treatment of soft chancre by the prolonged application of warmth. He uses in the hospital an apparatus by which continuous circulation of water of regulated temperature is carried over the surface of the ulcer, which has been prepared by curetting away the sloughing material and thoroughly cleansed. A layer of moist cotton wool is first applied, then the lead tubes, which can be bent to suit the surface, then another layer of moist cotton, the whole is then warmly packed and secured with a bandage, which can be removed and renewed three or four times daily for the needs of urination and defecation. Two days' application may suffice, but it is better to keep it up a little longer, or if it is discontinued, to use warm boracic acid lotions until healing is complete. In private practice he allows the patient to make his own moist warm applications, either immersing the part in water at 50 C., or using frequently renewed applications of cotton soaked in water at 50 to 55 C. In either case the applications should be made at least four times a day and kept up for 15 to 20 minutes each time. After each one the ulcer should be dried and iodoform applied. The heat treatment has also been employed with good results for other foul sores (non-syphilitic) of the anogenital region. He has also used it in herpes tonsurans, but here a somewhat higher temperature is required on account of the somewhat greater resistance of the germs and spores.

Treatment of Typhoid.—As to medicines, the passing years have lightened my armamentarium greatly. The coal-tar antipyretics ought rarely to be used, for while their immediate effect may be good, their ultimate influence on the heart is bad. As Dr. Baruch of New York, the great hydrotherapist, has so facetiously put it, "their chief virtue is that they enable the patient to die with a normal temperature." On this account I prefer to reduce the temperature, when excessive, by hydrotherapy, using tepid or cool sponging if the temperature be between 101.5 and 103; the cold pack, cool affusions, or the

cool or graduated bath, if it be above 103. If the temperature is below 101.5 degrees, I believe the patient is better left undisturbed. Cold to the head, by ice-bags, Leiter's coils, or water compresses, is a valuable adjuvant. The value of these measures lies in four directions: First, lowering of temperature; secondly, as a nervous sedative; thirdly, general tonic effect on the heart; lastly, a lowered death rate.—Van Zant, in *Denver Medical Times*.

Tuberculosis Dispensary at Madrid.—V. Montenegro publishes an interesting series of notes in the *Siglo Medico*, Nos. 2626-8, taken during two years' workings of the Antituberculosis Dispensary at Madrid, with 1,000 tuberculosis patients. The majority were between 20 and 30 years old, or from 30 to 40, with over 2 per cent. under 10, and over 14 per cent. between 10 and 20 and between 40 and 50. About 66 per cent. of the patients had no tuberculous family antecedents. In 50 per cent. of all the patients the chest measure was equal to or more than half the height. In a number of cases of hemoptysis it proved to be the result of mitral stenosis. The lungs presented physical signs suggesting a tuberculous lesion, probably from compression of the lung by the dilated auricle, but repeated examination and radioscapy failed to reveal any tuberculous process. Such patients were generally women.

Double Nephrotomy for Kidney Stones.—M. Dezarlo describes some unusual circumstances attending the removal of four kidney stones weighing 45 gm., nearly 625 grains, from a woman of 28. The pains and discomfort were always in the left kidney, and a radiogram showed the four stones plainly. The operator did not see the radiogram and consequently he opened up the left kidney, finding it sound and free from stones. Examination of the radiogram then revealed that the stones were in the "silent" right kidney. All disturbances ceased after the nephrotomy, and nothing further was attempted for seven months, when recurrence of pain compelled intervention on the other kidney. The stones were found as shown in the radiogram and easily removed, with the rapid recovery of the patient. They consisted principally of calcium phosphate.—*Siglo Medico*.

Bars to Therapeutic Progress.—"In the domain of science every fact is a legal tender." Publicity is essential to progress. In medicine secrecy stultifies the calling and its followers, making it the only learned profession of the age which in so far, yet lingers in the embrace of the middle ages. Obviously no real therapeutic progress is possible where the prescriber and the world is informed only that the triumphant conduct of a certain case from death's door to convalescence has been wrought through the mediumship of "Puffer's Preposterous Painfugine," with the composition of which the enterprising manufacturer has not seen fit to entrust the complacent prescriber.—Jackman, in *Jour. of Medicine and Surgery*.

Sectarianism Harmful.—The realization that sectarianism is restrictive rather than helpful, that it divides and weakens, where union and strength are needed, has made the great majority of physicians in all ages desire a united profession. They have sought to avoid the use of any term that would imply a school or sect.—*Columbus Medical Journal*.

Association News

Member or Subscriber.

In the American Medical Directory, now being prepared for the press, members of the American Medical Association will be designated by the symbol *. There are a number of physicians taking *THE JOURNAL* as subscribers who are eligible to membership. Any one in doubt as to whether he is receiving *THE JOURNAL* as a member or as a subscriber can refer to the address label on the wrapper of his *JOURNAL*; if the month and year appear, such as "7-1-06," it means that the name is on the list of subscribers; if only the year "06," or no date at all appears, the name is on the membership roster. On advertising page 40 in this issue is an application blank, and any subscriber who is eligible, desiring to become a member, can be transferred to the membership roll by signing the

application, having it certified by the secretary of his state society and forwarding it, together with receipt for current year's subscription, or a remittance covering the same, to the American Medical Association, 103 Dearborn Avenue, Chicago.

Marriages

LAWRENCE H. BRUNDAGE, M.D., to Miss Martha Glotfelter, both of Xenia, Ohio, March 1.

OSWALD O. KAUFER, M.D., Newbern, N. C., to Miss Lilian May Taggart, at Baltimore, March 7.

JOHN U. CALHOON, M.D., Follansbee, W. Va., to Mrs. Elizabeth Witner, at Darlington, Pa., March 5.

HENRY KREUDER, M.D., New York City, to Miss Charlotte Louise Mascarc of Monroe, Mich., March 6.

EDWARD W. HANLON, M.D., Marysville, Cal., to Miss Mamie Kelly of Napa, Cal., in New York City, last week.

JAMES E. MADRUX, M.D., Sebastopol, Cal., to Mrs. Eugenia Cantel Towne of Petaluma, at San Francisco, March 12.

Deaths

Peter Van Pelt Hewlett, M.D. New York University, New York City, 1868; a member of the Essex District (N. J.) Medical Society; president of the Newark Medical Association in 1871 and 1872, and its secretary in 1869 and 1870; for several years a member of the Newark Pathological Society, and for a long time secretary and curator of the New Jersey Academy of Medicine; from 1868 to 1874 attending physician at the city dispensary; in 1873 attending physician and curator of St. Michael's Hospital; from 1879 to 1891 county physician; for many years visiting physician at the Newark City Hospital, and a member of the board of education from 1876 to 1883, died at his home in Newark, March 13, after an illness of nearly a year, believed to be malignant, aged 59.

Leonard Lawshe Skelton, M.D. Northwestern University Medical School, Chicago, 1889; professor of nervous and mental diseases at the Illinois Medical College; professor of internal medicine and physical diagnosis, Chicago Clinical School; professor of physiology, Chicago College of Dental Surgery; for several years a member of the staff of the Illinois Eastern Hospital for the Insane, Kankakee, died at his home in Chicago, March 14, from uremia, after an illness of three days, aged 42.

Alvin Thayer, M.D. Medical College of Louisiana, New Orleans, 1845; a member of the American Medical Association and of the Medical Society of the State of Pennsylvania; one of the best known physicians of Erie, and a member of a distinguished family of physicians extending back several generations; surgeon of the One Hundred and Forty-fifth Pennsylvania Volunteer Infantry during the Civil War, died at his home in Erie, March 11, after an illness of more than a year, aged 81.

Joseph Vincent Ricketts, M.D. Miami Medical College, Cincinnati, 1891; son of Dr. Girard Robinson Ricketts, and brother of Drs. Edwin S. and B. Merrill Ricketts of Cincinnati; a graduate of the United States Naval Academy, Annapolis; for several years a practitioner of Cincinnati, died at his home in Gas City, Ind., March 12, from pulmonary edema, after a brief illness, aged 39.

Elizabeth N. Bradley-Bystrom, M.D. University of Paris, France, 1887; formerly a practitioner of New York City, and a member of the New York Academy of Medicine, New York County Medical Association, New York Pathological Society and New York Neurological Society, died at her home in Dobbs Ferry, N. Y., March 9, from paralysis, after a long illness, aged 53.

Fordyce H. Benedict, M.D. Albany (N. Y.) Medical College, 1868; the dean of the medical fraternity of Weedsport, N. Y.; a veteran of the Civil War, and a member of the Cayuga County Medical Society, died at his home, March 8, from pneumonia, after an illness of three weeks, aged 61.

John B. Brown, M.D. Medical College of the State of South Carolina, Charleston, 1858; a member of the Medical Society of the State of North Carolina and of the Robeson County Medical Society, died at his home in Ashpole, N. C., December 31, after an illness of a month.

Grove Spooner Beardsley, M.D., medical director United States Navy, retired Jan. 2, 1900, with the rank of rear admiral; a member of the American Medical Association; a veteran of the Civil War and of the Spanish-American War, of Syracuse, N. Y., died in Atlantic City, N. J., March 8, aged 68.

Earl V. Rowe, M.D. St. Louis College of Physicians and Surgeons, 1893, of Gila Bend, Ariz., physician to the Southern Pacific Railway at that point, died in St. Mary's Hospital, Tucson, March 8, from tuberculosis, after an illness of four years, aged 32.

Shelby M. Dodson, M.D. St. Louis Medical College, 1864, postmaster of Santa Clara, Cal., for four years, and for many years a practitioner of Santa Clara and San Jose, died at his home in the latter city, March 4, after a long illness, aged 67.

Lauren T. Holland, M.D. College of Physicians and Surgeons, St. Joseph, Mo., 1882; coroner of Los Angeles County from 1889 to 1903; a veteran of the Civil War, died suddenly at his home in Los Angeles, March 6, from heart disease, aged 62.

Garrett D. Buckner, M.D. Jefferson Medical College, Philadelphia, 1864; for many years a practitioner of Petersburg and Tullahoma, Tenn., died at the home of his son-in-law in Nashville, January 21, after an illness of five months, aged 65.

William Harper Sherwood, M.D. Cleveland Medical College, 1855, one of the most prominent practitioners of Painesville, Ohio, died at his home in that city March 10, from pneumonia, after an illness of less than a week, aged 73.

Charles Edward Estes, M.D. Bellevue Hospital Medical College, New York City, 1868, a veteran of the Civil War, died at his home in Columbus, Ga., March 6, from ptomaine poisoning, after an illness of two days, aged 63.

Elijah L. Irvine, M.D. Willamette University, Medical Department, Salem, Ore., 1883, formerly a practitioner of Portland, Ore., was found dead, March 12, at his room in the Lick House, San Francisco, aged about 45.

James Hyser Hill, M.D. University of Louisville, Medical Department, 1850, assistant surgeon of the Thirtieth Missouri Volunteer Infantry during the Civil War, died at his home in Springfield, Ill., March 6, aged 81.

Benjamin R. Pearson, M.D. Medical College of Alabama, Mobile, 1881, of Montgomery, Ala., died at the home of his daughter in Richmond, Ky., from locomotor ataxia, March 11, after an illness of seven years, aged 56.

P. W. Blakeley, M.D. (Years of Practice, Illinois), 1878, for nearly twenty years a practitioner of Galatia, Ill., died at his home in Marion, Ill., March 4, from lung disease, after an illness of several months.

Charles W. Townsend, M.D. New York Homeopathic College and Hospital, New York City, 1893, of New York City, died from brain abscess at the Hahnemann Hospital, New York City, March 7, aged 37.

John W. Cooper, M.D. Hahnemann Medical College, Philadelphia, 1884, health officer for Cecil County, Md., died at his home in Elkton, Md., March 10, from nephritis, after an illness of several years, aged 56.

O. C. Gilliland, M.D. Medical Department of Columbian University, Washington, D. C., 1894, died at his home in Washington, March 1, from disease of the lungs, after an illness of more than a year, aged 36.

John Benjamin Humphrey, M.D. Kansas City Homeopathic Medical College, 1897, died in Colorado City, Colo., January 1, from tubercular meningitis, after an illness of twenty-one months, aged 36.

R. H. Darling, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1882, of Crystal Falls, Mich., died in St. Agnes' Hospital, Fond du Lac, Wis., from brain tumor, March 7, after a long illness.

Lawrence J. Gerold, M.D. Baltimore Medical College, 1901, assistant surgeon at the State Soldiers' Home Hospital, Bath, N. Y., died at that institution, March 15, from heart disease, aged 41.

Henry J. Fortlage, M.D. University of Bonn, Germany, 1884, a charter member of the Cleveland Academy of Medicine, died at his home in that city, March 8, after a protracted illness, aged 48.

Cassander Paddock, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1875, died at his home in Fresno, Cal., from cancer, after an illness of nearly two years, aged 56.

Jewett Williams, Jr., M.D. Detroit College of Medicine, 1890, died at his home in Adrian, Mich., March 9, from osteosarcoma of the pelvis, after an illness of nearly five months, aged 42.

Francois Xavier Perrault, M.D. Ecole de Medecine et de Chirurgie, Montreal, 1850, formerly superintendent of the St. Jean de Dieu Insane Hospital at Longue Pointe, Quebec, died March 6, at the Hotel Dieu, Montreal, after an illness of two weeks, aged 80.

A. D. Axtell, M.D. Columbus (Ohio) Medical College, 1854, of Youngsville, Pa., died at the State Hospital, North Warren, Pa., January 20, after an illness of two years, aged about 80.

Donald Kennedy, M.D. Kentucky School of Medicine, Louisville, 1894, formerly of Shelbyville, Ind., died recently from consumption in Denver, Colo., after an illness of five years.

Hugh Nelson, M.D. Washington University School of Medicine, Baltimore, 1867, died at his home in Minneapolis from disease of the liver, after an illness of two weeks, aged 63.

Charles Edward Prentiss, M.D. University of Georgetown, Medical Department, Washington, D. C., for many years assistant librarian of Middlebury (Vt.) College, died recently.

John L. Hebron, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1853, died at his home in Hot Springs, Ark., March 8, from angina pectoris, aged 73.

C. W. Higgins, M.D. Starling Medical College, Columbus, 1865, died at his home in Derby, Ohio, March 8, from cerebral hemorrhage, after an illness of five months, aged 69.

Hannah Christiana Golden, M.D. State University of Iowa, College of Homeopathic Medicine, Iowa City, 1882, died at her home in Vinton, Iowa, March 6, after a long illness.

Edward W. Derby, M.D. New York University, New York City, 1853, for more than fifty years a practitioner of New York City, died at his home, March 10, aged 77.

Emil Luck, M.D. Dartmouth Medical School, Hanover, N. H., 1885, died at his home in Paterson, N. J., March 8, from chronic nephritis, after a long illness, aged 37.

Cassius W. Brooks, M.D. University of Vermont, Medical Department, Burlington, 1870, died recently at his home in Enterprise, Kan., and was buried March 10.

Adam K. Leberknight, M.D. Jefferson Medical College of Philadelphia, 1878, died at his home in Orristown, Pa., March 4, after an illness of six months, aged 55.

Rush M. Brown, M.D. College of Physicians and Surgeons in the City of New York, 1882, died at his home in Cordele, Ga., January 11, after a long illness, aged 48.

James A. O'Malley, M.D. New York University, New York City, 1887, died at his home in Pittston, Pa., from pneumonia, after an illness of two weeks, aged 43.

William H. Loomis, M.D. Hahnemann Medical College and Hospital, Chicago, 1876, of San Francisco, Cal., died at his home in East Oakland, Cal., February 9.

W. J. Pyland, M.D. Vanderbilt University, Medical Department, Nashville, 1867, died at his home in Wimberly, Texas, March 4, after a lingering illness.

Nicholas J. Dorsey, M.D. University of Maryland School of Medicine, 1847, for many years a practitioner of Chicago, died in Joliet, Ill., March 11, aged 84.

William Gordon Niles M.D. Jefferson Medical College, Philadelphia, 1904, died from pneumonia in the Presbyterian Hospital, Philadelphia, March 16.

Thomas W. Bortree, M.D. Jefferson Medical College, Philadelphia, 1889, died at his home in Winwood, Pa., March 4, from heart disease, aged 46.

Frank J. Freel, M.D. Long Island College Hospital, Brooklyn, N. Y., died from pneumonia at his home in Stony Creek, Conn., March 9, aged 47.

Robert W. Duncan, M.D. University of Louisville, Medical Department, 1876, died recently at his home in White Mills, Ky., from paralysis.

Frederick C. Hennessy, M.D. Bellevue Hospital Medical College, New York City, 1897, died recently at his home in San Diego, Cal.

Francis H. Whittitt, M.D. College of Physicians and Surgeons, San Francisco, 1897, died recently at his home in Kernville, Cal.

J. Edgar Shepard, M.D. Missouri Medical College, St. Louis, 1883, died from heart disease at his home in Skidmore, Mo., March 4.

Lewis M. Webb, M.D. St. Louis Medical College, 1872, of Ewing, Ill., died at his home in that city, March 9, aged 59.

Queries and Minor Notes

MEDICINES CONTAINING ALCOHOL—SODIUM CHLORIDE ELIMINATION—SODIUM CACODYLATE IN CHOREA.

PLAINES, KANS., March 7, 1906.

To the Editor:—1. Can you give me any information pertaining to the sales of "patent" and proprietary medicines containing a certain percentage of alcohol, as I understand that the ruling of the Department of Internal Revenue will go into effect about April 1. I wish to know what medicines it will include.

2. What drugs will rid the system of hyper-sodium chloridia either chemically or mechanically, as advocated in certain forms of nephritis and epilepsy?

3. Has sodium cacodylate ever been advocated in treatment of chorea?

G. A. NICKELSON, M.D.

ANSWER.—1. The following preparations will be affected by the ruling referred to: Atwood's La Grippe Specific, Cuban Ginger, DeWitt's Stomach Bitters, Dr. Bouvier's Buchu Gin, Dr. Fowler's Meat and Malt, Duffy's Malt Whiskey, Gilbert's Rejuvenating Iron and Herb Juice, Hostetter's Stomach Bitters, Kudros, Pernina, Rock-candy Cough Cure.

2. There is no drug that will reduce the chlorid of sodium in the blood and urine, as the chlorid content of the blood and urine is dependent exclusively on the sodium chlorid or the hydrochloric acid given by mouth. Practical measures, therefore, for restricting the sodium chlorid excretion are to restrict the use of table salt to a minimum and not to give any hydrochloric acid as a stomachic. In epilepsy, a very good plan, and one that is commonly adopted, is to replace the sodium chlorid by sodium bromid. This can conveniently be done by placing a saltcellar containing sodium bromid at the disposal of the epileptic patient. The substitution of sodium bromid for sodium chlorid answers a double purpose. In the first place, it withholds sodium chlorid, and, in the second place, the bromin seems to facilitate the excretion through the bowel and the urine of accumulated sodium chlorid.

3. Cacodylate of soda is presumably the best symptomatic remedy for the treatment of chorea. It should be given in large doses, hypodermically. A very good mode of administering it is to inject half a Pravaz syringe full of a solution containing half a grain to the ounce, every four hours until the choreiform movements stop. Astonishing results are frequently witnessed within 24 hours. Effects of arsenic poisoning rarely become manifest. The attention should be called to the fact that the breath will assume a very strong odor of garlic very soon after the administration of the first dose.

CONTRACT PRACTICE.

KANKAKEE, ILL., March 19, 1906.

To the Editor:—In THE JOURNAL, March 17, page 824, I note communication by Dr. G. E. Holtzapple, York, Pa., and as a partial answer to his questions and acting on your suggestion, I submit the action taken by the Kankakee Physicians' Club in such matter. The following resolutions are self explanatory:

Resolved, That on and after the date of the passage of this resolution no member of this society shall accept the position of club, society or organization, company or corporation physician, or agree to continue to do any medical or surgical work for any club, society or organization, company or corporation, at a less rate than the regular or customary charges for like services rendered by other physicians, members of this club, for patients not members of such club, society or organization, company or corporation, and also that in no case shall any physicians agree to attend the families of the members of such club, society or organization, company or corporation at a less price than the regular rate of fee as fixed by this club.

Provided, however, that nothing in this resolution shall be construed as preventing any member of this club from attending the worthy poor at a less rate or rendering free service if necessary in such cases.

Any violation of this agreement shall be considered unprofessional conduct, and the punishment of any member violating the provisions of this act shall be fixed by the club.

Resolved, That no physician of this club make an examination for life insurance companies for a less fee than:

| | |
|---------------------|--------|
| For \$1,000 or less | \$3.00 |
| Over \$1,000 | 5.00 |
| Over \$5,000 | 10.00 |

Adopted Feb. 16, 1906. A. L. GAGNON, Secretary.

IS INSOMNIA EVER FATAL?

ELIANT, MICH., March 5, 1906.

To the Editor: Do you know of any cases that have ever been recorded in medical literature of persons whose death was caused directly by loss of sleep? Such cases are very rare, and on that account, if any have ever been recorded, one ought to be able to find some account of them. Where would one be most liable to find any literature on the subject?

R. W. RUTHERFORD, M.D.

ANSWER.—It would probably be hard to find a reported case of death from sleeplessness absolutely exclusive of all contributing factors. The causes that would prevent sleep would themselves be destructive of life, if continued. It would also be difficult to say that a case of insomnia was absolute. Men have been known to

sleep under the most unfavorable conditions, and, it is said, even in the briefest intervals of torture. Apparent sleeplessness, moreover, may exist to a very large extent, in some cases in some forms of insanity, especially the so-called circular type. Patients have been known to go apparently without sleep for days and even weeks at a time without any serious physical consequences. They probably did sleep some, but it could hardly be detected. The amount of sleep required varies greatly with the individual, and it is claimed that some distinguished men have lived for considerable periods with one, two or three hours' sleep out of the twenty-four. These cases, however, were not under conditions satisfactory for physiological experiments. It has been said that the Chinese have a punishment for criminals which consists in depriving them of sleep until death comes to their relief, but there are no scientific observations of such cases, as far as we are aware, and it would be hard to prevent the means used to cause insomnia from themselves contributing to the fatal result. It can be safely said that there are no recorded satisfactory observations of fatal absolute insomnia.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending March 17, 1906.

Davis, Wm. B., deputy surgeon-general, relieved from duty as chief surgeon, department of the Columbia, and will proceed to New York City, N. Y., for temporary duty at Medical Supply Depot.

Wolfe, Edwin P., Shockley, M. A. W., Shaw, Herbert G., and Haisell, H. S., asst.-surgeons, relieved from duty in the Philippines Division and ordered to proceed to San Francisco, and on arrival to report by telegraph to the military secretary of the Army for further orders.

Egan, Peter R., surgeon, ordered to report in person to Major General James P. Wade, U. S. Army, president of the Army retiring board at Governor's island, N. Y., for examination by the board, and on completion of his examination will return to station, Fort Hamilton, N. Y.

Woodson, Robert S., surgeon, leave of absence extended 10 days. Keefe, Frank R., surgeon, reports on 30 days' leave of absence from date, March 12, 1906.

Davis, William T., asst.-surgeon, on arrival in the United States, will proceed without delay to Washington Barracks, D. C., and report to the commanding officer of the General Hospital at that post for duty with Company "A," Hospital Corps.

Torney, Geo. H., deputy surgeon-general, in addition to his present duties, will, on the retirement of Col. John D. Hall, asst.-surgeon-general, report to the commanding general, Department of California, for duty as chief surgeon of that department, and also assume the duties of Medical Superintendent, Army Transport Service, at San Francisco.

LaGarde, Louis A., Ebert, Rudolph G., Purviance, Wm. E., surgeons, appointed members of a board of medical officers to meet at the call of the president thereof, at Manila, P. I., for the examination of such officers of the Medical Department as may be ordered before it to determine their fitness for promotion or advancement. May 8, 1906, to Major Louis A. La Garde, surgeon, president of examining board, Manila, P. I., for examination to determine their fitness for advancement: McAndrew, P. H., first lieutenant; Van Poole, G. McD., first lieutenant; Goss, Geo. H. R., first lieutenant; Van Dusen, James W., first lieutenant; De Witt, Wallace, first lieutenant; Thornburgh, R. M., first lieutenant; Grubbs, R. B., first lieutenant; Shortlidge, E. D., first lieutenant; Field, Peter C., first lieutenant; Shaw, Herbert G., first lieutenant.

Keefe, Frank R., surgeon, the leave of absence granted in S. O. 30, Department of California, c. s., for 30 days, is extended one month.

Dyes, Will L., asst.-surgeon, left Jefferson Barracks, Mo., with recruits en route to Presidio of San Francisco.

Hallock, H. M., surgeon, sick leave extended 30 days.

Whinnery, Jean C., dental surgeon, ordered from Fort Stevens, Ore., to duty at Fort Columbia, Wash.

Cassady, George H., dental surgeon, ordered, on arrival at San Francisco, to duty at the Army General Hospital, Presidio of San Francisco.

Stone, Frank P., dental surgeon, relieved from duty at the Army General Hospital, Presidio of San Francisco, and ordered to duty at Fort Sam Houston, Texas.

Lauderdale, Clarence E., dental surgeon, relieved from duty at Fort Sam Houston, Texas, and ordered to Manila, P. I., for duty in the Philippines Division.

Rhoades, Rex H., dental surgeon, relieved from duty in the Philippines Division, and ordered to the United States on the first transport after May 3, 1906.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending March 17, 1906.

Dunn, H. A., P. A. surgeon, detached from the naval proving ground, Indian Head, Md., and ordered to the Princeton.

Matthies, J. J., asst.-surgeon, detached from the Princeton, and Baker, M. W., P. surgeon, detached from the Naval Hospital, Washington, D. C., and ordered to the Naval Hospital, New York, N. Y.

Chapelle, F. D., acting asst.-surgeon, ordered to the Naval Hospital, Washington, D. C.

Langborne, C. D., surgeon, detached from the Denver and ordered home to wait orders.

Lumsden, G. P., surgeon, detached from the Olympia, when put out of commission, and ordered to the Minneapolis.

Norton, O. D., surgeon, detached from the Minneapolis and ordered home to wait orders.

Mummer, R. W., P. A. surgeon, detached from the naval sub-recruiting station, St. Joseph, Mo., and ordered to the *Deuce*.
Smith, W. B., asst. surgeon, detached from the *Olympia*, when put out of commission, and ordered to the *Hancock*.
Cone, I. F., and Flint, J., asst. surgeons, appointed assistant surgeons, with rank of lieutenant, junior grade, from February 28, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine Hospital Service for the seven days ending March 14, 1906:

Wickes, H. W., P. A. surgeon, granted leave of absence for two days, from March 16, 1906.
King, W. W., P. A. surgeon, granted leave of absence for one month, from March 12, 1906.
Goldberger, Joseph, P. A. surgeon, granted leave of absence for twenty-one days, from April 1, 1906.
Amesse, J. W., P. A. surgeon, directed to proceed from Ellis Island, N. Y., to New Orleans, for special temporary duty in the state of Louisiana.
Burkhalter, J. T., P. A. surgeon, granted extension of leave of absence for ten days from March 2, 1906.
Bogress, J. S., asst. surgeon, granted three days' leave from March 12, 1906.
Rucker, W. B., asst. surgeon, relieved from temporary duty at Viceroy Haven, Mass., and directed to proceed to New Orleans, for special temporary duty in the State of Louisiana.
Smith, F. C., asst. surgeon, directed to proceed from Detroit to New Orleans, for special temporary duty in state of Louisiana.
Goldsbrough, E. W., acting asst. surgeon, granted two days' leave of absence, from March 14, 1906.
Richardson, N. D., acting asst. surgeon, granted leave of absence for thirty days, from March 7, 1906.
Stensonson, Chas. W., Pharmacist, granted leave of absence for thirty days, from March 12, 1906.

BOARDS CONVENED.

A board of medical officers was to meet at the Bureau, Washington, D. C., April 2, 1906, to determine the fitness for promotion to the grade of surgeon of certain passed assistant-surgeons. Detail for the board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon-General J. M. Eager and Surgeon L. L. Williams, recorder.

A board of medical officers was to meet at Mobile, Ala., March 17, 1906, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: P. A. Surgeon Edward Francis, chairman; Acting Assistant Surgeon A. S. Taylor, recorder.

A board of medical officers was to meet at Chicago, March 13, 1906, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: P. A. Surgeon G. B. Young, chairman; P. A. Surgeon S. B. Grubbs, recorder.

A board of medical officers was to meet at the Bureau, Washington, D. C., March 15, 1906, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Assistant Surgeon-General J. W. Kerr, chairman; Assistant Surgeon J. W. Trask, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended March 16, 1906.

SMALLPOX—UNITED STATES

California: Los Angeles, Feb. 24-March 3, 5 cases; San Francisco, 6 cases, 1 death.
Delaware: Wilmington, March 3-10, 1 case.
Florida: Jacksonville, Feb. 24-March 10, 13 cases.
Georgia: Augusta, March 5-12, 1 case.
Louisiana: New Orleans, March 3-10, 20 cases.
Maryland: Baltimore, March 3-10, 6 cases.
Massachusetts: Somerville, March 3-10, 1 case.
Michigan: Detroit, March 3-10, 3 cases.
Mississippi: Natchez, Feb. 24-March 3, 2 cases.
Missouri: St. Louis, March 3-10, 4 cases.
North Dakota: Grand Forks County, Jan. 1-31, 1 case; McHenry County, 23 cases; Nelson County, 6 cases; Ward County, 1 case.
Ohio: Cincinnati, March 2-9, 1 case.
Tennessee: Memphis, Feb. 24-March 3, 3 cases; Nashville, March 3-10, 1 case.
Utah: Salt Lake City, Feb. 24-March 3, 16 cases.

SMALLPOX—FOREIGN.

Brazil: Rio de Janeiro, Jan. 21-Feb. 11, 13 cases, 3 deaths.
China: Hongkong, Jan. 27-Feb. 3, 2 cases, 2 deaths.
Ecuador: Guayaquil, Feb. 1-8, 10 deaths.
France: Paris, Feb. 17-24, 9 cases, 1 death.
Great Britain: Bristol, Feb. 17-24, 1 case; Leeds, Feb. 19-26, 1 case.
India: Bombay, Feb. 6-13, 9 deaths; Calcutta, Jan. 27-Feb. 3, 143 deaths; Karachi, Feb. 4-11, 12 cases, 1 death; Madras, Feb. 3-9, 22 deaths; Rangoon, Jan. 27-Feb. 3, 40 deaths.
Italy: General, Feb. 8-22, 40 cases.
Netherlands, The: Rotterdam, Feb. 1-8, 17-24, 1 case.
Russia: Moscow, Feb. 3-10, 16 cases, 2 deaths; Odessa, Feb. 10-17, 3 cases, 3 deaths; St. Petersburg, March 3-17, 15 cases, 2 deaths.
Spain: Barcelona, Feb. 10-20, 8 deaths.
Turkey: Alexandretta, Feb. 10-17, 20 cases, 4 deaths.

YELLOW FEVER—FOREIGN

Brazil: Rio de Janeiro, Jan. 21-Feb. 11, 19 cases, 6 deaths.
Ecuador: Guayaquil, Feb. 1-8, 17 deaths.
Honduras: Puerto Cortes, March 12, 1 case.
Mexico: Merida, Feb. 18-24, 1 case.

CHOLERA—INSULAR.

Philippine Islands: Manila, Jan. 6-20, 4 cases, 4 deaths; Provincias, 336 cases, 249 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Jan. 27-Feb. 3, 57 deaths; Rangoon, 2 deaths.

PLAGUE—INSULAR.

Philippine Islands: Manila, Jan. 6-20, 2 cases, 2 deaths.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Jan. 21-Feb. 11, 10 cases, 3 deaths.
China: Hongkong, Jan. 27-Feb. 3, 5 cases, 5 deaths.
India: Bombay, Feb. 6-13, 121 deaths; Calcutta, Jan. 27-Feb. 3, 31 deaths; Karachi, Feb. 4-11, 9 cases, 6 deaths; Madras, Feb. 3-9, 13 deaths; Rangoon, Jan. 27-Feb. 3, 25 deaths.
Peru: Callao, Jan. 26-Feb. 12, 1 case; Chicama Valley, Feb. 14-21, 1 case; Chilcayo, Jan. 26-Feb. 12, 5 cases, 1 death; Cholsica, 3 cases, 2 deaths; Mancusi, Feb. 14-21, present; Moche, 1 case; Mollendo, Jan. 26-Feb. 12, 4 cases, 3 deaths; Trujillo, 16 cases, 10 deaths.

Book Notices

URIC ACID. The Chemistry, Physiology and Pathology of Uric Acid and the Physiologically Important Purin Bodies, with a discussion of the Metabolism in Gout. By E. H. McGrudden. Paper, 328 p. Price, \$2.50 net. Cloth, \$3.00 net. New York: Paul B. Hoeber.

This little volume from the laboratory of physiology and chemistry of the Harvard Medical school, constitutes the most complete literary review of the uric acid question that so far has been published. The pure chemistry of uric acid and of the whole group of purin bodies, the solubility of uric acid and the urates, the physiology of uric acid, including its formation and decomposition in the body, the effects of drugs on the excretion and solubility of uric acid, and finally, its pathology and metabolism in gout and lithemia, are all very carefully discussed. The facts collected, therefore, represent practically all that is known in regard to the uric acid subject, and the author deserves immense credit for his diligent search through innumerable publications for the material that forms the basis of his book.

The conclusions that the author draws from his collected data, including some experiments of his own are, on the whole, sound. His avowed purpose is to rely on the arrangement of the facts themselves to bring out the explanation of the phenomena. This is a good plan, so far as it goes, but, unfortunately, the large and valuable field of clinical experience, or what may be called empiricism, especially in regard to the therapeutics of uric acid disorders, is not sufficiently included in the calculation. While we agree with the author that "rheumatic diseases and uric acid metabolism do not at the present time seem to be closely related," and while we indorse heartily his severe arraignment of Haig's theories and the many fallacies and inconsistencies inherent in the irrational use of many so-called uric acid remedies, we nevertheless can not without qualification endorse the statement that "the facts of chemistry and physiology do not furnish any scientific evidence for the alkali therapeutics of gout," nor can we agree with him when he says that uric acid is not an antecedent of uric in the destructive metabolism of proteins; for it most assuredly is at least one of the intermediary bodies between albumin and uric acid.

Particularly valuable is the chapter on the uric acid solvents; for the author shows most conclusively that most of them, in the very nature of things, are inert and useless. First, because uric acid can not be accused of producing the protean array of symptoms summarized under the name of uric acid diathesis, and, second, because these various remedies could not exercise appreciable effect either on the uric acid excretion or its precipitation in the tissues, even if uric acid were the *fons et origo malorum*.

The book is an exceedingly useful volume for both reference and connected reading; it is critical, but just, and should help clear up the mist of theory and false conceptions that obscure so densely our understanding of uric acid metabolism and of its significance, or better, lack of significance, in pathogenesis.

GAITANIC, FARADIC AND SINUSOIDAL APPARATUS. Pp. 132. Illustrated. For free distribution. Chicago: R. V. Wagner Company, 1906.

This is practically a catalogue, but besides a list of apparatus it contains much information of value to physicians interested in electrotherapeutics, information that evidently is furnished by one who thoroughly understands the subjects.

MATERIA MEDICA, PHARMACY AND THERAPEUTICS, including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, Minute Directions for Prescription Writing and Avoiding Incompatibility, also the Antidotal and Antazotonic Treatment of Poisoning. By S. O. L. Potter, A.M., M.D., M.R.C.P. Tenth Edition. Revised and in greater part rewritten. Cloth, Pp. 914. Price, \$5.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

This edition has been largely rewritten to conform to the new Pharmacopoeia; many new articles have been added and material considered obsolete or of slight importance has been omitted. The new matter includes a list of incompatibles for each drug, as well as descriptions of many comparatively new drugs, chiefly synthetics, which makes the book more valuable for practicing physicians. The articles on acetalin, acetophenitidin, acids, alkalies, animal extracts and several standard drugs have been rewritten. The general arrangement of the subjects is the same as in previous editions.

A MANUAL OF MATERIA MEDICA AND PHARMACOLOGY, Comprising all Organic and Inorganic Drugs which are or have been official in the United States Pharmacopoeia, together with Important Allied Species and Useful Synthetics. Especially Designed for Students of Pharmacy and Medicine, as well as for Druggists, Pharmacists and Physicians. By D. M. R. Culbreth, Ph.G., M.D. Fourth Edition. Enlarged and Revised, with 487 Illustrations. Cloth. Pp. 976. Price, \$4.75. Philadelphia: Lea Brothers & Co., 1906.

The popularity of Professor Culbreth's work is evidenced by the fact that four editions of the book have appeared within the last nine years. As a compendium of materia medica and pharmacology it will be found most useful to the student, both of pharmacology and of medicine, as well as to the practicing pharmacist or physician. It is concise and comprehensive and can be commended to physicians who desire a work of this character.

MEMORANDA ON POISONS. By T. H. Tanner, M.D., F.R.S. Tenth Revised Edition. By H. Lefmann, A.M., M.D. Cloth. Pp. 177. Price, 75c. Philadelphia: P. Blakiston's Son & Co., 1905.

New matter has been inserted in this edition of Tanner's manual without materially increasing the size of the book, which is convenient for carrying in the pocket. The subjects of general toxicology, corrosive poisons, simple irritants, specific irritants and neurotic poisons, including narcotics, anesthetics, intoxicants and drugs producing delirium, convulsions, paralysis and asphyxia are considered and the antidotes given.

State Boards of Registration

COMING EXAMINATIONS.

UTAH State Board of Medical Examiners, Salt Lake City, April 2. Secretary, R. W. Fisher, Salt Lake City.

ARIZONA State Board of Medical Examiners, Phoenix, April 2-3. Secretary, Ancil Martin, Phoenix.

CALIFORNIA State Board of Medical Examiners, San Francisco, April 2-3. Secretary, Charles L. Tisdale, San Francisco.

IDAHO State Board of Medical Examiners, Pocatello, April 3. Secretary, J. D. Conant, Jr., Genesee.

MONTANA State Board of Medical Examiners, Senate Chamber, the Capitol, Helena, April 3. Secretary, William R. Biddell, Helena.

NORTH DAKOTA State Medical Examining Board, Grand Forks, April 3. Secretary, H. M. Wheeler, Grand Forks.

OHIO Board of Registration and Examinations, State House, Columbus, April 3. Secretary, D. N. Kinsmann, Columbus.

MINNESOTA State Board of Medical Examiners, State Capitol Building, St. Paul, April 3-5. Secretary, O. E. Linjer, Minneapolis.

MISSOURI State Board of Health, Kansas City, April 3-5. Secretary, J. A. B. Adeock, Warrensburg.

RHODE ISLAND State Board of Health, State House, Providence, April 5. Secretary, Gardner T. Swarts, Providence.

GEORGIA Medical Examining Board (Regular), the Capitol, Atlanta, April 7. Secretary, E. R. Anthony, Griffin.

ARKANSAS State Board Medical Society, Little Rock, April 10. Secretary, J. P. Runyan, Little Rock.

MISSOURI State Board of Health, St. Louis, April 10-12. Secretary, J. A. B. Adeock, Warrensburg.

VIRGINIA State Board of Health, Parkersburg, April 10-12. Secretary, H. A. Barbee, Point Pleasant.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, D. C. April 12. Secretary, William C. Woodward, Washington, D. C.

ILLINOIS STATE BOARD OF HEALTH, Northwestern University Building, Chicago, April 18-20. Secretary, J. A. Egan, Springfield.

Arkansas Report Correction.—The report of the examination held at Little Rock, in January, 1906, in THE JOURNAL, Feb. 10, 1906, page 455, implies that a graduate of Tufts Medical

College and of the American Medical College failed. This applicant was a graduate of the American College of Medicine and Surgery, having attended Tufts for three years and the college from which he graduated for one year.

Nebraska February Report.—Dr. George H. Brash, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, Feb. 7-8, 1906. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 8, of whom 3 passed and 5 failed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|---------------------------------|---------|------------|------------------|
| College of P. and S. Chicago | | (1905) | 77.1 |
| Barnes Med. Coll. | | (1905) | 75. |
| Eclectic Med. Inst., Cincinnati | | (1872) | 89.2 |
| FAILED. | | | |
| University of Nebraska | | (1905) | 61.1, 62.7, 72.7 |
| Central Med. Coll., St. Joseph | | (1905) | 64.3 |
| Kansas City Homeo. Med. Coll. | | (1904) | 68.2 |

Pennsylvania Medical Examiners Appointed.—Governor Pennypacker has appointed the following new members of the State Medical Examining Board: Dr. Francis R. Packard, Philadelphia, editor of the *American Journal of Medical Sciences*, is appointed to take the place of the late Dr. Hiram McConnell, New Brighton. Dr. Henry Beates, Jr., Philadelphia, was reappointed. Dr. W. O. Koffer, Altoona, and Dr. S. J. H. Louthier, Somerset, were appointed in the places of Dr. C. W. Ewing, Harrisburg, and Dr. L. P. O'Neal, Mechanicsburg.—The following men were appointed by Governor Pennypacker on the Homoeopathic Medical Examining Board: Gustave A. Mueller, Allegheny; C. S. Middleton, Philadelphia; H. M. Bunting, Norristown.

Pennsylvania December Regular Report.—The State Medical Society of Pennsylvania reports the written examination, held at Philadelphia and Pittsburg, Dec. 12-15, 1905. The total number of applicants examined was 107, of whom 77 passed and 30 failed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|--|-----------------|--------------|--------------------------|
| Jefferson Med. Coll. (1904) | 75, 80.9, 86.2; | (1905) | 76.5, 78.5, |
| 78.7, 79.7, 81.2, 81.8, 82.7, 84.3, 85.1. | | | |
| Medico-Chirurgical Coll., Philadelphia, (1898) | 89.5; | (1902) | 83.6; |
| (1903) 82.9; (1904) 75; (1905) 75, 76.7; | | | 77.4, 77.8, 78.2, |
| 78.9, 80. | | | |
| Woman's Med. Coll., Philadelphia | ..... | (1903) 89; | (1905) 78. |
| Howard University | ..... | (1902) 80.5; | (1904) 81.5; (1905) 75.5 |
| University of Edinburgh | ..... | (1905) | 76.8 |
| University of Florence, Italy | ..... | (1899) | 75. |
| University of Kentucky | ..... | (1905) | 77.1 |
| Western University of London, Canada | ..... | (1905) | 76.4 |
| College of P. and S. Baltimore | ..... | (1904) 77.5; | (1905) 75, 75.1 |
| University of Pennsylvania, (1883) | 89.7; | (1902) 81.5; | (1903) 78.9, |
| 80.7, 82.8; (1904) 79.2, 81.6, 82.9, 83.8, 87.9; | | | (1905) 78.9, 87.3, 88.2. |
| Eclectic Med. Inst., Cincinnati | ..... | (1880) | 77.5 |
| Johns Hopkins University | ..... | (188) 84.2; | (1904) 80.9 |
| University of Louisville | ..... | (1903) 77.2; | (1904) 85.4 |
| University of Maryland | ..... | (1903) 77.8; | (1905) 78.5 |
| Harvard Med. Coll. | ..... | (1902) 88.9; | (1903) 80.5 |
| Kentucky School of Med. | ..... | (1905) | 75.1 |
| Baltimore University | ..... | (1901) | 75.2 |
| University of Virginia | ..... | (1904) | 83. |
| Georgetown University, Washington | ..... | (1899) | 84.3 |
| Western Pennsylvania Med. Coll. | ..... | (1904) 78.9; | (1905) 76.4, 80.2 |
| University of Naples, Italy | ..... | (1898) 77. | (1904) 77.7 |
| University of Padua | ..... | (1903) 77.2; | (1905) 76.6, 79.5, 85.8 |
| University of Ohio | ..... | (1892) | 76.2 |
| University of Tennessee | ..... | (1903) | 76.3 |
| University and Bellevue Hosp. Med. Coll. | ..... | (1901) | 84.7 |
| Columbia University | ..... | (1904) | 77.3 |
| University of the South | ..... | (1905) | 82.3 |
| Medical College of Virginia | ..... | (1905) | 77.3 |
| University of Cincinnati | ..... | (1905) | 75. |

| | | | |
|---|------------------|--------------|-------------------|
| FAILED. | | | |
| Medico-Chirurgical College, Philadelphia. | (1903) 65; | (1904) 47.9; | |
| (1905) 64.4, 70, 72.1. | | | |
| Louisville Med. Coll. | ..... | (1905) | 72.8 |
| University of the South | ..... | (1903) 71; | (1904) 72.3, 73.5 |
| Rush Med. Coll. | ..... | (1904) | 72.4 |
| Coll. of P. and S. Baltimore | ..... | (1905) | 60.5, 71.0, 71.9 |
| Maryland Med. Coll. | ..... | (1903) 93; | (1905) 52.4, 73.1 |
| Howard University | ..... | (1905) | 58.7 |
| Ohio Med. University | ..... | (1905) | 65.5 |
| Western Pennsylvania Med. Coll. | (1904) 68, 71.6; | (1905) | 68.7 |
| Starling Med. Coll. | ..... | (1908) | 74.1 |
| University of Turin, Italy | ..... | (1896) | 68.4 |
| University of Kentucky | ..... |  | *71.5 |
| George Washington University | ..... | (1902) | 71.7 |
| Jefferson Med. Coll. | ..... | (1903) | 71.1, 72.7 |
| National University | ..... | (1893) | 66.8 |
| Kentucky School of Med. | ..... | (1904) | 41.2 |
| Baltimore University | ..... | (1904) | 73.4 |

* Year of graduation not given.

Pennsylvania Homeopathic Report for December.—The Homeopathic Medical Society of Pennsylvania reports the written examination held at Philadelphia, Dec. 12-15, 1905.

The total number of applicants examined was 10, all of whom passed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|--|-------------------------------|------------|-----------|
| Hahnemann Med. Coll., Philadelphia, (1903) | 80.8 | (1904) | 88.5; |
| (1905) | 75.4, 75.8, 77.2, 78.4, 87.7. | | |
| University of Wooster | (1893) | | 82.4 |
| Boston University | (1892) | | 80.8 |
| New York Homeo. Med. Coll. | (1890) | | 95.4 |

Pennsylvania Eclectic Report for December.—The Eclectic Medical Society of Pennsylvania reports the written examination held at Harrisburg, Dec. 12-15, 1905. The total number of applicants examined was 8, all of whom passed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|----------------------------------|---------|------------|-----------|
| Maryland Med. Coll. | (1905) | | 88.4 |
| Royal University, Palermo | (1899) | | 75. |
| American Coll. of Med. and Surg. | (1903) | | 88.1 |
| University of the South | (1899) | | 78.3 |
| College of P. and S., Baltimore | (1904) | | 84.9 |
| Western Pennsylvania Med. Coll. | (1896) | | 83.3 |
| University of Modena, Italy | (1903) | | 78.0 |
| University of Naples, Italy | (1894) | | 78.8 |

Utah January Report.—Dr. R. W. Fisher, secretary of the State Board of Medical Examiners of Utah, reports the written examination held at Salt Lake City, January, 1906. The number of subjects examined was in 19; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 3, all of whom passed. The following colleges were represented:

| College. | PASSED. | Year Grad. | Per Cent. |
|--------------------------------|---------|------------|-----------|
| University of Michigan | (1904) | | 79.7 |
| Marion Sims Beumont Med. Coll. | (1904) | | 76.5 |
| Jefferson Med. Coll. | (1904) | | 84.2 |

* Second examination.

Virginia, New Board of Medical Examiners.—The governor has appointed the following members of the State Board of Medical Examiners to serve for four years: Drs. Willard B. Robinson, Tappahannock; Herbert M. Nash, Norfolk; Junius E. Warriner, Brook Hill; William W. Wilkinson, La Crosse; Richard S. Martin, Stuart; Samuel Lile, Lynchburg; Robert C. Randolph, Boyce; Robert M. Slaughter, Theological Seminary; Elliott T. Brady, Abingdon, and Charles W. Rodgers, Staunton; and state at large, Drs. Rawley W. Martin, Lynchburg; A. S. Priddy, Bristol, and R. Bruce James, Danville.

Society Proceedings

COMING MEETINGS.

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|---|
| AMERICAN MEDICAL ASSOCIATION, Boston, June 5-8. |
| Medical Association of the District of Columbia, Washington, April 3. |
| Tennessee State Medical Association, Memphis, April 10. |
| Medical Association of the State of Alabama, Birmingham, April 17. |
| Medical Society of the State of California, San Francisco, April 17-19. |
| Medical Association of the District of Columbia, Washington, April 3. |
| Florida Medical Association, Gainesville, April 18. |
| Medical Association of Georgia, Augusta, April 18. |
| Mississippi State Medical Association, Jackson, April 18. |
| South Carolina Medical Association, Columbia, April 18. |
| State Medical Association of Texas, Fort Worth, April 24-26. |
| Arizona Medical Association, Phoenix, April 24-25. |
| Medical and Chirurgical Faculty of Maryland, Baltimore, April 24-26. |

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Regular Meeting of the Section on General Medicine, held Feb. 12, 1906.

DR. WILLIAM E. HUGHES in the Chair.

Chronic Valvular Disease.

DR. FREDERICK J. KALTHER exhibited a patient whose case was interesting on account of the sudden onset of the symptoms, the very loud diastolic murmur which could be heard over the entire trunk and often three feet away from the body, and the very slight arterial phenomena. Following the ingestion of a large quantity of beer one of the heart valves ruptured.

DISCUSSION.

DR. J. ALISON SCOTT said that it was unusual for rupture of a valve to occur, except under great muscular strain. In this case the increased blood tension probably was produced by the alcohol.

DR. JAMES M. ANDERS said that rupture of normal heart valves was not frequent, and that it would be interesting to know whether or not the man had had a previous valvular lesion. Under those circumstances rupture would be more likely to occur, and in two instances in his experience had occurred, on slight muscular exertion.

DR. WILLIAM E. ROBERTSON said that in his experiments in the taking of blood pressure he had found that a good dose of alcohol would bring about a lowering of the blood pressure. In one instance in which the blood pressure was 115 it fell to 95 in twenty minutes after the giving of an ounce and a half of alcohol. He thought it possible that in this instance the enormous amount of fluid taken would increase the blood pressure and in that way throw extra work on the heart. In myocardial conditions the blood pressure is often very high when it would be supposed to be low. He believes that some other factor than the muscular pressure itself accounts for these variations in tension. This he thinks is explained by the retention of poisons in the system which have a vaso-constrictive effect.

Hysterical Neuroses of the Stomach.

DR. J. HENDRIE LLOYD exhibited a patient with a rare and curious hysterical condition of the stomach and abdomen. It was somewhat like the disease noted by French authors called "Rhythmic Borborygmi." The patient, who was hysterical, has a loud rumbling to and fro sound in the abdomen, probably caused by the passage of air to and fro either in the stomach or transverse colon, and this is produced by a rhythmic movement of the abdominal muscles. The condition came on during convalescence from typhoid; was unattended by pain, nausea or any evidence of organic disease. Dr. Lloyd reviewed briefly some of the more important and rare hysterical conditions of the abdominal organs, among which especially were anorexia nervosa and hysterical nystereism, or chewing of the cud in the human subject, a condition which has been observed especially in neurotics, as in insane patients, idiotic and epileptic children, etc., and also in neurasthenics. Among other diseases referred to was phantom tumors, false pregnancies, so called, all of which are seen sometimes in hysterical subjects. The paper emphasized the fact that there is still a wide field for the purely medical clinician in diseases of the stomach, all of which diseases the physician is not yet ready to resign to the surgeon.

DISCUSSION.

DR. JAMES M. ANDERS believed the case could not be anything else than a neurosis. Tending to this opinion were the facts of the typically hysterical appearance of the patient, and that when breathing and the motion of the diaphragm were arrested the noise ceased. It was evidently not due, therefore, to an independent peristaltic action of the stomach. That the diaphragm should make the peculiar noise in a normal stomach was difficult of explanation. An hour-glass contraction of the stomach was suggested as an explanation. It was thought possible that the diaphragm in forcing air and fluid through a narrow opening caused some noise; and, naturally, with retraction of the diaphragm and relaxation of the stomach there would be a regurgitation into the cardiac end.

DR. J. ALISON SCOTT thought that from the character of the noise there must be both air and fluid concerned in the noise. He suggested the existence of a partial obstruction at the pyloric end of the stomach, or along the curvature of the stomach. He thought either possibility could be easily demonstrated by an inflation of the stomach.

DR. A. O. J. KELLY said the case appeared to be some stomach condition in a hysterical subject. He referred to a patient who had been subjected to abdominal operations and had, following the third, developed a stomach condition manifested by air regurgitation, and vomiting coming on two, three or more times daily. She had been under various treatments and ultimately was operated on on the supposition of the presence of adhesions near the pylorus. These were found, and with their removal the regurgitation of food ceased promptly.

DR. S. SOLIS-COEN thought that there seemed to be a large hysterical element in association with the respiratory tract rather than with the stomach. He thought it would be of

interest to know whether with the passage of the stomach tube there was any escape of gas. In an hour-glass stomach which he had seen there had been contraction in an unusual direction, and he wondered whether there could be such a condition in the present case. Personally, he did not believe the condition was a surgical one, although he was open to conviction in that direction if the skiagraph should show a lesion.

DR. WILLIAM E. HUGHES said that he had occasionally seen, and especially in neurotics, stomachs whose esophageal opening was normally placed, whose pylorus was where it ought to be, and yet, without any actual increase in the size of the stomach, the lower border was almost down in the pelvis, necessitating a short, sharp bending of the stomach on itself. He thinks it possible that the motion occasioned by the sharply descending diaphragm might be enough to produce such a sound.

In any of the hysterical conditions there should be considered the possibility of cure by operation, and in connection with this two elements must be borne in mind—a hysterical basis and an acquired habit. If by operation the habit can be broken up, the hysteria is at least cured temporarily. A fact too often lost sight of is that there is an anatomic or pathologic basis for hysterical manifestations, such as there was in Dr. Kelly's case. In a certain number of gastric cases there is absolutely no neurosis. A case in point is that of a man over 80 years of age who had for many years regurgitated his food. He was entirely free from neurosis, and in his case the condition was purely the result of habit.

Pulmonary Abscess..

DR. JAMES M. ANDERS and DR. GEORGE E. PFAHLER presented a man, aged 28, married, an engineer, whose present illness began as typical typhoid fever, the temperature throughout, however, pursuing an intermittent type. At the end of the third week phlebitis affecting the left femoral vein developed and subsided that week. Then a bronchopneumonia appeared and after running its course, the patient developed a lobar pneumonia. Physical examination revealed an area of muffled tympany and cavernous breathing at the angle of the right scapula posteriorly. The abscess cavity attained its maximum size in about seventy-two hours. Three days later, while the patient was sitting up for an examination he developed a severe paroxysm of cough attended with the expectoration of about two ounces of yellow purulent sputum. A microscopic examination showed pus cells, elastic fibers, pneumococci and streptococci. The process was studied by radiograph while the patient was in the supine position and the exposure was made after inspiration. This showed an incomplete consolidation of the right lower lobe with a cavity in its upper portion about two inches in diameter, extending from the upper border of the fifth rib posteriorly to the middle of the second interspace in the mid-scapular line. About ten days later the radiograph showed less evidence of consolidation; the abscess cavity was still of the same size. Eleven days later the cavity was still visible, but was decreased to about its original size, while on the same side the diaphragm had risen to the lower border of the seventh rib. The fact that the diaphragm moved its position upward as compared with its normal position was considered indicative of Nature's process of assisting mechanically in closing an abscess cavity of the lungs. Operative interference had been seriously considered when the fortunate accident occurred leading to the discharge of the pus through a bronchus. After this the general and local symptoms steadily subsided until the necessity for operation no longer existed and convalescence was gradually established.

Recent Therapeutic Experiences with Pneumonia.

DR. S. SOLIS COHEN recently tested in a selected case the value of enormous doses of quinin in pneumonia. The patient was a young robust man admitted to the hospital shortly after his initial chill, still showing some crepitant rales, with bronchial breathing and temperature of about 103. Dr. Cohen gave him 15 grains of quinin every two hours, with the direction that it be continued until there was some sign of quinin poisoning. The man took 105 grains without effect, except a reduction of temperature. In the course of thirty-

six hours he was found to be in good condition, with the physical signs increased, but the fever gone. The pulse was very quiet, the breathing easy and the patient was feeling comfortable. The quinin was continued, in doses of about 50 grains a day, for two or three days, at the end of which time the physical signs began to show a beginning of resolution and the patient went on to recovery, without a crisis. There had been a gradual fall of temperature from 103 to normal.

Dr. Cohen also reported his results in the employment of colloidal silver in the treatment of endocarditis and in associated forms of sepsis. In a case of bronchopneumonia in a child, with pronounced meningeal symptoms, the remedy was used by the rectum and afterward applied in ointment over the neck, giving relief to the patient. In a case of lobar pneumonia following bronchopneumonia recovery took place. In that case also the symptomatic recovery preceded the disappearance of the physical signs. Dr. Cohen is convinced of the great value, in the treatment of pneumonia, of keeping the windows of the room in which the patient is sleeping open all the time, the bed being protected from the draft. An advantage in the administration of the colloidal silver is that as it is not given by the stomach, it need not interfere with other treatment.

Dr. Cohen does not know the action of the colloidal silver, but ventured the opinion that it renders the tissues less favorable as a culture medium, and that, to a degree, it favors the destruction of toxins. The dose usually employed by him by the rectum is from 2 to 5 grains; or the solution of from 2 to 5 grains in from one-half to 2 ounces of water. For intravenous use care should be taken to secure a specimen which has been well cared for by the apothecary. In pneumonia he has used the silver in suppositories containing 30 minims of a 2 per cent. solution.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Acute Catarrhal Conjunctivitis.

In the treatment of acute catarrhal conjunctivitis, according to J. H. Kincaid in *Southern Jour. of Med. and Surgery*, cleanliness is of the greatest importance. The eyes should be thoroughly cleansed every hour or even more frequently if much discharge is present. This should be done with a saturated solution of boric acid (4 per cent.).

Cold compresses applied locally are of service, unless a corneal ulcer is present. Especially is cold of value when there is much swelling of the lids. A small ice-bag may be used instead of the compresses. Kincaid states that some authors recommend silver nitrate in the strength of 2 to 5 grains (.12-.30) to the ounce (.30.), applied locally to the everted lids.

The eyes should never be bandaged, nor should poultices be applied to them. The patient should not be allowed to use the eyes and should wear dark glasses as a protection from the light, wind and dust. Temperate habits and proper hygiene must be insisted on by the physician.

Earache.

As soon as a patient complains of a severe earache, according to Barden in *Med. Record*, it must be realized that a septic process is present, which may reach a dangerous state if left unchecked. The patient, therefore, should be kept quiet, put to bed and placed on a liquid diet. The bowels must be kept freely open. Opiates may be given, if necessary, to insure rest and comfort, but should be used with caution. Dry heat or an ice-bag should be applied to the ear. Heat, as a rule, is preferable to the patient. Every three hours the ear should be irrigated gently with a hot solution of bichlorid of mercury in strength of 1 to 5,000, followed by a few drops of a carbolic acid solution in glycerin instilled into the ear.

Bardes condemns the practice of applying an onion, an oil or a tincture to the external meatus, as being uncleanly and in many cases harmful. Under no circumstances should the patient be allowed to suffer longer than twenty-four hours; and if the pain continues and the drumhead is swollen, inflamed and distended, surgical procedures should be resorted to without delay. The drumhead should be thoroughly incised and treated in the same way as any other septic formation. When the tympanic membrane is incised freely and not simply punctured, instant relief is given the patient, dangerous complications are prevented and recovery is hastened. The author recommends a hypodermic injection of morphin or a whiff of chloroform or nitrous oxid, when the drum may be freely incised with but little pain. In all cases, symptoms of extension to the mastoid cells must be watched for. The symptoms of mastoid involvement are tenderness over the mastoid region and sagging of the posterior superior wall of the canal.

Edema of Glottis in Children.

The following combination is recommended by *Bul. gen. de Ther.* as a spray to relieve the edema of the glottis in children and infants:

| | |
|--------------------|--------|
| R. Aluminis | |
| Acidi tannici, aa. | gr. xv |
| Ext. kramerie | 3ss |
| Aquæ | 3iiss |
| | 105 |

M. Sig.: To be used in the atomizer as a spray to the throat five or six times a day.

Chapped Hands.

The following combination is recommended as a valuable local remedy in the treatment of chapped hands:

| | | |
|----------------------|-----|-----|
| R. Sodii salicylatis | 3i | 4 |
| Balsami peruviani | 3iv | 15 |
| Glycerini | 3ss | 45 |
| Aquæ rosæ | 3vi | 180 |

M. Ft. lotio. Sig.: To be applied to the hands night and morning.

Hydrocyanic Acid.

Hydrocyanic acid is an old-time preparation, used as an antispasmodic in the various forms of reflex vomiting. It has also been used in many other conditions of nervous origin such as the cough due to disturbances of the heart and in asthma. It is a most efficient sedative to the gastric mucous membrane in such conditions as gastralgia, ulcer and carcinoma, and is regarded as a satisfactory sedative in cases of pruritus. Beasley recommends the following combinations containing dilute hydrocyanic acid:

In dry irritable coughs:

| | | |
|----------------------------|--------|----|
| R. Acidi hydrocyanici dil. | m. iii | 20 |
| Vini ipecacuanhæ. | m. v | 30 |
| Syr. toluani | 3ss | 2 |
| Aquæ anisi q. s. ad. | 3ii | 8 |

M. Sig.: To be taken at one dose; the dose to be repeated every four hours.

In gastric irritability:

| | | |
|----------------------------------|---------|-----|
| R. Acidi hydrocyanici dil. | m. iii | 20 |
| Liquoris bismuthi | 3ss | 2 |
| Sodii bicarb. | gr. xx | 130 |
| Liq. morphine acetatis (1 p. c.) | m. viii | 50 |
| Spts. chloroformi, aa. | m. x | 30 |
| Aquæ menth. pip q. s. ad. | 3i | 30 |

M. Sig.: One such dose every four hours.

To allay vomiting, the following combination is useful:

| | | |
|----------------------------|--------|-----|
| R. Acidi hydrocyanici dil. | m. iv | 25 |
| Potassii bicarb. | gr. xx | 130 |
| Spts. ammon. arom. | m. xv | 1 |
| Liquoris bismuthi | 3ss | 2 |
| Aquæ chloroformi q. s. ad. | 3i | 30 |

In pruritus, the following is of value:

| | | |
|--------------------------------|-------|-----|
| R. Acidi hydrocyanici dil. | 3i | 4 |
| Liquoris plumbi dil. q. s. ad. | 3viii | 240 |

M. Ft. lotio. Sig.: Apply locally to allay the itching on the unbroken skin. Or:

| | | |
|-----------------------|------|----|
| R. Acidi hydrocyanici | 3ss | 2 |
| Liq. plumbi fort. | 3i | 4 |
| Acidi carbonici liq. | m. v | 30 |
| Aquæ q. s. ad. | 3ii | 60 |

M. Ft. lotio. Sig.: To be painted thinly over the irritable parts where the skin is unbroken.

[The foregoing should not be applied on mucous membranes nor on broken skin.]

In laryngismus stridulus:

| | | |
|----------------------------|---------|----|
| R. Acidi hydrocyanici dil. | m. i | 06 |
| Spts. ammon. arom. | m. viii | 50 |
| Tinct. hyoscyami. | m. iv | 25 |
| Syr. aurantii. | m. xv | 1 |
| Aquæ anisi q. s. ad. | 3ii | 8 |

M. Sig.: One such dose every four hours.

In spasmodic asthma:

| | | |
|----------------------------|-------|----|
| R. Acidi hydrocyanici dil. | m. iv | 20 |
| Creosoti | m. i | 06 |
| Mucil. acacie | 3ss | 2 |
| Aquæ cinnamomi q. s. ad. | 3iv | 15 |

M. Sig.: One tablespoonful at once and repeat the dose at the end of an hour if not relieved.

In gastralgia with vomiting:

| | | |
|---|--------|-----|
| R. Acidi hydrocyanici dil. | m. iii | 20 |
| Creosoti | m. i | 06 |
| Liq. morph. hydrochlor. (1 p. c. B. P.) | m. xx | 130 |
| Sodii bicarb. | | |
| Mucil. acacie, aa. | 3ss | 2 |
| Aquæ dest. q. s. ad. | 3i | 30 |

M. Sig.: Two tablespoonfuls at a dose and repeated in four hours if necessary.

Urem with Coma.

The following outline of treatment is recommended by H. J. Smith in *Med. Bull.* in the treatment of uremic coma: When the heart's action is feeble and accompanied by high arterial tension, nitroglycerin may be given hypodermically in doses of grain 1/100 (.0006), alternating with strychnia given in doses of grain 1/40 (.0015) each. The patient is placed in a hot pack and cold applied to the head. In conjunction with the hot pack, pilocarpin hydrochlorate may be given hypodermically in doses of grain 1/12 (.005) each to promote free diaphoresis and thus to aid in eliminating large amounts of urea.

Magnesium sulphate, 2 ounces (60.), given by rectum in a pint of warm water and the injection repeated several times, is recommended in order to withdraw large amounts of the serum from the system and thus to reduce arterial tension and to restore consciousness.

The duration of the hot pack must depend on the individual case, lasting from a few minutes to thirty-five or forty minutes, at the end of which time the heart should be observed and stimulants administered if necessary. Elaterin is of service at this stage of the treatment to promote free elimination by the bowels. It is given in doses of grain 1/4 (.008) each, together with large quantities of water if the patient regains consciousness.

As a diuretic the following combination is recommended:

| | | |
|----------------------|-----|-----|
| R. Potassii acetatis | 3iv | 15 |
| Infusi digitalis | | |
| Infusi buchu, aa. | 3vi | 180 |

M. Sig.: One tablespoonful every three hours. Or:

| | | |
|------------------------------|--------|-----|
| R. Hydrargyri chloridi mitis | | |
| Pulveris scille | | |
| Pulveris digitalis, aa. | gr. xx | 130 |

M. Ft. pillule No. xx. Sig.: One every four hours, and continue for one week.

AFTER-TREATMENT.

The after-treatment consists in giving a saline purge once or twice a week to assist in reducing the edema. For the high arterial tension spiritus glonoini is recommended, given in doses of 1 minim each (.06), three times a day. This may also relieve dyspnea if this is present.

To correct the anemia and to serve as a mild diuretic, Smith recommends liquor ferri et ammonii acetatis in doses to suit the individual case, and continued for several weeks. The diet during the active stage of the trouble should consist principally of milk and broths. After the acute symptoms have subsided lean meats may be allowed such as beef, mutton, lamb, broiled, roasted or stewed; well-cooked fish, green vegetables and stewed fruits.

Chronic X-Ray Burns.

IN THE JOURNAL, March 10, 1906, we stated that Mr. Fuehs, a former x-ray operator, had used silver nitrate in full strength in chronic x-ray burns, with good results. This was an error; he should have stated that he had used C. P. nitric acid full strength.

Medicolegal

Actualty of Mental Suffering Attendant on Physical.

The Supreme Court of Florida, Division A, says, in *Western Union Telegraph Company vs. Wells*, that the intimate association between mind and body is a matter for discussion among psycho-physiologists; but to the laymen it is clear that a tribunal that allows damages for physical suffering can not deny damages for the mental suffering attendant on the physical. The one is as much an actualty as the other, and just as readily determinable by a jury.

Demonstration Before Jury of Nature of Injuries.

The Court of Civil Appeals of Texas says that during the trial of *Missouri, Kansas & Texas Railway Company of Texas vs. Lynch*, a personal injury case brought by the latter party, while a physician, the plaintiff's witness, was on the witness stand, the plaintiff's counsel had the plaintiff go around in front of the jury, take off his shoes and socks, and pull up his trousers and underwear, so as to expose his limbs above the knees, and then requested the physician to show the jury and demonstrate the plaintiff's sensibility or lack of sensibility his limbs. The witness then proceeded as follows: "As I said a while ago, he has a loss of sensation. His feet stay cold all the time. There is no feeling down here. You can pinch it as deep as you want to, and it don't make any difference. There is no sensation whatever. [Here the witness stuck pins into the plaintiff's limbs in various places, and continued the process until the blood was running freely from one place in one limb.] You can light a match there and burn him, if you want. The other is the same as this one [continuing to prick the other limb]. However, the left is a little better leg than the other. He seems to sort of bring it up from the hip and brace himself on it, so he can walk on his crutches. If it wasn't, he could not walk on his crutches." Then (turning to the jury): "If you would like for me to, I will stiek a match under it. He won't have any pain about it at all. It will make a blister, of course." And, while said witness was on the stand, the plaintiff's counsel had the plaintiff to stand up in front of the jury, and requested the witness to remove his crutches. The witness then proceeded to take one crutch from under the plaintiff, leaving the plaintiff standing on the other, and then forcibly removed the latter, allowing the plaintiff to fall nearly to the floor, whereupon the witness, who was a very strong man, caught the plaintiff, raised him up, stood him erect, and then turned him loose and let him fall again, this time, as before, catching him just before he struck the floor. To these proceedings the defendant company objected, on the ground that they were improper and calculated to prejudice the minds of the jury. The objection was overruled and the evidence admitted. The court holds that the evidence was admissible as tending to show the nature and extent of the plaintiff's injuries. It says that this evidence could only have affected the amount of the recovery, and, as there was no complaint made that the verdict (for \$12,500) was excessive, the defendant could not have been harmed by its admission. The court also holds that there was no error in admitting the testimony of another physician that in his opinion, from all the history given him of the case and from what he saw about the plaintiff, and the length of time that had elapsed since the injury, it would indicate more the idea of permanency in his condition than not. It says that the witness was a medical expert, and could give his opinion, based on his examination and the history of the case received from the plaintiff. The defendant could, on cross-examination of the witness, have shown that the history of the case received by the witne. from the plaintiff was not correct.

Application of Illinois Medical Practice Act.

The Supreme Court of Illinois in the case of *People vs. Langdon*, wherein it denied a rehearing in February, reverses the decision of the Appellate and Circuit courts. This was an action to recover the penalty for practicing medicine without a license from the State Board of Health, imposed by section 9 of the act in force July 1, 1899, entitled, "An act to regulate the practice of medicine in the state of Illinois, and to repeal an act therein named." The dates of the violations of the act charged were in 1903, without any averment that the defendant began the practice of medicine after July 1, 1899, and it was contended that without that averment no cause of action was stated. Thus the question raised was whether a person who has no license to practice medicine, who began such practice before July 1, 1899, when the present act took effect, and continued such practice thereafter without a license, is subject to the penalties named in section 9.

The Supreme Court says that it is clear that such a person comes within the express language of that section. He is a person who is practicing medicine without a certificate issued by the State Board of Health in compliance with the provisions of the act, and who does not hold an unrevoked certificate from the State Board of Health issued prior to the taking effect of the act. Having no license at all to practice medicine, he is within the terms of the statute and subject to its penalties.

But counsel contended that because section 2 only provided for the granting of licenses to persons entering on the practice of medicine after July 1, 1899, when the act took effect, the only persons subject to the penalties imposed by section 9 were those who began the practice after that date. The Supreme Court, however, does not see how that position can be maintained. It says that the provision of section 2 relied on is as follows: "No person shall hereafter begin the practice of medicine or any of the branches thereof, or midwifery, in this state without first applying for and obtaining a license from the State Board of Health to do so." Taking that section and the other provisions of the act together, they amount to this: Any person desiring to enter on the practice of medicine after the act took effect could only do so after first applying for and obtaining a license from the State Board of Health in compliance with the provisions of the act, and any person practicing medicine without a certificate issued under said act, or an unrevoked certificate issued under previous acts, was subject to certain penalties specified in section 9. The act is penal in character, and is to be strictly construed, but not with such technicality as to defeat its purpose. When the true meaning and intent of the act are apparent, the act is to be given effect in accordance therewith. The proviso excluding persons practicing medicine who hold unrevoked licenses issued by the State Board of Health prior to the taking effect of the present act can not be ignored in interpreting the act, and the proviso would be useless and senseless, if the legislature intended the act to apply only to persons who began the practice of medicine after the act took effect. To say that the legislature intended to grant immunity from prosecution to persons who were unlawfully practicing medicine at the time the act took effect would be wholly unwarranted. On the contrary, an unrevoked license or certificate issued under some previous act was required by the proviso.

In the case of *State Board of Health vs. Ross*, 191 Ill. 87, the question whether the State Board of Health could revoke certificates issued under a previous act was considered, and it was held that it could not. That decision was in accordance with the language of the act which provided for issuing licenses, and in one sentence provided that the board might refuse to issue a license for certain reasons, and might revoke such license for like causes. The provisions for granting, refusing to grant, or revoking a license under the present act relate only to persons entering on the practice of medicine after the act took effect. But that is an entirely different proposition from the one involved in this case. It does not follow from that decision that one who has no license under the present act or any former act may practice medicine without being subject to the penalties prescribed by section 9.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

March 10.

- 1 *Experimental Method in Sanitary Science and Sanitary Administration. W. T. Sedgwick, Boston.
- 2 *Review of Recent Observations on *Treponema Pallidum* of Syphilis. C. A. Pfender, Washington, D. C.
- 3 *Litholapaxy vs. Lithotomy. G. K. Swinburne, New York.
- 4 The Outlook for the Chronic Dyspeptic. M. I. Knapp, New York.
- 5 *Appendicitis, When to Operate. S. E. Sanderson, Detroit, Mich.
- 6 *Life Insurance Companies and the Prevention of Tuberculosis. C. L. Greene, St. Paul, Minn.

1. Sanitary Science and Administration.—Sedgwick states that comparatively few physicians or sanitarians are in a position to conduct artificial experiments, but that almost any wide-awake observer, whether he be a physician, physiologist, sanitarian or engineer, may, if he will, find going on all about him natural experiments, the conditions of which may often be learned with great accuracy, even after the experiment is completed, and which may yield conclusions quite as capable of verification as are those of experiments made in the laboratory. He pleads for better material on boards of health, claiming that it is time we should cease experimenting with political appointees and begin experimenting with something better than spoilsmen. Too often a hack politician or two, a second-rate physician or two, and one or more vain or place-seeking nobodies—useless but not harmless—make up local boards of health; and as no stream can rise higher than its source the services of such boards are disgracefully small in quantity and poor in quality.

2. *Treponema Pallidum* of Syphilis.—Pfender states that under the international code the present correct name of the organism now almost universally conceded to be the etiologic factor in the production of syphilis is *Treponema pallidum*.

3. Litholapaxy vs. Lithotomy.—Swinburne pleads for the more frequent use of litholapaxy, an operation too valuable to be lost. The technic is described and several cases are reported illustrative of the uses and limitations of the operation.

5. Appendicitis; When to Operate.—Sanderson believes that the safest general rule is to operate only when general peritonitis is not present. In regard to late operations, he says that no one questions the advisability of evacuating pus. As to the interval of operation, he says that if the attack has been unquestionably an inflammation of the appendix, especially if after-symptoms remain, operation is indicated; but if the symptoms are mild, and clear up entirely after the attack, it is best to await symptoms of an oncoming second attack before operation, in the meantime keeping the patient under observation.

6. Life Insurance and Tuberculosis.—Inasmuch as life insurance companies have a vital interest in the prevention of tuberculosis, Greene believes it desirable that the National Association for the Study and Prevention of Tuberculosis should endeavor to bring into active membership the medical directories of life insurance companies and seek to secure the active aid and co-operation of the companies in attempts to secure the passage and enforcement of laws directed to control tuberculosis, whether these relate to the building and maintenance of state or national sanatoriums, or to other vital matters. Arrangements ought to be perfected for the issuance of uniform sets of circulars, giving in plain and simple language such information as will serve to educate the masses, such literature to be printed and circulated by the companies through their agents and their ordinary mail service.

Medical Record, New York.

March 10.

- 7 Intraaural Lesions as Sequelæ of Chronic Purulent Otitis Media. M. A. Starr, New York.
- 8 *Mastoiditis in Infants. S. Oppenheimer, New York.
- 9 Literary Gems from the Medical Essays of Oliver Wendell Holmes. L. E. Blair, Albany, N. Y.
- 10 *Serum Treatment of Hay Fever. C. H. Knight, New York.

- 11 *Human Blood Pressure and Pulse as Affected by Altitude. C. F. Gardiner and H. W. Hoagland, Colorado Springs, Colo.
- 12 Inebriety Often a Form of Moral Insanity. T. D. Crothers, Hartford, Conn.
- 13 Vaginal Section in Relation to Puerperal Sepsis. J. S. Price, Beaumont, Texas.
- 14 *Korsakoff's Disease. E. L. Hunt, New York.
- 15 Open Safety Pin Swallowed by an Infant Six Weeks Old, and Successfully Passed by Bowel Six Days Later. B. Van D. Hedges, Plainfield, N. J.

8. Mastoiditis in Infants.—Oppenheimer gives the history of a patient illustrating the condition in which there is absence of prominent symptoms when the antrum is filled with pus, and declares that undoubtedly many deaths in infants ascribed to other causes result from a purulent inflammation of the mastoid antrum which has been unrecognized. In many cases the only evidence of the ear affection has to be gained from a careful study of the child for several days.

10. Serum Treatment of Hay Fever.—Knight sums up the present status of this treatment practically as follows: A final decision as to its value does not, as yet, seem warranted. There are so many discrepancies and sources of error that the problem is not easy to solve. The method of treatment varies greatly with the physician. There is also lack of uniformity in the preparation and use of the serum as well as in the general management of the patient. He thinks that it is fair to require an observance of the ordinary laws of health, even if such special precautions as excluding the night air during sleep, and so on, are not adopted. The strength of the serum and the sources from which it is obtained, as well as care and moderation in its administration, are important points. The writer believes from the mass of experience and literature relating to this subject, that a just estimate of the value of serum will soon be reached. The serum treatment at least does no harm even if it gives no better results than those attained by other methods.

11. Blood Pressure, Pulse and Altitude.—Gardiner and Hoagland found a rough ratio between pulse rate and blood pressure; the more rapid the pulse the lower the blood pressure. They also noted that when a pulse rate was but little affected by an altitude of 14,000 feet, the blood pressure was also more constant, and that cases of mountain sickness are accompanied by a fall in blood pressure and a rapid pulse rate. They conclude that patients suffering with high tension are likely to be benefited by being sent to high altitudes, while the change probably would be an undesirable one for patients in whom the blood pressure is abnormally low at sea level.

14. Korsakoff's Disease.—Hunt reports four cases. The first was alcoholic plus drugs; the second and third were both uncomplicated alcoholic; the fourth was post-typhoidal, and may have been complicated with alcohol. Only the first showed distinct neuritic symptoms, although both the second and fourth patients were weak on their legs, and probably in both the knee-jerk was diminished. All except the typhoid patient showed a tremor. All four displayed characteristic and identical mental symptoms—loss of memory for recent events, disorientation as regards time and place, confusion followed by violence and motor restlessness. Two of the four patients recovered; none died; two returned to their excesses, and their cases may practically be considered as chronic.

Boston Medical and Surgical Journal.

March 8.

- 16 Value of Laboratory Methods to the County Practitioner. J. R. Cowan, Danville, Ky.
- 17 *Value of Virchow's Smooth Atrophy of the Base of the Tongue in the Diagnosis of Syphilis. N. R. Potter, New York.
- 18 Demonstration of the Spirochæta Pallida of Syphilis, with Description of Rapid Method of Staining. T. J. Mannahan, Boston.
- 19 Congenital Occlusion of the Small Intestine: Operation; Autopsy. L. Davis and O. Richardson, Boston.

17. Virchow's Smooth Atrophy of Tongue in Syphilis.—As the result of investigations on a large number of patients Potter concludes that a normal base of the tongue is probably of considerable value in excluding an old syphilitic infection; whereas, a typical atrophy of the base of the tongue in an individual below fifty points to syphilis. A moderate or slightly marked atrophy of the base of this organ is of little value.

New York Medical Journal.

March 10.

- 20 Correction of Deformity Resulting from Hip Disease. D. O. Ashley, New York.
- 21 Spontaneous Trichinosis. D. Rovedal, Jr., New York.
- 22 Practical Results Accomplished with Radiant Energy. S. Stern, New York.
- 23 Surgical Treatment of Prostatic Enlargement. N. Jacobson, Syracuse, N. Y.
- 24 Determination of the Gastric Area, with Special Reference to Transposition of Viscera, Hour-Glass Stomach, Gastropostosis, Etc. A. L. Benedict, Buffalo.
- 25 Diarrhea and Its Diagnostic Significance. J. P. Tuttle, New York.
- 26 "Diagnostic and Prognostic Value of an Examination of the Throat in Pulmonary Tuberculosis. W. G. B. Harland, Philadelphia.
- 27 Peculiar Case of Infantile Palsy of Spinal Origin. F. Robbins, New York.
- 28 Balsam of Peru in Castor Oil as a Surgical Dressing. E. V. Hubbard, New York.

26. Value of Throat Examination in Tuberculosis.—Harland points out the importance of the possible presence of tuberculosis when patients complain of catarrhal symptoms of the upper air tract.

27. Infantile Palsy of Spinal Origin.—In the case reported by Robbins, forceps, fillet, hand or pelvis did not form etiologic factors. A drooping of the right arm was noticed immediately after the birth of the infant. There was never the slightest evidence of voluntary control of the right arm. There was no evidence of cerebral implication. For experimental rather than for therapeutic purposes, the infant was stretched out at full length on the bed, its arms placed above its head, the middle fingers touching. A pull at his feet brought both arms down at once, flexed in the attitude of defense on the chest, both being flexed at the elbow, and then extended to drop along the body. This experiment was repeated several times and invariably yielded the same result. Robbins thinks it remarkable that exactly that position in which the greatest amount of tension is brought to bear on the fifth and sixth cervical vertebrae should have resulted in a temporary restitution of conductivity in the musculo-cutaneous nerve. He suggests that possibly the cervical roots of this nerve have only been stretched at their point of emergence from the spine.

28. New Surgical Dressing.—Hubbard speaks of a dressing for wounds which was first employed by the late Dr. W. W. Van Arsdale of New York, consisting of a mixture of balsam of Peru (3ss), and castor oil (3i). The combination forms a permanent mixture, moderately antiseptic, always viscus, and always serving the purpose of a dressing that will not harden and that will take up the wound discharges as fast as they are formed. Hubbard cites a number of instances in which he made use of this mixture with good results.

St. Louis Medical Review.

March 5.

- 29 *Digital Irritation of the Epiglottis as a Means of Resuscitation After Apparent Death from Asphyxia. W. Freudenthal, New York.

29. Digital Irritation of Epiglottis.—In cases of apparent death from asphyxia Freudenthal introduces the hand into the mouth of the patient until he feels the epiglottis, and then moves the index finger to and fro over this structure. Experience has shown him that this is one of the best and easiest means to excite respiration in all such cases. Two cases are cited.

American Journal of Orthopedic Surgery, Philadelphia.

January.

- 30 *Use of Traction in Hip Disease. E. H. Bradford, Boston.
- 31 *Treatment of Hallux Valgus. H. A. Wilson, Philadelphia.
- 32 Portable Frame for Holding a Patient with a Fracture of the Shaft of the Femur While Plaster-of-Paris is Applied. F. E. Peckham, Providence, R. I.
- 33 *Multiple Cancellous Exostoses. G. G. Davis, Philadelphia.
- 23 Case of Sacro-Iliac Disease in a Child, with Operation. E. W. Reersom, Chicago.
- 35 Congenital Luxation of the Head of the Radius. W. E. Blodgett, Detroit.
- 36 Spontaneous Fractures with Rickets. H. O. Fells, Cleveland.

30. Traction in Hip Disease.—Bradford claims that in the treatment of hip disease a force which will counteract muscular spasm and draw the head of the femur away from the acetabulum, favors correction, the prevention of deformity and more rapid healing of the diseased bone tissue. Traction is not needed during the whole period necessary for the treat-

ment, but only during the stage of active muscular spasm. During the ulcerative stage fixation of the joints and strong traction are both needed in the convalescent stage, and limited motion of the joint is not injurious; but protection from violence is essential until the bone tissues have regained their normal strength.

31. Treatment of Hallux Valgus.—Wilson's paper deals with the clinical and radiographic conditions found to exist in 77 patients suffering from some form of hallux valgus and a report of four cases showing the results obtained by operation.

33. Multiple Cancellous Exostoses.—Davis reports two cases. The first patient was a man, aged 53, who when 10 years of age noticed a hard lump on the fourth finger of the right hand at the joint between the proximal and middle phalanges. About the same time hard lumps appeared on both humeri above the insertion of the deltoid muscles beneath the insertion of the pectoralis major on the antero-internal aspect. The lumps were hard, immovable, painless and attained their maximum size in a few months. Both forearms then became affected. Two years later both knees became involved and the legs became crooked. Later various joints became impaired. The condition progressed, gradually involving all the bones. The second patient was a child 3 years of age. The affection was noticed when it was about 1 year old. It involved the bones of the hand, arm, leg, several of the ribs and the scapulae.

The Post-Graduate, New York.

February.

- 37 Intussusception of the Intestines; Operation; Recovery. T. Dunham, New York.
- 38 Postoperative Case of Tuberculous Kidney. G. F. Morris and F. Cabot, Jr., New York.
- 39 Case of Perineal Prostatectomy. F. Cabot, Jr., New York.
- 40 Chronic Myelitis. J. Collins, New York.
- 41 Forceps Version and Craniotomy. G. L. Broadhead, New York.
- 42 *Simple Clinical Method for the Use of Detection of the Spirochaete Pallida of Syphilis. L. B. Goldhorn, New York.
- 43 Gastroenterostomy and Cholecystenterostomy. S. Lloyd, New York.
- 44 Medical Language. A. Rose, New York.

42. Simple Method for Detection of Spirochaete Pallida.—Goldhorn describes a method for rendering the spirochete of syphilis so plain and characteristic as to make its differentiation from the ordinary saprophytic spirochetes quite simple. The stain is prepared as follows: One gram lithium carbonate is dissolved in 200 c.c. of water, and 2 grams of medicinal methylene blue are added. When completely dissolved the solution is heated on the water-bath until a rich polychrome has formed. The solution is filtered through cotton. One-half of this polychrome is carefully acidified with 5 per cent. acetic acid until blue litmus paper shows a faint reddish tinge. The second half of the polychrome is added and into this corrected dye a weak watery eosin solution of about 0.5 per cent. strength is poured until complete precipitation has taken place. This point is determined by filtering a sample from time to time till the filtrate is of a pale blue watery color and slightly fluorescent. The mixture is set aside for a day and is then filtered through a double layer of filter paper. The precipitate is dried slowly at about 40 C. When dried it is dissolved in wood alcohol, making a strong solution, which is permitted to stand for a day, when it is again filtrated. To use this dye a sufficient quantity is dropped on an unfixed preparation so as to cover it; after two or three seconds it is poured off and slowly introduced into Jean water, the preparation side turned down. When washed the preparation is drained and dried in the air. The *Spirochaete pallida* is stained a purplish color, which may be changed into a light black or black-brown by treating the specimen with Gram's or Lugol's solution.

Interstate Medical Journal, St. Louis.

February.

- 45 *Transfusion. W. B. Dorsett, St. Louis.
- 46 Osteitis Deformans. M. B. Crompton, St. Louis.
- 47 Traumatic Duplexia; Operation; Benedict. W. S. Deutsch, St. Louis.
- 48 Pleomphus of Lovable. J. M. Ball, St. Louis.
- 49 *Two Unusual Cases of Tubal Pregnancy. C. H. Dixon, St. Louis.

45. Transfusion.—It is Dorsett's practice, after prolonged intra-abdominal operations, whether much or little blood has been lost, to inject into the rectum from one to two pints of

normal saline solution. In puerperal eclampsia there is no better remedy, in his opinion, than the introduction of normal saline solution into the veins. In these cases he thinks it best always to open a vein for the purpose of lessening the quantity of toxic blood in the circulation and then to supply the quantity removed by normal saline solution, which dilutes the toxins and renders them less potent, and also stimulates glandular excretion. Dorsett cites five cases illustrating the good results following this procedure. His experience with adrenalin in conjunction with normal saline solution is limited to one case. He thinks it is valuable as an adjunct because by its action the vasomotors are held in check and the intravenous saline solution equalizes the circulation. He warns against injecting too large quantities into the veins for fear of rupture of the vessels or fatal edema of the lungs.

49. **Unusual Cases of Tubal Pregnancy.**—Dixon cites two cases. The first patient, a multipara, menstruated regularly from May, 1902, till September, 1904, which period she missed. On September 14 she noticed a slight flow of blood which commenced with a severe pain lasting a few hours, starting in the region of the rectum and extending toward the stomach, accompanied by nausea. Eight days later she had a similar attack, only more severe. Two days later the pain was general over the abdominal cavity. There was muscular rigidity over the right inguinal region, flatness on percussion and some soreness. Vaginal examination showed a large swelling, soft and painful, on the right side, extending posteriorly. September 26 the patient had another attack of pain, more severe than the preceding ones, but of same character and location. She had been removed to the hospital the day before operation, and a few hours later the cavity was full of blood, the bleeding being from the right tube. Recovery was uninterrupted.

She menstruated regularly until May 22, 1905, when she had an attack of pain, paroxysmal in character, in the left side. She had none of the usual symptoms of pregnancy. A flow had existed since April 13. Examination showed a large swelling in the left pelvic region, pointing downward, painful and soft, with the uterus slightly enlarged. Operation showed rupture of the left tube, which was removed. Recovery was uninterrupted. In the case of the second patient the right tube was the one involved. In 15 cases seen by Dixon the pregnancy was always on the right side, except in the one in which there was a secondary pregnancy on the left side. In most of these cases there was rigidity of the muscles over the side of the trouble, which Dixon thinks is a point worth noting, because the absence of the rigidity usually is given as a differential sign between tubal pregnancy and appendicitis.

Iowa Medical Journal, Des Moines.

February 15.

- 50 *Shall Wholesale Poisoning Be Sanctioned by the People of the United States to the Detriment of the Masses, and the Advantage of a Few Privileged Criminals? C. F. Wahret, Ft. Madison.
- 51 To Spread Sound Ideas Is to Work for Humanity. J. R. Jicinsky, Cedar Rapids.
- 52 *Case of Poisoning by Oil of Tansy. H. A. Lelpziger, Burlington.

50. **Shall Wholesale Poisoning Be Sanctioned?**—Speaking of pure foods and the "patent-medicine" evil, Wahrer states that wholesale poisoning is being done all the time for the purpose of enriching a few at the expense of the health of the masses, who are asked to consume these poisonous products under the pretense that they are wholesome food. While adulteration does not always work injury to health it does deceive. Adulterations are not always for the purpose of deception, but often for the purpose of cheaply preserving articles from decay, so that they may easily be kept for an indefinite time without loss to the maker or the manufacturer. These preservatives, while subserving the ends of the producer, are usually poisonous and detrimental to the health of the consumer. Wahrer discusses the work done by Dr. H. W. Wiley of the Department of Agriculture and details the results obtained. He also speaks of the nostrum evil and the work done by THE JOURNAL, and by the various lay journals and magazines to suppress this evil.

52. **Poisoning by Oil of Tansy.**—Leipziger reports the case of a woman who took one ounce of oil of tansy for the purpose

of producing an abortion. Although she suffered intensely from symptoms of poisoning, she did not abort, but went on to full term, giving birth to a healthy female child.

Denver Medical Times.

February.

- 53 Presidential Address Delivered Before the Denver County Medical Society. W. J. Rothwell, Denver.
- 54 *Treatment of Scarlet Fever. N. Weist, Denver.
- 55 *Id. C. F. Schollenberger, Denver.
- 56 Id. D. R. Lucy, Denver.
- 57 Id. A. E. Grant, Denver.
- 58 Bright's Disease as a Gastrointestinal Toxemia. P. J. Potulajse, Denver.

54. **Treatment of Scarlet Fever.**—In addition the customary treatment employed, Weist uses the following combination, which has yielded good results in every case:

| | | |
|----------------------------------|------|----|
| R. Tinct. digitalis (fresh)..... | 3ss | 2 |
| Liq. ammon. acetat (fresh)..... | 3iss | 6 |
| Spt. ether nit..... | 3ii | 8 |
| Syr. tolu..... | 3ss | 15 |
| Aqua cari, q. s. ad..... | 3ii | 90 |

M. Sig.: A teaspoonful every three hours.

The dose is varied according to the age of the patient. By giving this mixture from the beginning of the disease, every case, he states, has run an even uncomplicated course.

55. **Id.**—Schollenberger thinks that hydrotherapy is more useful to combat the temperature than medicinal antipyretics. In mild cases in which the temperature ranges from 100 to 102.5 F., and in which there are no heart complications, the following formula has given excellent results:

| | | |
|----------------------------|------------|-------|
| R. Tinct. aconit..... | gtt. xxxii | 2 1/2 |
| Antipyrin..... | gr. xxxii | 2 1/2 |
| Liq. ammonia acetatis..... | 3ss | 15 |
| Syrup, q. s. ad..... | 3ii | 60 |

M. Sig.: Teaspoonful every four hours for child 6 years old.

Therapeutic Gazette, Detroit, Mich.

February 15.

- 59 *What is the Best Method of Treating Uterine Inertia?—A Symposium. E. H. Grandin, C. Jewett, J. O. Polak, Brooklyn, N. Y., and W. T. Manton, Detroit, Mich.
- 60 *Present Treatment of Pneumonia as Exemplified by the Routine Treatment of the Disease in Four of the Large New York Hospitals. H. R. Loomis, New York.
- 61 *Treatment of Pneumonia. S. P. Johns, North San Juan, Cal.
- 62 Therapeutic Value of Eserin in Ophthalmic Practice. A. Gray, Philadelphia.
- 63 *Backache in Women and Its Treatment. W. E. Parke, Philadelphia.
- 64 Brometone in the Control of Epilepsy. W. Kempster, Milwaukee.

59. **Treatment of Uterine Inertia.**—Grandin gives first place to prophylaxis, keeping the nerve centers at par. He advises giving women who possess the characteristics of repressed nerve tone strychnia and quinin during the latter months of pregnancy, in the dosage of gr. 1/60 of the former and gr. 1 of the latter, three times daily. After the birth of the child the uterus should be given a chance to regain tone before resorting to attempts to deliver the placenta. Other causal factors being absent, Grandin proceeds at once to thorough tamponade of the uterus. On the removal of the gauze, within thirty hours as a rule, the uterus contracts.

Simple inertia in the first stage of labor, with membranes unbroken and patient getting sufficient sleep and nourishment, Jewett does not treat at all, except, perhaps, to eliminate recognized causes. In the presence of indications for prompt delivery he has found the employment of alternate hot and cold compresses over the abdomen most useful. He also administers quinin, in from 5 to 10 grain doses, or strychnin, gr. 1/30, every four hours. In inertia in the second stage, the treatment is the same as in the first stage. After full dilatation he resorts to the use of forceps.

When the membranes are unruptured and the pains are irregular, inefficient and powerless, after emptying both bladder and rectum, Polak administers morphin gr. 1/4 and atropin, gr. 1/50, and makes a firm vaginal tamponade of gauze. When the pains have been strong and regular, and then gradually diminish in force and frequency, he gives strychnin gr. 1/30 every half-hour until 1/5 gr. has been taken. When the inertia follows the delivery of the placenta, friction, ergot, and uterine tamponade are resorted to.

In the ordinary case of inertia Manton pins his faith to strychnin, quinin, and strong black coffee.

60.—This article appeared in *Med. Rev. of Reviews*; abstracted in THE JOURNAL A. M. A., Mar. 17, 1906, page 828.

61. **Treatment of Pneumonia.**—Johns favors the use of chloral and infusion of digitalis in the treatment of pneumonia, employed according to the methods described by G. W. Balfour. The dose varies with the age of the patient. For an adult the first dose is 20 grains of chloral in half an ounce of infusion of digitalis. The subsequent doses are 10 grains of chloral in half an ounce of infusion of digitalis, every four hours, to be continued until the temperature falls to normal. Johns has used this treatment for more than ten years in all kinds of cases and has found it equally good in all. [Is not 10 grains of chloral every four hours rather a large dose?—Ed.]

63.—See abstract in THE JOURNAL, Dec. 23, 1905, page 1979.

Archives of Pediatrics, New York.

February.

- 65 *Case of Acute Yellow Atrophy of the Liver in a Child Five Years of Age. A. H. Wentworth, Boston.
- 66 Plea for the More Timely Use of Intubation in Laryngeal Stenosis, and for the Use of Tracheotomy in Certain Neglected Cases. E. W. Saunders, St. Louis.
- 67 Sclerema Neonatorum. J. P. C. Gelfrich, Philadelphia.
- 68 Theory of Natural and Artificial Feeding in Infancy. F. Hamburger, Vienna. Translated by H. I. Bowditch, Boston.
- 69 *Hydrocephalus and Rachitis; Their Treatment of Radiant Energy. M. A. Cleaves, New York.

65. **Acute Yellow Atrophy in a Child.**—Wentworth reports a case of acute yellow atrophy occurring in a boy of 5 years. At 18 months the patient had tuberculous peritonitis, from which he recovered without operation in about six months. At the age of 3½ years he had lobar pneumonia of the left lower lobe. The first symptom of the final trouble was a slight jaundice. This was followed in a day or two by vomiting and a slight degree of malaise. The child was about the house and out of doors until within four days of his death. On the sixteenth day of his illness he became delirious. The urine was negative. A diagnosis of the condition was not made during life. When the abdomen was opened at autopsy firm adhesions were found everywhere. The liver was not diminished in size, and the cut surface presented areas of a bright greenish-yellow color on a dark red background. The most striking feature of the case was the extreme degree of destruction of liver with the absence of macroscopic signs of atrophy. The liver cells were destroyed in at least three-quarters of the liver. The urine had not been examined for leucin and tyrosin.

69. **Röntgen Ray in Hydrocephalus and Rachitis.**—Cleaves reports a case of hydrocephalus in which the patient was exposed to the x-ray for five minutes, six inches from the target, biparietal, and treated to an arc light bath, the entire body being exposed to the energy of 10 ampere arcs or a total of 4,000 candle power. During the seven weeks the treatment was continued the child improved in every way. The mental improvement was more marked than the physical. The hydrocephalus also became less apparent in size. The second case was one of hydrocephalus due to rickets. This patient also improved under radiant light treatment.

Ophthalmic Record, Chicago.

February.

- 70 *Triangular Opacity in the Superficial Layers of the Cornea Occurring in Syphilitic Subjects. W. C. Posey, Philadelphia.
- 71 *Herpes Zoster Ophthalmicus. E. Stieren, Pittsburg, Pa.
- 72 New Device for Illuminating and Controlling the Intensity of Illumination for the Amblyoscope. N. M. Black, Milwaukee.
- 73 Self-Checking Speculum. S. S. Bishop, Harrisburg, Pa.
- 74 Means of Time Saving when Refracting. H. P. Larkin, Philadelphia.
- 75 Foreign Bodies in the Cornea. C. C. Conkey, Superior, Wis.
- 76 A Neglected Duty. J. B. Taylor, Bloomington.

70. **Syphilitic Opacities of the Cornea.**—Posey cites the case of a lad of 17 who was the subject of congenital syphilis. During an attack of interstitial keratitis there appeared a triangular opacity in the superficial layers of the cornea which had to be differentiated from certain forms of keratitis parenchymatosa. The opacity was entirely avascular and was composed apparently of a series of fine lines which ran in a generally vertical direction from the base to the apex of the triangle. The rest of the cornea presented the general diffuse

haze and remnants of interstitial vessels which is usual after interstitial keratitis. The second patient presenting this unusual condition of the cornea was a woman 32 years of age, a subject of either late secondary or early tertiary syphilis. In the left eye there was a triangular zone of opacity corresponding in character, position, and extent to that seen in the first case.

71. **Herpes Zoster Ophthalmicus.**—Stieren reports a minimum and a maximum case of this affection. He does not believe in the acute specific hypothesis of the disease, since it never occurred in "epidemies." In all the cases which have come under his observation he has been able to trace a history of exposure to cold or dampness after some form of unusual exertion, with consequent fatigue, in individuals of sedentary habits.

Texas Medical News, Austin.

February.

- 77 *Creeping Disease. J. D. Moorhead, Desdemona, Texas.
- 78 Dermatitis Herpetiformis. J. W. Carhart, Austin.
- 79 Cure and Treatment of Tuberculous Throat Affections. E. D. Sinks, El Paso, Texas.

77. **Creeping Disease.**—Under this title Moorhead describes a peculiar skin affection. The patient, a boy 5 years old, was said to be suffering from a Brazilian worm in his foot. The worm disappeared during the winter, only to reappear with the approach of the warm season. The infection was believed to have come from a family which came from Brazil and some of the members of which had their feet infected with this parasite. The worm travels in the layers of epidermis, pursuing rather a zigzag course, giving the skin much the same appearance as the surface markings of moles in the soil. The parasite moves from one-half to one inch during the twenty-four hours, usually at night, leaving a raised line of epidermis about one-eighth of an inch in width. The only effective treatment of the condition is excision of the progressive end of the line with plenty of tissue included to make sure of getting the parasite. Moorhead has succeeded in destroying the parasite in five cases by freezing the progressive or terminal end of the line with ethyl chlorid, one application being sufficient in each case.

Journal of Kansas Medical Society, Lawrence.

February.

- 80 The Physical Basis of Fatigue. J. M. Latta, Wichita.
- 81 *Value of Antiseptics in the Treatment of Infected Wounds. G. M. Gray, Kansas City.
- 82 Spinal Injuries, with Special Reference to the Mechanical and Operative Treatment. E. F. Robinson, Kansas City.

81. **Value of Antiseptics.**—Gray is somewhat skeptical regarding the value of any of the antiseptics in general use in the treatment of infected wounds. He is convinced that both carbolic acid and bichlorid of mercury have been the means of causing death in more cases than they have saved from them. He favors substituting normal salt solution for these more severe agents and basing the treatment on the plan of elimination by evacuation of the pus and provision for drainage instead of persisting in the daily application of strong antiseptic solutions that in his opinion do more harm than good.

Journal of Infectious Diseases, Chicago.

February.

- 83 Observations on the Agglutination of Bacteria. W. H. Park, New York.
- 84 Comparative Studies of Diplococci Decolorized by Gram's Method. Obtained from the Spinal Fluid and from the Nares in Cases of Epidemic Cerebrospinal Meningitis. E. K. Dunham, New York.
- 85 *Prevalent Importance of Meningococci in the Nasal Cavities of Meningitic Patients and of Those in Direct Contact with Them. M. E. Goodwin and A. I. von Sholly, New York.
- 86 Temporary Alteration of Character of an Organism Belonging to the Colon Group. O. Klotz, Montreal.
- 87 Longevity of Bacillus Typhosus in Natural Waters and in Sewage. H. L. Russell and C. A. Fuller, Madison.
- 88 Relation Between Oxygen in Water and the Longevity of the Typhoid Bacillus. G. C. Whipple and A. Mayer, Jr., Brooklyn, N. Y.
- 89 Relative Applicability of Current Methods for the Determination of Feculibility in Sewage Effluents. G. A. Johnson, W. R. Copeland and A. E. Kimberly, Columbus, Ohio.
- 90 Comparative Review of Current Methods for the Determination of Organic Matters in Sewage. G. A. Johnson and A. E. Kimberly, Columbus, Ohio.
- 91 Method for the Direct Determination of Organic Nitrogen by the Kleidahl Process. A. E. Kimberly and M. G. Roberts, Columbus, Ohio.

- 92 Practical Advantages of the Gooch Crucible in the Determination of the Total and Volatile Suspended Matter in the Sewage. A. E. Kimberly and H. B. Hommon, Columbus, Ohio.
- 93 Resistance to Decomposition of Certain Organic Matters in Sewage. H. W. Clark, Boston.
- 94 Collection and Preservation of Samples of Sewage for Analysis. S. DeM. Gage and G. O. Adams, Ithaca, N. Y.
- 95 Ready Method of Preparing a Silica Turbidity Standard. E. C. Levy, Richmond, Va.
- 96 Solubility of Calcium Carbonate and of Magnesium Hydroxide and the Precipitation of These Salts with Lime Water. G. C. Whipple and A. Mayer, Jr., Brooklyn, N. Y.
- 97 Experience with the Use of a Nonbasic Alum in Connection with Mechanical Filtration. G. C. Whipple and F. F. Langley, Brooklyn, N. Y.
- 98 *Use of Copper Sulphate in Water Filtration. H. W. Clark and S. DeM. Gage, Ithaca, N. Y.
- 99 Bactericidal Action of Copper. H. W. Clark and S. DeM. Gage, Ithaca, N. Y.
- 100 Determination of Copper in Water. F. B. Forbes and G. H. Pratt.
- 101 A Notable Source of Error in Testing Gaseous Disinfectants. H. W. Hill, Minneapolis.
- 102 Methods of Bacteriologic Examination of Milk. F. H. Slack, Boston.
- 103 Suggestions for Changes in the Schedules for Making Broth, Gelatin and Agar. Recommended in the last Report of the Committee on Standard Methods of Water Analysis. H. W. Hill, Minneapolis.
- 104 Device for Filtering Toxins, etc., by the Use of Water Pressure. H. W. Hill, Minneapolis.

85. Occurrence of Meningococci in the Nasal Cavities.—Goodwin and Sholly isolated meningococci from the nasal mucus of 50 per cent. of meningitis patients during the first two weeks of the disease, and from about 10 per cent. of the people most closely in contact with them. They were frequently present in enormous numbers. Two cultures isolated from normal students were like meningococci culturally and in their pathogenicity, but did not have the same specific agglutinins. The authors believe that the finding of meningococci in great numbers in the nasal mucus of a large proportion of the patients and of those caring for them, and the absence of meningococci from the nasal mucus of a large number of normal persons examined, would strongly indicate the necessity of isolating cases of epidemic cerebrospinal meningitis, at least during the early weeks of the disease.

98. Use of Copper Sulphate in Water Filtration.—Clark and Gage believe that the treatment of water with copper sulphate or by storing it in copper vessels has little practical value, for the following reasons: 1. The use of any method of sterilization which is not absolutely effective is dangerous in the hands of the general user, tending to induce a feeling of false security, and leading to the neglect of ordinary precautions which would otherwise be employed. 2. The removal of bacteria, *B. coli* and *B. typhosus*, by allowing water to stand in copper vessels for short periods, while occasionally effective, is not sure, and the time necessary to accomplish complete sterilization is so long that the method would be of no practical value to the ordinary user. Furthermore, metallic copper seems to have little more germicidal power than iron, tin, zinc or aluminum. 3. Although the removal of *B. coli* and *B. typhosus* is occasionally accomplished by dilute solutions of copper sulphate, these organisms may both live for many weeks in water containing copper sulphate in greater dilutions than 1 to 100,000; and in order to be safe dilutions of 1 to 1,000 must be used, in which case the water becomes repugnant to the user because of its strongly astringent taste. 4. In some instances very dilute solutions of copper sulphate of colloidal copper absorbed from contact with clean metallic copper, appear to have a decidedly invigorating effect on bacterial activity, causing rapid multiplications, when the reverse would have been true had the water been allowed to stand the same length of time without any treatment.

Pennsylvania Medical Journal, Athens.

February.

- 105 *The Trend of Psychiatry. E. E. Mayer, Pittsburg.
- 106 *Protective Inoculations Against Typhoid Fever. D. H. Bergey, Philadelphia.
- 107 Typhoid Fever in Pennsylvania. S. Egbert, Philadelphia.
- 108 *Herpes Zoster Ophthalmicus. E. Siero, Pittsburg.
- 109 *The Question of Lowered Gastric Secretion. C. G. Stockton, Buffalo.
- 110 *Surgical Treatment of Cardiospasm. E. Martin, Philadelphia.
- 111 Treatment of Benign Stenosis of the Pylorus and Duodenum Resulting from Spasm and Scar Tissue and from Abdominal Adhesions. A. Bernheim, Philadelphia.
- 112 Symptomatology and Diagnosis of Cancer of the Stomach. J. J. Gibbide, Philadelphia.

- 113 *Gastroenterostomy; Its Indications and Technique. W. L. Rodman, Philadelphia.
- 114 *Pain of Obscure Origin Simulating Neuritis, Neuralgia or Organic Lesions. J. H. Musser, Philadelphia.

105, 106 and 114.—See abstracts in THE JOURNAL, Oct. 28, 1905, page 1349.

108. Id.—Oct. 21, 1905, page 1271.

.09, 110 and 113. Id.—Nov. 4, 1905, page 1439.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

February 24.

- 1 *Complications of Scarlet Fever. W. Hunter.
- 2 Whitlow and Its Treatment. G. B. M. White.
- 3 *Plumbism from the Ingestion of Diachylon as an Abortifacient A. Hall and W. B. Ransom.
- 4 *Indications and Contraindications for the Removal of the Gall Bladder. A. W. M. Robson.
- 5 *Cases of Intrahepatic Calculi. H. R. Vachell and W. M. Stevens.
- 6 Two Cases of Pancreatic Necrosis. G. Barling.
- 7 A Paracolon Bacillus Found in the Urine. W. Malr.

1. Complications of Scarlet Fever.—Hunter records his observations of the relation of oral sepsis in scarlet fever to the complications occurring during that disease. One result stands out very clearly, viz., that the severity of scarlet fever, that is to say of the septic complications of it, is greatly influenced by the degree of oral sepsis present. Thus, of cases without oral sepsis only 35 per cent. had complications of moderate or severe degree; whereas of cases with oral sepsis 66 per cent. showed such complications. The severity of the initial angina also is affected by the presence of this previous sepsis. Hunter states that the actual frequency of the occurrence of complications of some kind or another is but little affected by the absence or presence of oral sepsis, but that the number of complications met in cases of oral sepsis is much higher than in those without it; and the severity of the complications met with is much greater.

3. Plumbism from Diachylon.—Hall and Ransom show that the custom of taking diachylon as an abortifacient has assumed such serious proportions in England that steps must be taken to stop this evil. They offer the following suggestions as the best method of dealing with the matter: 1. To compel by act of parliament the publication of its ingredients on the cover of every patent remedy. 2. To prosecute and to punish the makers and vendors of diachylon pills. 3. To seek the support of the lay press, and to invite it to abstain from publishing advertisements of "female irregularity" remedies. 4. To circularize, or otherwise to inform, all medical practitioners in the country of the possibility of such a cause in obscure cases of plumbism, so that they may recognize it and warn their patients. 5. Compulsory notification of all cases of abortion. 6. To make lead poisoning in women a notifiable disease. 7. To control, or to prohibit, the sale of diachylon.

4. Removal of Gall Bladder.—As the result of his own experience and that of others, Mayo Robson is convinced that there is an undoubted relationship between cholelithiasis and cancer of the gall bladder and ducts. He says that inasmuch as gallstones produce characteristic symptoms and as a rule, therefore, are easily diagnosed, and since they can be removed in the early stages, before serious complications have supervened, with very little risk (less than 1 per cent.) in his experience, the preventive treatment for cancer of the gall bladder is removal of the source of irritation. He is so impressed with the importance of this view, that he recommends the early removal of gallstones because the symptoms are likely to recur and lead to other complications. In a considerable percentage of such cases malignant disease is likely to supervene if the irritation is not removed.

5. Intrahepatic Calculi.—The patient whose case is related by Vachell Stevens was admitted to the infirmary complaining of jaundice and of painful swelling in the stomach. The liver extended down to within a finger breadth of the umbilicus. The constitutional symptoms were those of jaundice. The

patient became rapidly worse, the jaundice deepened, the hepatic enlargement increased, the stools became colorless and he died in a comatose state on the fourteenth day after admission. The liver weighed 97 ounces and over the whole extent of its surface were small projections caused by underlying calculi. Over the upper surface of the right lobe there were numerous white points which on section proved to be tiny abscesses containing thick pus. Since an attack of typhoid forty-one years previously (when 11 years of age) the patient had never been robust, although no symptoms suggestive of gallstones appeared until he was 23 years of age, since which time till his death, twenty-nine years later, he had suffered from frequent attacks of colicky pain attributed to dyspepsia. The gall bladder did not contain any stones.

The Lancet, London.

February 24.

- 8 *Gastric Surgery. H. J. Paterson.
- 9 Physical Anthropology and Ethnology of British New Guinea. C. G. Seligmann.
- 10 Oral Sepsis. S. Spokes.
- 11 *Recurrent Herpes Gestationis. C. A. D. Bryan.
- 12 Acute Hemorrhage into the Gall Bladder, the Seat of Infective Cholecystitis and Hundreds of Gallstones. J. A. W. Petre and J. D. Harris.
- 13 *Case of Double Vaginal Cysts. H. MacNaughton-Jones.
- 14 An Attempt to Simplify the Diagnosis of Ocular Paralysis. W. H. Haw.

8. Gastric Surgery.—Paterson reviews the immediate and remote results of gastrojejunostomy, the surgical treatment of gastric ulcer, of gastrorrhagia and of hour-glass stomach.

11. Recurrent Herpes Gestationis.—Bryan reports a case of this kind occurring in a multipara. There was no history of syphilis. The rash appeared on the arms and consisted of erythema, papules and vesicles. It was irritating and painful. A few patches, without vesication, appeared on the thighs and body. The patient was about five months pregnant. The rash gradually extended over the rest of the body, leaving only the palms and the soles free, though the face was only affected by one or two spots. When the pain and irritation were most severe the forearms became hot and swollen and the vesicles were continually bursting, the fluid from them giving a sensation of scalding to the arms, whilst fresh crops rapidly appeared. These symptoms produced a good deal of insomnia. Treatment was futile. After six weeks of the disease the death of the fetus was diagnosed. The patient was delivered of a dead fetus and the rash gradually disappeared. About ten months later she again became pregnant and the rash reappeared. The eruption was always at its worst when the patient should have had her catamenial period, remaining at its height for about a week and then gradually subsiding, but never disappearing entirely.

13. Double Vaginal Cysts.—Jones' patient was a married woman, aged 35 years. She had had no children. In curetting for endometritis Jones found a cystic tumor of the size of a large pigeon's egg in the vaginal vault. Three months later the patient returned complaining of vaginal distress and pain. Low down on the posterior wall of the vagina was another cyst distended with fluid and nearly of the size of the one removed previously.

Journal of Tropical Medicine, London.

February 15.

- 15 Rhinopharyngitis Maligna (Destructive Ulcerous Rhinopharyngitis). A Problem in Tropical Pathology. J. P. Leys.

Australasian Medical Gazette, Sydney.

January 20.

- 16 Treatment of the Paroxysmal Neuroses. W. N. Robertson.
- 17 Note on Precipitins. D. A. Welsh.
- 18 A Case of Brucyrdia. S. Gilles.
- 19 Etiology of Dengue Fever. T. L. Bancroft.
- 20 *Ectopic Gestation During Lactation. R. E. Weigall.
- 21 Eclampsia During Pregnancy and the Puerperium. L. R. Steele.
- 22 Perforating Ulcer of Duodenum: Operation; Recovery. J. Harris.

20. Ectopic Gestation During Lactation.—Six months after the birth of a child, and while the mother was nursing the baby, Weigall removed intact a perfect specimen of a tubal pregnancy about three inches in diameter, in the last inch of the tube near the fimbriated extremity. The uterus and tubes appeared to be normal. There were none of the usual symp-

oms of extrauterine pregnancy. The diagnosis was based on the softening of the os uteri and the presence of a rapidly forming tumor.

Annales de l'Institut Pasteur, Paris.

Last number, page 696.

- 23 (XX, No. 1.) Etudes sur les bacilles paratyphiques. E. Saequpée and F. Chevrel.
- 24 *Etudes sur la fièvre jaune (yellow fever). E. Marchoux and P. L. Simond.
- 25 *Histologie pathologique de la syphilis héréditaire dans ses rapports avec le "spirocheta pallida." C. Levaditi.
- 26 Etude du méningococque. P. Vansteenberghe and Gryse.

24. Report of the French Yellow Fever Commission in Brazil.—In this second report Marchoux and Simond explain that the *Stegomyia fasciata* is the only mosquito known which does not die after depositing its first batch of eggs. The female *stegomyia* is able to survive and to lay several batches. This long survival allows the virus of yellow fever time to develop in its body so that it is capable of infecting man. If it died regularly after laying its first batch of eggs—like other mosquitoes—yellow fever would be unknown among human beings. It is possible also, they add, that the virus is adapted to the organism of this special mosquito to the exclusion of all others. Infection of the *stegomyia* by heredity is possible, and a recently extinct focus might be relighted by this means. This fact is important for prophylaxis, although as a rule, infection by inheritance does not seem to play a very prominent part in the spread of yellow fever. The *stegomyia* does not eat the blood from the hemorrhages common during the second phase of yellow fever, nor the fluid of the black vomit nor the dejecta. The mosquito, even in captivity, does not feed on this material unless compelled by starvation. The larvae of the *stegomyia* raised in water containing fresh carcasses of infected mosquitoes do not contract infection, and the adult mosquitoes developing from them have no infecting power. When the infected *Stegomyia fasciata* is kept at a temperature of about 20 C. (68 F.) it does not seem to possess infecting power. In all their experiences at Rio de Janeiro the members of the commission never succeeded in infecting the *stegomyia* from persons during the incubation stage of yellow fever. The virus of yellow fever can be artificially transmitted from mosquito to mosquito in the laboratory, but probably not under natural conditions. They never succeeded in making several successive passages. They had only a single positive result in numerous experiments in which they tried to induce infection by hereditarily infected mosquitoes. The successful infection realized in this one case also proved to be exceptionally mild, suggesting that possibly the virus may become attenuated by its hereditary transmission.

25. *Spirochaeta Pallida* in Inherited Syphilis.—Levaditi describes with colored plates the histologic findings in 4 syphilitic new born infants, and in an infant who had succumbed to pneumonia, and in a macerated fetus from syphilitic parents. The *Spirochaeta pallida* was found in large numbers in the liver, lungs, suprarenal capsules, and skin, most numerous in the order named; it was comparatively rare in the other organs. The finding of such large numbers of these spirochetes in the macerated fetus, and also in those infants who had died after breathing only once or twice, disproves the assumption that the spirochete might be an agent of secondary infection. In the cases of acute and rapidly fatal syphilitic infection in these infants the spirochetes were found more diffusely distributed throughout the organism, while in the one case of tardy inherited syphilis the parasites seem to have been mainly confined to the organ principally affected by the syphilitic process, namely, the liver. This localization of the spirochetes in the viscera of the offspring of syphilitic parents suggests the possibility of an inherited syphilis exclusively confined to the splanchnic organs. It might develop without any syphilitic manifestations on the skin or mucous system. This essentially visceral form of syphilis might precede the appearance of external syphilitic lesions, and is interesting from the questions in regard to prophylaxis which it raises. The paternal origin of the inherited syphilis seems certain in one of the cases described. The spirochetes do not seem to linger by preference in the blood, but fasten themselves in the vessel walls and multiply there, passing thence into the cells of the

parenchyma and the connective tissue. They seem to be able to penetrate into the relatively intact protoplasm of certain epithelial elements, such as the cells of the liver and kidneys, of the suprarenal capsules, and probably those of the sweat glands. The pathogenesis of syphilitic lesions is thus explained by the findings of the spirochetes as they are traced through the endoarteritis and periarteritis into the connective tissue (infiltration by mononuclears and sclerosis), and then into the cells of the parenchyma (degeneration of the parenchyma). The maceration of a syphilitic fetus is probably an autolytic, fermentative process in dead tissues. The intrauterine death may be due to intense spirochete infection. Evidence of active phagocytosis against the spirochetes were apparent in all the infants. (See editorial.)

Bulletin de l'Académie de Médecine, Paris.

- 27 (Year LXX, Nos. 5-6.) *Emigration et santé publique (public health). Chantemesse and F. Borel.
 28 *Sur la statistique et la prophylaxie de la tuberculose.
 29 *Phrenoptosis. F. Glénard.
 30 Assistance médicale et hygiène publique indigènes à Madagascar pendant l'année 1904. Kermorgant and others.

27. Emigration and Public Health.—Chantemesse calls attention to the lax measures in vogue in regard to emigrants passing through France to embark for America. He contrasts them with the strict regulations of the United States authorities, especially those enforced before allowing the embarkation of prospective emigrants on vessels bound for our ports. He states that nearly all emigrants from Greece, Syria, etc., pass through France, a total of 70,000 in 1904, and they are under no sanitary supervision after they arrive in southern France and are transported to Havre, changing cars frequently en route. Those found by the steamship company's medical inspectors to have a serious disease that would bar their admission to the United States are sent back to their country, while those with readily curable diseases, or those delayed for the five-day quarantine are boarded out in the town. They report to the inspector every day, and when cured are allowed to embark. In the interim they are liable to spread infection through the hotels and lodging houses where they stop while under treatment, entirely free from any medical sanitary inspection on the part of the town authorities. When rejected as suspicious by the inspectors they wander around the streets of the city ready to spread contagion if the suspected disease actually exists. The French laws on the subject of emigrants date from 1861, and he urges the passage of new ones to place the emigrant service on the same footing as in other European countries and in the United States.

28. Statistics and Prophylaxis of Tuberculosis.—The prolonged discussion on this subject shows how misleading statistics are liable to cause mistaken conclusions. The discussion brought out the experience of many practitioners, some advocating and others opposing compulsory notification of cases of tuberculosis. Nearly all accept the importance of notification of cases of death from the disease for disinfection of the apartment. It seems that the mortality from tuberculosis is much higher in France than in Germany, and that it is constantly increasing.

29. Phrenoptosis.—Glénard is the apostle of splanchnoptosis and here describes a condition which he calls phrenoptosis, that is, downward displacement of the diaphragm. He considers it responsible for the conditions known as movable heart and cardioposis, defining movable heart as a cardioposis, while the cardioposis is the consequence of the phrenoptosis; the phrenoptosis in turn is merely an accessory episode of the general tendency to ptosis. He states that enteroptosis is a nutritional affection of hepatic nature. The same causes that induce liver affections preside over its origin. It is a malady built up from detached fragments of five morbid groups: dyspepsia, neuropathies, liver affections, nutritional disturbances, and a fifth group which includes movable kidney, movable liver, movable spleen, and movable uterus. It is the character of the ptosis which cements together these fragments. Enteroptosis is the cause of one-third of all the dyspepsias and neuropathies in women, and in every 100 cases fully 80 of the patients are women. Once recognized it is readily curable, but it is incurable when not

diagnosed and the special indications treated. The efficacy of appropriate treatment, he believes, is one of the arguments in favor of accepting the affection of a definite morbid entity. The most effectual measure in combating the condition is an appropriate sustaining corset, as he has described in detail in various communications. The latest appeared recently in the *Revue des Maladies de la Nutrition*, 1905.

Presse Médicale, Paris.

- 31 (XIV, No. 6.) Sur les septiciémes en général et les septiciémes méningococciques en particulier. Follet and Saccagnotte.
 32 La sémiologie urinaire des opérés (urine after operations). E. Vidal.
 33 (No. 7.) Elévation congénitale de l'omoplate (of the scapula). A. Broca.
 34 Le meilleur procédé d'entérorrhaphie après enterectomie. P. Desfosses.
 35 (No. 8.) L'ouverture de la pleure sans pneumothorax. T. Tuffier.
 36 Existe-t-il une stomatite provoquée par les dentiers en caoutchouc (rubber tooth plates)? C. Mahé.
 37 (No. 9.) De la sémité. A. Létienne.
 38 Radioscopie gastrique. G. Leven and G. Barret.
 39 (No. 10.) Les oblitérations artérielles par embolie dans le cours des maladies du cœur (heart disease). E. Baré.
 40 (No. 11.) L'albumine dans l'alimentation des tuberculeux. II. Labbé and G. Vitry.
 41 *L'intoxication saturnine et traitement de la colique de plomb. Delafarde and E. Dubois.
 42 La méthode de Bier et le massage dans les contusions et les entorses (sprains). R. de Gaulejac.

35. Opening the Pleura Without Pneumothorax.—Tuffier recalls his research in 1895 in which, with Hallion, Quénu and Longuet, he demonstrated that it is possible to inflate the bronchi sufficiently to prevent retraction of the lung when the chest is opened, without interfering with the general circulation. An apparatus was devised and presented to the Société de Chirurgie with which the patient breathed only air under pressure. The apparatus is merely a tube introduced through the mouth into the trachea; an elastic bag around the tube is inflated to plug the air passages outside of the tube. Air under pressure can then be pumped through the tube into the lung and all retraction prevented. It proved very successful on dogs. At first his apparatus was regarded as too complicated in comparison with the benefits to be gained from it, pneumothorax not being regarded by others as such a drawback as he considered it. The subject gained new interest, however, when Sauerbruch invented his air chamber in which operations are performed under minus pressure, while the head of the patient projects outside the chamber and the anesthetic is given outside. Brauer's apparatus reverses the principle, the head of the patient being inside a small air chamber in which the air is kept at plus pressure. This principle is the same as that on which Tuffier's early apparatus was based. Tuffier has performed three important operations with the aid of the Brauer hyperpressure apparatus. (He has both the Sauerbruch and the Brauer apparatus installed in his service.) It worked to perfection, he says, but both this and the Sauerbruch chamber are so extremely complicated that his early apparatus based on the same principle as Brauer's, seems simplicity itself in comparison. He gives illustrations of it (as also of the Sauerbruch and Brauer apparatus), and describes its workings in his experimental experiences with it. The Sauerbruch chamber might be utilized, he remarks, in operating on the brain or elsewhere when venous hemorrhage is feared. Under strong minus pressure there would be less danger that the veins would bleed much. The Brauer apparatus can be used only for operations on the lungs. In all work of the kind, Tuffier suggests that mixing oxygen with the air inhaled would lighten the task of the lungs, and facilitate the operation.

41. Treatment of Lead Colic.—Delafarde and Dubois report the successful application of epidural injections of cocaine as a means of relieving lead colic. No disturbances were observed in any of the 16 cases in which this treatment was applied. The pain vanished almost at once after the lumbar injection of the anesthetic.

Archiv f. Gynäkologie, Berlin.

Last index, page 601.

- 43 (LXXVII, No. 3.) Bedeutung der Hystereuse in der Geburtshilfe (hystereuse in obstetrics). O. Bürger (Schnaust's clinic, Vienna).
 44 Ueber Acardius. A. Bauerelsen.

- 45 Fatal Nephritis in Parturients Without Eclampsia.—Tödliche Nephritis bei Gebärenden ohne Eklampsie. W. Poten.
- 46 *Ueber Cervix-Verletzungen bei Primiparae (lacerations). P. Scheurer.
- 47 Behavior of Relics of Ovary in Case of Dermoid Cysts.—Verhalten des Eierstocksrestes bei Dermoidcysten, insbes. über ovarielle Fettersorption. A. Gcuttil.
- 48 Zur Kasuistik der extramembranen Gravidität. W. Pfeilsticker.

46. Laceration of Cervix in Primiparae.—Scheurer reviews 99 cases of laceration of the cervix in primiparae. Bleeding was the only symptom that called attention to the tear, and this was sometimes out of all proportion to the extent of the laceration. In more than one-fourth of all the cases the laceration involved more than half of the vaginal portion of the cervix. More than 50 per cent. of the extensive lacerations occurred in deliveries in which obstetric-operative measures had been applied. Abnormal position of the head and large size of the child favor injury of the cervix. It was impossible to detect any influence on the morbidity of the puerperium or on the involution of the uterus from the lacerations.

Deutsches Archiv f. klinische Medizin, Leipzig.

Last indexed XLV, page 1833.

- 49 (LXXXV, Nos. 3-4.) Aspergillus niger bei Pneumomykosis aspergillina. W. Risel. One case.
- 50 *Klinische und experimentelle Untersuchungen über Trichinosis und über die Eosinophilie im allgemeinen. C. Stäubli.
- 51 Zur Pathologie der Asthma bronchiale. P. V. Jozerski.
- 52 *Blood Pressure and Hypertrophy of Heart in Nephritis.—Ueber Blutdruck und Herzhypertrophie bei Nephritikern. A. Loeb.
- 53 Fall von Adams-Stokes'scher Krankheit mit Dissoziation von Vorhof- und Kammer-Rhythmus. Lichtelm.
- 54 4 Fälle von Störung der Reizleitung im Herzmuskel (disturbance in conduction of stimuli by heart muscle). G. Joachim.
- 55 Action of Light on Enzymes Compared with Action of Photodynamic Substances.—Wirkung des Lichtes auf Enzyme in Sauerstoff- und Wasserstoff-Atmosphäre, verglichen mit der Wirkung der photodynamischen Stoffe. A. Jodlbauer und H. v. Tappeler.
- 56 "Dark Action" of Fluorescent Substances.—Weitere Untersuchungen ob eine "Dunkelwirkung" der fluoreszierenden Stoffe statthalt. Id.
- 57 Ueber die Wirkung fluoreszierender Stoffe auf Toxine. Id.
- 58 *Eserinismus und Trichinose (study of gout). J. J. van Loghem (Amsterdam).
- 59 (Nos. 5,6.) *Neue Beiträge zur Lehre von der Muskel-Atrophie bei supranukleären Lähmungen, bes. bei der cerebralen Hemiplegie. H. Steinert.
- 60 *Zur Pathogenese der Tetanie. F. Pineles.
- 61 *Neuere klinisch-bakteriologische Erfahrungen bei Typhus und Paratyphus. A. Brion und H. Kayser (Strasbourg).
- 62 Die nosologische Stellung des Symptomkomplexes "Abdominaltyphus". Id.
- 63 Untersuchungen über das Lokalisations-Vermögen und das stereognostische Erkennen. A. Schittenhelm.
- 64 Ueber Myasthenie bei sexuellem Infantillismus, nebst Untersuchungen über die myasthenische Reaktion. H. Curschmann und N. Heding.
- 65 Ueber Bronchitis obliterans. Edens. Three cases.
- 66 Embolie der Lungen-Arterie. C. Hart. Supplement to article of Vol. 84.
- 67 Blood Pressure and Pulse Pressure. Reply to Felner's article. J. Strasburger.

50. Trichiniasis and Eosinophilia.—Stäubli's experience with 7 cases of trichiniasis emphasizes anew the value of eosinophilia as a sign of the affection. The number of eosinophils began to increase about nine days after ingestion of the infected meat. The eosinophilia, he shows, is connected with the migration of the embryos or their penetration into the muscles. The young brood are distributed by way of the vascular system; large numbers being evident at times in the blood of the heart. He saw no evidences of local production of eosinophils at points where the muscle was specially invaded. The eosinophilia must be regarded, he states, as a reaction on the part of the organism to substances which pass into the blood from the embryos, or possibly from the degenerated muscle substance. His experiments on animals confirmed the assumption that a rapid destruction of lymphocytes is a bad sign. Four of his cases terminated fatally, and in these he noted the combination of Kernig's sign and absence of the knee jerks. In all his cases the diazo reaction was pronounced, a point which may aid in differentiation.

52. Blood Pressure and Hypertrophy of Heart in Nephritis.—Loeb insists that the high arterial pressure is primary and the hypertrophy of the heart a secondary phenomenon in acute and chronic nephritis. He accepts the elevation of the blood pressure as a regulating phenomenon—the work of the glomeruli. Whether this occurs by chemical or reflex means is still a question. The arterial pressure in his experience

always rose when uremia was impending or established. Patients leading tranquil lives, on a light diet, kept the blood pressure at a moderate height. Change to a mixed diet, especially when meat and salt were taken, always increased the pressure.

58. Experimental Study of Gout.—Van Loghem summarizes the results of his research in the statements that uric acid and sodium urate are soluble in the body fluids of the rabbit and dog, the former much more than the latter. Alkalies taken internally favor experimental deposition of the urates, while acids prevent it. This suggests, he adds, the possibility that hydrochloric acid might be used for a rational prophylaxis of the formation of urates in man.

59. Atrophy of Muscles in Cerebral Paralysis.—Steinert has been studying the muscular atrophy in 68 cases of paralysis. His results harmonize with the conclusions of previous similar research, and throw light on several new points. It seems to be an established fact that cerebral paralysis of the extremities is followed by atrophy of the muscles in the limbs as regularly as is the case in every peripheral paralysis. He found the atrophy more pronounced in the cases of flaccid than of spastic paralysis.

60. Pathogenesis of Tetany.—Pineles presents an array of arguments to prove that all forms of tetany in man and animals have a common origin in an insufficiency of the "epithelium bodies," the parathyroids. The thyroid gland may be entirely removed, without subsequent tetany, if they are left intact. These bodies perform the task of rendering innocuous certain toxic substances generated in the body. These toxins are the tetany toxins, and when the organism is not protected tetany is liable to develop. He is at work now on an extract of the parathyroids which he hopes will prove an effectual remedy for the prevention and cure of tetany.

61. Latest Views of Typhoid and Paratyphoid.—During the last two years Brion and Kayser have made extensive clinical and bacteriologic studies in over 200 cases of typhoid fever. The definition of infection with the Eberth-Gaffky bacillus, based on their findings, is merely the vague description: "a febrile condition not to be explained by any evident findings in any organ, and in which there is no exanthem nor special course characteristic of any other disease." This definition is important theoretically, as it shows that it is impossible to determine any clinical symptomatic entity from the identity of the causal agent of the infection. They ascribe infection to the tonsils: "The portal of entry lies either in the gastrointestinal tract or above the stomach, perhaps in the region of the tonsils. The frequent positive bacteriologic findings in the tonsils suggest the plausibility of the latter assumption, and explain the first symptoms of typhoid—which are always of a general nature—as due to the entrance of the bacilli from the tonsils into the lymphatic system and thence into the blood. The bacilli were found in the blood at the very beginning of the disease in 94 per cent. of the cases, and they gradually disappeared from the blood as the disease progressed. The bacilli circulating in the blood and lymph induce the characteristic foci in spleen and liver, in the mammary and other glands, and in the intestine, in the brain, lungs and serous membranes, and in the skin (roseole). Any organ may be affected, the lymphatic apparatus with especial frequency. The lesion in Peyer's patches is a phenomenon co-ordinated to the entire process, only it occurs with exceptional frequency. It is entirely absent in some cases, and this seems to be the rule in children. After the bacilli have disappeared from the blood and other organs they may lurk for months and years in the gall bladder, particularly when there is residual bile from the presence of gallstones. The typhoid affection may persist in the gall bladder as a purely local process for a long time. The irritation of the body cells from the presence of the bacteria results in the production of substances which pass into the body juices and are the cause of agglutination and of the specific bactericidal action." Their experiments with animals and with human subjects effectually demonstrated that the intestinal tract is not a favorable soil for the settling of the typhoid bacillus. Its growth is checked or it is entirely destroyed in the intestines. They regard it as difficult to imagi-

ine any circumstances which would render it possible for the bacilli to make their way primarily into the blood through the intestinal walls. One of their findings to which they call attention is the spasmodic way in which the bacilli were found in the dejecta; at intervals none was to be found in the diarrhetic stools, even at the height of the disease. In a number of dubious cases—which later proved to be typhoid—no typhoid bacilli could be discovered in the stools at first. This is another argument in favor of the assumption that typhoid does not always commence in the intestines, but may start as a lymph and blood affection (possibly entering by way of the tonsils). The positive findings in the stools always increased from about 32 per cent. in the first week to about 45 per cent. in the third week. As the final conclusion from this extensive research, Brion and Kayser assert that the assumption of the symptom-complex of typhoid fever as an etiologic entity must be abandoned. It must be regarded as a group of affections not to be differentiated clinically, whose causal agents form a special group apart.

Deutsche medizinische Wochenschrift, Berlin und Leipzig.

- 68 (XXXII, No. 3.) •Versuche zur Uebertragung der Syphilis auf Affen (transmission to monkeys). Neisser.
- 69 What Has the General Practitioner Gained from the Progress in Surgery of the Kidneys?—Was ergibt sich für den praktischen Arzt aus den Fortschritten der Nierenchirurgie? H. Kütter.
- 70 Ueber Exsudat-Zellen im allgemeinen und die Exsudat-Zellen bei verschiedenen Formen von Meningitis im besonderen. J. Orth.
- 71 Ueber die diätetische Behandlung des Magengeschwürs (of gastric ulcer). H. Senator.
- 72 Ueber den derzeitigen Stand der Tuberkulose-Bekämpfung (present status of war against tuberculosis). R. Koch.
- 73 Exstirpation einer malignen Nierengeschwulst (kidney adenocarcinoma in boy of 3. Recovery). F. Cuno and Trapp.
- 74 Ueber Tonsillar-Tuberkulose. O. Reuner.
- 75 •Eine Methode zur schnellen und billigen Herstellung von Projektionsbildern (rapid and cheap lantern slides). Schumburg (Hannover).
- 76 (No. 4.) •Ueber Operationen am Pankreas und am Magen (stomach). W. Körte.
- 77 •Ueber *Framboesia tropica* (Yaws). A. Castellani (Colombo, Ceylon).
- 78 •Pyrokin Anemia in Dogs.—Pyrokinvergiftung bei Hunden. M. Rothmann.
- 79 •Zur Differential-Diagnose des Hen-Asthmas gegen die anderen Asthma-Formen. A. Wolf-Eisner.
- 80 Die Quantitation in der Hunden des praktischen Arztes (in hands of general practitioners). W. Loele.
- 81 •Eine neue Methode der quantitativen Aceton-Bestimmung. F. Bluth (Neuenahr).

68. Transmission of Syphilis to Monkeys.—The results of Neisser's extensive researches were mentioned in the news columns on page 287. He had nearly 900 monkeys at his disposal, and found that the lower types, as well as the higher, were susceptible to syphilitic infection, although in a lesser degree. The general symptoms observed in the higher animals seldom appeared in the lower types. The animals were inoculated by rubbing the material into deep scarifications. Subcutaneous injection of material or vaccine always gave a negative result. The sound organism seems to be able to destroy the virus inoculated into the subcutaneous tissue, although it may prove to be possible to produce an antitoxin in this way. Passage of the virus through several animals seemed rather to enhance than to attenuate its virulence. The *Spirochæta pallida* was found in a number of cases, confirming Schaudinn's statements. Neisser's assistants, Baermann and Halberstädter, have been left behind in Batavia and are continuing the research. To date it has not resulted in any definite general conclusions.

75. Inexpensive Lantern Slides.—Schumburg outlines the drawings on a sheet of glass, fixed with shellac and coated with soot.

76. Operations on Pancreas and Stomach.—Körte has operated on 6 patients on account of acute pancreatit and fatty necrosis, with a favorable outcome in every instance. Early intervention and drainage are able, he thinks, to prevent the spread of the pancreatitis and suppuration. He describes the details of his 2 last operations of this kind, and also of 7 operations on the stomach. He operates without delay even in the acute stage of pancreatitis, hoping thus to avert suppuration and necrosis. The attack resembles gallstone colic except that there is more collapse, and symptoms of peritonitis develop in the upper abdomen. In one of his stomach cases

there was great dilatation of the stomach without stenosis of the pylorus. The extreme gastropsis kinked the pylorus, and also entailed complete motor insufficiency. All his patients recovered except one who had cancer of the stomach on a basis of gastric ulcer. The patient, a woman, deferred the operation until she became too weak to rally.

77. Spirochetes in Yaws.—Castellani states that he found spirochetes of the pallida type in 11 out of 14 cases of typical yaws on the island of Ceylon.

78. Experimental Anemia.—Rothmann has been studying the spinal cord of dogs after severe anemia had been induced by means of pyrokin. A systematic degeneration was evident, even when no functional demands were made on the cord.

79. Differentiation of Asthma.—Eisner has encountered a number of cases in which the symptoms indicated hay fever or asthma, but the absence of reaction to pollen disclosed that the asthma was a purely nervous affection. He makes the pollen test with pollen of grains, grasses and corn; he grinds it in salt solution and centrifugates it. If the albuminous solution thus obtained is introduced into the eye of a susceptible individual, the eye itches, becomes bloodshot, and in the severer cases the usual train of hay fever symptoms follows unless aborted by appropriate measures. Among 100 asthmatic persons thus tested in Berlin, only 4 were found who failed to show the specific reaction to the pollen. This shows that the tendency to hay fever is more prevalent in Germany than hitherto supposed, as the pollen test causes no disturbance whatever in normal persons. In conclusion, Eisner discusses the reasons for absence of antitoxin formation after injection of albumin.

81. Quantitative Test for Acetone.—Bluth's test is based on the delay in the change of tint when the urine is treated with sodium nitroprussid, sodium hydrate and acetic acid. The more acetone present, the longer the interval before the change of tint. His test, he says, dispenses with repeated distillation and subsequent titration; it requires only from fifteen to thirty minutes, and in regard to accuracy leaves nothing to be desired.

Deutsche Zeitschrift f. Chirurgie, Leipzig.

Last indexed, page 287.

- 82 (LXXXIX, Nos. 4-6.) •Die Reposition der Luxatio obturatoria durch Ruck nach aussen. Riedel.
- 83 •Ueber den Wert der Mobilisierung des Duodenums bei Operationen wegen Steinen in den tiefen Gallenwegen (in gallstone operations). H. Lorenz.
- 84 Zur Wirkungsweise der Röntgen-Strahlen (mode of action of rays). O. F. Schütz and H. S. Hoffmann.
- 85 Zur Pathologie, Diagnostik und Therapie des schneidenden Fingers (trigger finger). Marchesi.
- 86 •Ueber Cysten-Nieren bei Erwachsenen (cystic kidney in adults). F. Sieber.
- 87 •Zur Pathologie und Chirurgie der Osteomyelitis zumusso der langen Röhrenknochen (of long bones). M. Landow.
- 88 Application of Mobilizing Action of Hyperemia to Scoliotic Stiffness.—Anwendung der mobilisierenden Wirkung der Hyperämie auf skoliotische Versteifungen. R. Klapp (Bier's clinic, Bonn). See abstract on page 625.
- 89 Neues operativ-autoplastisches Verfahren bei narbiger Kieferklemme (cleft-jaw). R. Alessandrini (Rome).
- 90 •Nachbehandlung der chirurgischen Tuberkulose (after-treatment). C. Kraemer.
- 91 Changes in Testicle of Rat After Application of Radium Rays.—Ueber die feineren Veränderungen im Hodengewebe der Ratte nach Einwirkung der Radiumstrahlen. H. A. Thaler.
- 92 Subluxation des zweiten Keilbeins (of second cervical bone). Bergmann.

82. Dislocation of Head of Femur Through Obturator Foramen.—Riedel observes that many experienced surgeons have never encountered this condition, but he has had 3 such cases. He was able to reduce the dislocation by a simple maneuver which he describes.

83. Mobilization of Duodenum as Aid in Deep Gallstone Operations.—Lorenz describes the particulars of 5 cases of gallstones, requiring intervention in the deep biliary passages, in which he mobilized the duodenum as a preliminary measure. The advantages of this procedure were very great, and it was easily accomplished, although the conditions were exceptionally grave.

86. Polycystic Degeneration of the Kidney.—Sieber's long article discusses the origin of the condition and describes a case personally observed in a woman of 46. He then summarizes 211 cases he has found in the literature, all in persons

over 20 years of age. He further refers to 32 published reports of cases in children from 8 weeks to 19 years old. In 9 cases the affection was found to be unilateral and in 150 bilateral. In the others the condition of the second kidney was not mentioned. In about one out of every 8 cases the affection caused no symptoms during life and was an autopsy surprise. In 62 cases nephrectomy was undertaken, generally on a mistaken diagnosis, and death followed in 20 out of the 61 cases in which the result is known. In 9 of the remaining 41 cases symptoms developed later indicating disease in the other kidney. Sieber concludes from his summary that operative intervention in case of polycystic degeneration of the kidney should not be advised unless under compelling circumstances, such as suppuration and anuria. Under other conditions, expectant, palliative treatment should be the rule. All injurious influences that might increase the demands on the kidneys should be warded off, and the heart action should be carefully supervised. The treatment, on the whole, should be similar to that for contracted kidney. On account of the frequent hereditary character of the affection the patient's near relatives should also be examined and warned to avoid all injurious influences liable to favor the development of a kidney affection. The symptoms of polycystic degeneration are uncertain and the course of the affection is irregular, so that the diagnosis is difficult. Only 21 of the cases on record were correctly diagnosed during life. The first and most important symptom is generally the increase in size of the kidneys. These organs may become so much enlarged that they nearly touch on the median line, although one is usually much larger than the other. In only 26 cases was it possible to palpate a tumor on both sides. Pain may or may not be present, and the urine is not characteristic. It is generally acid, limp and bright yellow, with little sediment. Hematuria was noticed in about a fifth of the cases. The general symptoms are all more or less the consequences of a chronic or acute uremia. The digestive apparatus is especially affected, and its disturbances may overshadow all the other symptoms, sometimes for years.

87. **Gummatous Osteomyelitis of Long Bones.**—Landow found it difficult to differentiate a case of osteomyelitis in the long bones of a girl of 16. The symptoms and location of the lesions suggested a tuberculous process. Hyperostosis of the tibia and the fact that none of the bone foci had ever displayed a tendency to suppurate, cast some doubt on this diagnosis. The idea of syphilis was discarded, as no trace of it could be found in the history and there were no other signs of syphilis, while Landow was assured that prolonged treatment on the assumption of inherited syphilis had been applied previously without any result. Operations disclosed extensive osteomyelitis and necrosis of the bones, but no tubercles nor staphylococci. Proper antisiphilic treatment cured the recent foci, but operative intervention was required for the old lesions. The patient was restored to comparative health.

90. **Necessity for After-Treatment of Surgical Tuberculosis.**—Kraemer cites a number of instances from his own experience in which patients apparently healthy for a few years after operative treatment of some local tuberculous lesion, later developed pulmonary phthisis. The persistence of a latent focus after what was supposed to be radical extermination of the tuberculous process would have been revealed in these cases if tuberculin had been injected after the operative wound had healed. He consequently advocates testing with tuberculin as a routine measure after he healing of any surgical or gynecologic tuberculous process treated by conservative or operative measures. The tuberculin test will show either that the patient is free from tuberculosis, in which case he can be dismissed from further treatment, or that some latent focus still persists, in which case the local reaction will frequently point to the site of the lesion. Persons in this latter category should be given appropriate treatment until their entire freedom from tuberculosis can be definitely established. By these means it will be possible to save these individuals from a revival of their tuberculous affection by propagation of metastasis, and also to protect other persons from contamination by their infectious secretions, and unborn children from inherited infection. It should be accepted as a prin-

ciple that every individual with a latent tuberculous focus is to be regarded as already a candidate for consumption, and treated accordingly.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed, page 79.

- 93 (LVIII, Nos. 1-2.) Studien über die Beziehungen zwischen optischer Aktivität und Reduktion bei diabetischer und nicht diabetischer Glykoseurie. H. v. Goeblmeyer.
- 94 Infektion mit Ankylostomum duodenale von der Haut aus (through the skin). A. Looss.
- 95 Chemische Composition of Blood and Organs.—Weitere Untersuchungen über die chemische Zusammensetzung des Blutes und verschiedener menschlicher Organe. M. Denstedt.
- 96 Beitrag zu den Purpura-Erkrankungen. II. Rissel.
- 97 Ueber paroxysmale Hämoglobinurie. J. Donath and K. Landsteiner.
- 98 Stoffwechseluntersuchungen bei einem Fall von Pentosurie (metabolism). Tietemann.
- 99 Zur Mechanik der Expiration. E. Aron.
- 100 (Nos. 3-4.) *Experimentelle Untersuchungen über die Viskosität des Blutes. J. Bence.
- 101 *Experimentelle Untersuchungen über die physiologische Bedeutung der Radioaktivität der Mineral-Wässer. P. Bergell und A. Bickel.
- 102 Zur Kenntnis der Rückenmarksveränderungen nach Verschluss der Aorta abdominalis (changes in spinal cord after obstruction of aorta). A. Alexander.
- 103 *Cytologie der Cerebrospinal-Flüssigkeit bei Nervenkranken (in nervous affections). E. Samele.
- 104 *Fall von geheiltem Aneurysma dissecans der Aorta (healed). H. Börger.
- 105 Experimentelle Untersuchungen über die Entstehung der Harnsteine (tube-casts). I. S. Wallerstein (Moscow).
- 106 *Einfluss des Wassergehaltes des Blutes auf die Dimensionen der roten Blutkörperchen (influence of proportion of water in blood on size of reds). M. Georgopoulos.
- 107 *Blood Findings in Children with Adenoid Vegetations.—Blutbefund bei Kindern mit Wucherungen des Nasenrauhens. M. Scheler.
- 108 Origin of Renal Dropsy.—"Folgen subkutaner Kochsalzzufuhr nach Nephrektomie." A. Albu.

100. **Viscosity of the Blood.**—The research reported by Bence was conducted at von Koranyi's clinic at Budapest. It shows that the viscosity of the blood increases and subsides with the proportion of carbon dioxide in the blood. The latter acts on the red corpuscles, modifying their size and surface, and thus rendering the blood more or less fluid. The relations between the proportion of carbon dioxide and the viscosity can be observed in the circulating blood. The increasing viscosity of the blood from excess of carbon dioxide overburdens the heart. If the overcharge of carbon dioxide is the consequence of cardiac insufficiency, it tends in turn to increase the latter. Inhalation oxygen in appropriate cases reduces the viscosity of the blood unduly laden with carbon dioxide, as it promotes the elimination of the latter. By this means it is possible to relieve to a certain extent the overburdened heart. The blood in nephritis is less viscous than normal blood, probably from the excess of water. Attempts to influence the viscosity of the blood by varying the food gave negative results in his experiments on animals.

101. **Physiologic Significance of Radioactivity of Mineral Waters.**—Bergell and Bickel have been continuing their research on this subject, their findings corroborating their previous assertions in regard to the powerful physiologic and biologic influence of the natural radioactive emanations of the mineral waters. All observations to date have shown that waters rising from the depths of the earth are endowed with marked radioactive powers while surface spring waters are comparatively free from it. The waters lose their radioactivity rapidly after they are taken from the earth. Tests with Wiesbaden thermal waters showed that the digesting power of gastric juice in a test-tube was increased by the radioactivity. If thermal water was added to pure gastric juice, the digesting power of the juice was reduced by the dilution, but the reduction was less marked when the waters were still radioactive than when they had lost their radioactivity. Kalmann has recently announced that Gastein waters arrest the development of the *Bacillus prodigiosus* as long as they still possess their radioactivity, but not after they have lost it. The conclusions of the research all point to the assumption that it is possible for physiologic and biologic processes to be influenced by the radium emanations in mineral waters.

103. **Cytology of Cerebrospinal Fluid in Nervous Affections.**—Samele tabulates his findings in a dozen cases of tabes, meningitis, paralysis or other nervous affections. They differ from those of other investigators in certain respects, as he re-

lates in detail, comparing them with the data in previous articles on the subject.

104. **Healed Dissecting Aneurism of the Aorta.**—Bürger has found 18 cases of dissecting aneurism of the aorta terminating in recovery on record in the literature, and describes a case personally observed at Erlangen. The aneurism in this case was evidently the result of a so-called internal trauma. It healed as the dividing wall became perforated, allowing the layers of the wall to grow together once more. The conditions in the circulation, however, had been rendered so unfavorable that the already hypertrophied heart gave out in the course of a year.

106. **Influence of Water Content of Blood on Size of the Red Corpuscles.**—The research described was made on 200 patients with dropsy, severe diarrhea or other conditions causing great difference in the proportion of water in the blood. It demonstrates that hydraemia has nothing to do with the production of megalocytes. Also that the biconcave microcytes are intact red corpuscles.

107. **The Blood in Children with Adenoid Vegetations.**—Scheier found the proportion of hemoglobin about 13.8 per cent. below normal in the children with adenoid vegetations whom he examined. The red corpuscles were about the usual number, but there were always from 14,000 to 17,000 white corpuscles, and sometimes 21,000 and 24,000. The small and large lymphocytes were unusually numerous, and the multinucleated somewhat diminished. A slight degree of chlorosis with leucocytosis, specially lymphatic, was the rule. Removal of the growths caused improvement; the hemoglobin rose to 74, 80 or 92 per cent. in the course of from one to several months afterward, while the leucocytosis declined. In conclusion he remarks that the adenoid vegetations in the nasopharynx are not the only manifestations of hyperplasia in the lymphatic system. The lymph glands in the neck and under the jaw are always more or less swollen in these cases. The swelling almost invariably subsides after removal of the adenoid vegetations, and the somewhat low blood pressure rises to approximate normal.

Nordiskt Medicinskt Arkiv, Stockholm.

Last indexed, page 812.

- 109 (XXXVIII. Internal Medicine. No. 3.) "Beltrage zur Methodik der klinischen Stuhluntersuchungen (examination of stools)." H. P. T. Oerum (Copenhagen).
 110 "Zur Frage von der Aetiology und Pathogenese der angeborenen Herzerkrankheiten (congenital heart affections)." C. Sundberg.
 111 Cytologie der Pleura- und Peritoneal-Ergüsse. II. Köster.

109. **Clinical Examinations of Feces.**—Oerum has been studying the intestinal functions in the clinic for more than a year, following the directions of Schmidt and Strassburger. The test diet consists of 0.5 liters of milk and 50 gm. zwieback early in the morning; for breakfast, 40 gm. oatmeal or 0.5 liters of oatmeal gruel, 10 gm. butter, 200 gm. milk, 300 gm. water and one egg (strained); for dinner, 125 gm. chopped beef (weighed raw), browned over but still raw inside, and 250 gm. mashed potatoes (made with 190 gm. potatoes, 100 gm. milk and 10 gm. butter). The afternoon meal is like the earliest meal, and the supper like the breakfast. A tablet of 0.3 gm. of pulverized carmin is given usually at the commencement and conclusion of the test diet, which is kept up for three days or longer. For the macroscopic examination he takes a lump of feces the size of a walnut and rubs it in a mortar with water and then spreads the soft mass in a thin layer on a wide glass saucer standing on a black background. He then examines it for mucus, evidences of parasites, pus, foreign bodies, etc., relics of connective tissue from the raw meat, muscle fiber and potato, and for crystals of ammonia or magnesium phosphate. Microscopic and chemical tests are then applied. His experience with the aloin test for invisible blood has been extremely favorable in 100 cases. He regards it as a great advance in our means of detecting carcinoma of the intestinal tract and latent ulcer in stomach or intestine. He describes the technic for this and for various other tests, and the importance of the findings is emphasized. He determines the proportion of water by weighing a jar containing some dry sand and then pouring 10 c.c. of the diluted feces on

the sand, with a little diluted sulphuric acid. The jar is then dried out to a constant weight, the difference between the two weights being the weight of the dry substances in 10 c.c. of feces. When an abnormal proportion of fat is discovered in the diet, he limits the intake of fat, which sometimes materially benefits chronic intestinal affections. His experience has confirmed the assumption that chronic constipation in the majority of cases is due to exceptionally perfect utilization of the food ingested with the consequent lesser secretion in the intestines from lack of stimulation from fecal masses.

110. **Pathogenesis of Congenital Heart Affections.**—Sundberg describes the autopsy findings in a case of congenital deformity of the heart. The patient, a man, lived to the age of 22 although with various malformations of the heart. They all bore the appearance of having been the result of excessive bending over of the head during uterine existence.

Books Received

Acknowledgment of all books received will be made in this column and this will be decided by us a few weeks later to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

CLINICAL APPLIED ANATOMY, or the Anatomy of Medicine and Surgery. By Charles R. Box, M.D., B.S., B.Sc., M.R.C.P., F.R.C.S., physician to out-patients of St. Thomas's Hospital, and W. McAdam Eccles, M.S., F.R.C.S., Assistant Surgeon, Joint Lecturer on Anatomy and Demonstrator of Operative Surgery at St. Bartholomew's Hospital. Illustrated by anatomical plates, of which 12 are colored, and 8 figures in the text. Cloth. Pp. 471. Price, \$4.00. Philadelphia: P. Blakiston's Son & Co., 1906.

THE WORLD'S ANATOMISTS. Concise Biographies of Anatomic Masters, from 300 B. C. to the Present Time, whose Names Have Adorned the Literature of the Medical Profession. By W. H. Kemper, M.D., Professor of the History of Medicine in the Medical College of Indiana, Indianapolis. Revised and enlarged from the original serial publication in the *Medical Book News*. 11 illustrations, 9 of which are portraits. Paper. Pp. 79. Price, 50c. Philadelphia: P. Blakiston's Son & Co., 1906.

SCIENTIFIC MEMOIRS BY OFFICERS OF THE MEDICAL AND SANITARY DEPARTMENTS OF THE GOVERNMENT OF INDIA. Issued under the Authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Calcutta: Office of the Superintendent of the Printing, 1906. 21. **Organization of Anti-Typhoid Vaccine.** by Captain George Lamb, M.D., I.M.S., and Captain W. B. C. Forster, M.B., D.P.H., I.M.S. Price, annas, 6 or 7d.

THIRD TREATISE ON THE EFFECTS OF BORAX AND BORIC ACID ON THE HUMAN SYSTEM, WITH DIAGRAMS, being a Critical Review of the Report and Dr. H. V. Wilier, Chief of the Bureau of Chemistry of the U. S. Department of Agriculture, to the Secretary of Agriculture. By Dr. Oscar Liebreich (Translated from the German). Paper. Pp. 70. Price, \$1.75. Philadelphia: P. Blakiston's Son & Co., 1906.

THE NATURAL LAWS OF SEXUAL LIFE. Medical-Sociological Researches by Dr. Anton Nystrom, Stockholm. Authorized Translation from the Third Swedish Edition by Carl Sandzen, A.M., M.D., Ph.D., Professor of Physical Therapeutics University of Kansas School of Medicine. Cloth. Pp. 260. Price, \$2.00. Kansas City, Mo.: The Burton Company, Medical Publishers, 1906.

STATE CHILDREN RELIEF BOARD. Report of the President, the Hon. C. K. Mackellar, M.B., C.M., M.L.C., for the year ending April 5, 1904, and also for the year ending April 5, 1905. Legislative Assembly, New South Wales. Paper. Pp. 37 and 40. Price, 1s. 6d. and 1s. 6d. Sydney: William Applegate Gullick, Government Printer, 1904 and 1905.

CHEMISTRY OF THE ALBUMENS. Ten Lectures Delivered in the Michaelmas Term, 1904, in the Physiological Department of University College, London. By S. B. Schryver, D.Sc., Ph.D., Lecturer in Physiological Chemistry to University College, London. Cloth. Pp. 141. Price, \$2.00. Philadelphia: P. Blakiston's Son & Co., 1906.

NATURE AND HEALTH. A Popular Treatise on the Hygiene of the Person and the Home. By E. Curtis, A.M., M.D., Emeritus Professor of Materia Medica and Therapeutics, Columbia University, New York. Cloth. Pp. 315. New York: Henry Holt & Co., 1906.

THE TRI-UNIT PHILOSOPHY. A Treatise Based on the Discovery of Unit Matter, and How It Develops Into Elements by Virtue of the Combined Action of Energy and Force. By Porter Melvin Jones, M.D., Chicago. Paper. Pp. 171.

PUBLICATIONS OF THE MASSACHUSETTS GENERAL HOSPITAL. Boston. Clinical Contributions. Vol. 1. No. 2. February, 1906. Paper. Pp. 125. Boston, Mass.: Journal of Medical Research Publishing Office.

BLACK'S MEDICAL DICTIONARY. Edited by John D. Coumle, M.A., B.Sc., M.B., M.R.C.P. With over 350 illustrations in the Text. Cloth. Pp. 854. Price, \$2.50. New York: The MacMillan Company, 1906.

SIXTEENTH ANNUAL REPORT OF ST. MARY'S HOSPITAL, Rochester, Minn. Conducted by Sisters of St. Francis. Paper. Pp. 29. Rochester, Minn.: C. Elliott & Son, 1906.

STUDIES FROM THE BENDER HYGIENIC LABORATORY, Albany, N. Y. Reprints. Vol. II, 1905. Paper. Pp. 111. Albany, N. Y.: Brandow Printing Company.

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Original Articles

ACUTE DILATATION OF THE STOMACH.

WITH REPORT OF TWO CASES, ONE OF WHICH COMPLICATED PNEUMONIA AND ENDED IN RECOVERY.

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CHICAGO.

Acute dilatation of the stomach is a rare condition. In 1902 Thomson¹ collected less than fifty cases. A few have been reported since. It is a grave condition, truly appalling, as its high mortality well indicates. Its recognition is not always easy, yet important, as it is probable that the earlier treatment is begun the better is the outlook. I report these two cases of acute dilatation of the stomach, therefore, because the rarity, gravity and importance of recognition of the disease make it desirable that every observed case should be put on record. One of these cases recovered—the first recorded recovery, I believe, where the disease has been a complication of pneumonia or pleurisy; in the other patient an autopsy was not to be obtained. I can, therefore, make no contribution to the morbid anatomy of the disease, knowledge concerning which is extremely scanty, but very desirable as helping one to a better insight into the as yet little understood pathogenesis and the true etiology.

I have thought it wise to add to the report of these cases a brief summary of the main points in the clinical history of this condition. One desiring fuller information can find it in the monograph of Campbell Thomson.¹

CASE I.—E. S., male, aged 36, entered my service at the Presbyterian Hospital, Feb. 13, 1904.

History.—His family history was good, with the exception of a doubtful tuberculosis in an older brother. He had had measles as a child, smallpox in 1881 and a fever, probably typhoid, in 1886. He was a moderate user of tobacco. Up to one year ago he had used alcohol quite freely. He had been bothered with his stomach only after spells of excessive drinking. For the past year he had not been drinking and had been in excellent health. February 10 he was suddenly seized with a sharp pain in the right side of the chest. This was followed by chilliness, headache, cough, diarrhea, vomiting and fever.

Examination.—On examination he was found to be a well-nourished man of moderate stature, with physical signs of consolidation, evidently pneumonic, of the upper lobe of the right lung and the upper portion of the lower lobe of the same side. Dullness, bronchial breathing, increased vocal resonance and fremitus and a few fine crackling râles were plainly made out. The patient was somewhat cyanotic and breathed with evident pain. There was a labial herpes. The tongue was dry. He was clear mentally. The physical examination as to the special senses, nervous system, heart, liver, rectum, genitalia and extremities was negative. The skin showed pitting from

variola. In the record of the examination of the abdomen it is recorded that "the lower border of the stomach is apparently above the umbilicus." "The spleen can be distinctly felt on deep inspiration."

Blood.—The blood on admission showed 5,280,000 erythrocytes, 33,100 leucocytes, nearly all polymorphonuclear, and hemoglobin 98 per cent.

Urine.—The single specimen of urine obtained on admission, specific gravity 1022, showed a heavy trace of albumin and contained numerous granular and hyaline casts. A twenty-four hour specimen, 1,000 c.c., specific gravity 1021, likewise contained a considerable amount of albumin, with many granular and hyaline casts.

Sputum.—In the viscid, rusty sputum, diplococci, many with capsules, were very abundant in stained smear preparations.

Course of Disease.—The illness for the first six days of his stay in the hospital pursued the course of a severe migrating pneumonia, there being involved in succession the right upper, right lower and left lower lobes. The temperature varied between 101 and 104. Most of the time the pulse was between 115 and 130. The respiration rose gradually from 25 to 60 a minute. The mental condition became one of extreme restlessness. The bowel movements changed from a yellowish or brownish semi-solid to a liquid greenish character on February 17. During the first five days after admission he did not vomit.

On February 15 I showed the patient in clinic and a careful examination was made, not only of the chest, but of the abdomen as well, and nothing out of the way was noted as to the stomach by external examination. Treatment consisted of five grains of ammonium carbonate every four hours. On February 17 one-half ounce of whisky was ordered to be given every four hours. One dose of calomel (gr. 1) and soda was given February 17, when the stools had become so loose and frequent.

On the morning of February 18, the ninth day of the disease, I regarded him as a very sick pneumonic patient, but yet one who had a fair chance of passing through the crisis which could be looked for soon. The right upper lobe was already beginning to show signs of resolution.

That afternoon at 5 o'clock he vomited—I copy the record of the nurse—yellow fluid. At 5:30, half an hour later, he vomited dark brown fluid. At 6:30 p. m. he vomited about a pint of black fluid. At 7:15 p. m. he vomited a cupful of black fluid. He vomited repeatedly during that night, each time ejecting the black fluid and on several occasions as much as a pint. He became restless, extremely thirsty and very weak. Water was given in small amounts, digitalin and strychnin were administered hypodermically, and normal salt solution was given by rectum.

At 8:30 a. m., February 19, three pints of salt solution were injected under the skin. When I saw the patient an hour or two later he was quiet, had a fairly good pulse of 120, a rectal temperature of 102°, the breathing had gone down from 60 to 50, he had not vomited for two hours, and I hoped this was the beginning of the critical improvement.

In the evening, however, when I again saw him, his condition was decidedly more alarming. While temperature (101°) and respiration (44) were better, his pulse was of poorer quality, his countenance was sunken and haggard, he was semi-delirious and seemed profoundly shocked and toxic. He had again vomited the dark grumous material and his abdomen had become markedly distended.

1. Campbell Thomson: "Acute Dilatation of the Stomach," New York, 1902. Also the review of the subject by Neck: "Die Akute Magenverwässerung (Sammel-referat)." Centralbl. f. d. Grenz. d. med. u. Chir., vol. VIII, No. 14 et seq. Extensive bibliographies are to be found in each of these articles.

An examination of the chest revealed the pneumonic areas clearing. The heart, while weak, was not dilated. The abdomen was greatly distended, very slightly tender on palpation, resonant, except in the flanks; a faint peristaltic wave occasionally passed from left to right. On tapping to test for fluctuation I was surprised to get it with a distinct slap of the wave against the hand, and there was a splashing sound that was plainly heard with the ear near to the body when the patient was shaken, and that sounded, when the stethoscope was placed over the abdomen, exactly like the echoing succussion of hydro-pneumothorax. The fluid shifted readily, as shown by change of position of the patient.

Treatment.—Feeling sure we were dealing with an acute gastric dilatation, I turned the patient on his side, not daring to have him sit up in his weak condition, passed the stomach tube and removed about a quart of dark grumous liquid. The stomach was washed until the water returned clear. The patient seemed much relieved and the vomiting ceased. The stomach as mapped out at this time extended to within one inch of the symphysis pubis; the lesser curvature was two inches above the umbilicus. All food was stopped by the mouth and nutrient enemata were given. Gastric lavage was practiced three times in every twenty-four hours; strychnin and digitalin were given hypodermically; normal salt solution was given by rectum and hypodermically. A firm abdominal binder, with a large pad of cotton, was applied in such a way as to press the stomach upward and away from the lower abdomen. The patient did not vomit after the first lavage; the material washed from the stomach gradually became less in amount and lost its dark greenish look, but for several days the general condition resembled one of profound toxemia with extreme prostration.

He was at times delirious and the evacuations were involuntary. It became impossible on the third day to feed him by the bowel, because of failure to retain the enemata, and rice water in small amounts (3ss-iii) was given cautiously by the mouth. This was retained. Albumin water and milk were later given in small amounts. The record for February 22 is as follows: "The lungs show advancing resolution. Stomach tube passed and about 600 c.c. of bright green fluid obtained. Lavage. Distended with air, the lesser curvature is three fingers above the umbilicus; the greater, one hand's breadth below. Tongue heavily coated; eyes bleary and sunken; mind wandering; pulse regular, fairly full; heart tones strong. Leg, of which patient complains, negative; no thrombophlebitis to be made out."

At this time small, loose, greenish stools were passed two to five times a day. The record of February 25 shows: "The mind clearer; tongue less dry. Right lower lobe nearly clear; right upper seems slow in clearing, is still quite dull; respiration harsh; many coarse, moist râles. The same coarse râles are heard over the left lower lobe, though there is little dullness here. The pulse is quick to-day. Sputa yellow, viscid, slightly offensive, an occasional rusty streak. Stomach outlines as on February 22."

February 28: "On percussion stomach seems to reach one-half inch below umbilicus. Lesser curvature higher than before."

March 8: "Urine 2,400 c.c., specific gravity 1010, no albumin, no casts."

Result.—More and more food was gradually allowed, and the slow but steady improvement was uninterrupted. When the patient left the hospital, March 16, his stomach was about normal in size, but still showed a distinct prolapse. When heard from a few months later from his home in Maryland he reported himself as feeling entirely well.

Remarks.—An analysis of the stomach contents obtained February 19 showed them to be thin, of dark greenish color and containing many fine shreds. There was a faint acid reaction to litmus. Congo-red showed no change. Total acidity was 18; no free H. Cl. No lactic acid. Bile present. No mucus, pus, erythrocytes or leucocytes. Some starch granules; considerable fat. Many short bacilli. On February 22, one and one-half hours after taking milk, an analysis showed dark greenish fluid containing a few curds. Litmus, slightly acid. Congo-red, no change. Tüpfers reagent, no change. Total acidity, 20. Bile present. No blood or pus.

A second case of acute dilatation of the stomach was seen several times with a surgical colleague, in whose practice it occurred and who has kindly furnished me notes of the case.

CASE 2.—A woman, aged 55, weighing about 130 pounds, mother of several children, had had for nine years, with varying frequency and severity, attacks of colic, evidently due to gallstones. She had never been jaundiced.

Operation.—Operation was performed Oct. 20, 1904; the gall-bladder with 142 stones was removed. A rubber drainage tube packed with gauze was introduced into the wound. The common duct was not touched, further than to assure the operator of the non-existence of common-duct stones. At the same sitting a diastasis of the abdominal recti muscles was relieved by freshening the edges of the muscles and uniting them by sutures. It was noted by the operator that the stomach was in its usual position and was not larger than normal, and the region of the pylorus and duodenum was examined for the presence of adhesions, but none was found. The patient left the operating table in fairly good condition. Nine ounces of ether were used for anesthesia, which lasted one hour and thirty-five minutes. Nitrous oxid gas was used at the very beginning.

Postoperative History.—For about twelve hours after the operation the patient, who had promptly regained consciousness, complained of pain in the abdomen and vomited often, each time bringing up a small amount of light greenish liquid. The vomiting then ceased for twelve hours. Then, with complaint of more pain with increase in pulse rate to 158 and evidence of great prostration, vomiting began again, the vomitus now being a dark-brown liquid. The patient's eyes were sunken, the tongue dry, voice feeble and husky. There was *fœtor ex ore*. The pulse was small and feeble, the temperature ranging from 99 to 101°. The abdomen was distended; tender only near the wounds. The stomach outlines were clearly made out, showing the greater curvature half way between the umbilicus and symphysis pubis. A succussion sound was plainly heard and the splash of the fluid could be felt below the umbilicus.

Under gastric lavage, rectal feeding, hypodermoclysis and stimulants, there was marked improvement, lasting three days. The tube and nearly all the gauze had been removed, but on October 29 she again became very restless, was nauseated, complained of increased pain and vomited a quart of thick, blackish, offensive material. The pulse rose to 138; the prostration became extreme. In spite of lavage, stimulants, use of salt solution by rectum and hypodermically, she gradually failed and died November 3, fourteen days after the operation. No autopsy was permitted.

Remarks.—The stomach contents, analyzed several days before operation and after the occurrence of the acute dilatation, never contained any free HCl except once, when the acid was being given by the mouth. After a test breakfast, October 18, there was a total acidity of 8. A full meal used as a test for motor insufficiency showed, October 17 and October 20, no retention. After seven hours but 5 c.c. of contents could be obtained. The stomach contents after dilatation occurred showed (e. g., test of October 30) a dark, greenish-black fluid of foul odor, specific gravity 1020. The reaction was alkaline. No blood or bile could be found by chemical tests. A few red cells and leucocytes with much mucus and some epithelial cells were found on microscopic examination. No Oppler-Boas bacilli were found, but there were myriads of other micro-organisms of various forms.

In this case the possibility of acute obstruction at the pylorus or the duodenum was thought of, but the removal of the tube and packing gave no relief, and there was a lack of peristalsis such as one would expect with such an obstructive dilatation. It is to be noted that ether and not chloroform was the anesthetic in this instance. In most respects this case resembles the other recorded postoperative cases. The pain, prostration, vomiting of large amounts of dark fluid, the great size of the stomach, the temporary improvement for three days and death in the second week are all as in most other reports of the same accident.

SYMPTOMS.

Comparing these two cases with others that have been reported, they are found as regards *symptoms* to be typical in most respects. The onset of acute dilatation is sudden. There may be complaint of pain or discomfort in the abdomen. This pain may be severe. The vomiting is quite characteristic, brown, grayish, greenish or black, large in amount, and may be offensive. It seems almost to run out of the patient's mouth rather than to be forcibly ejected. Henry Morris says that it comes up in "large gulps without straining." The urine is scanty; the bowels loose or constipated. The temperature is often subnormal, the skin cold and clammy, the pulse small and rapid, thirst is extreme; in short, there is the picture of collapse.

The abdomen, especially the lower half, is distended, though it may be flat if the stomach be well emptied for the time being through free vomiting. Peristalsis, even slight as in my first case, has been rarely reported, an argument advanced by some to disprove the theory of pyloric or duodenal obstruction as a causative factor. The percussion note is drum-like over the gas-containing part of the viscus and flat over the fluid. Fluctuation and the succussion sound are clearly made out, the stomach tube withdraws a large amount, sometimes several pints, of brownish, greenish or blackish, rather thin or gruelly fluid. This fluid generally contains bile, perhaps pancreatic juice and some altered blood. Free HCl, as a rule, is lacking; lactic acid has been found several times. The odor is often offensive, almost never feculent. The gas that escapes through the tube or by belching is often abundant and may be of foul odor. H₂S has been found in it in one or two instances. The stomach, with or without the aid of distension by air injected through the tube, can be outlined as greatly enlarged, extending "even to the symphysis" or "filling the entire abdomen from diaphragm to symphysis." The abdomen flattens in contour as the fluid and gas are withdrawn by the tube.

DIAGNOSIS.

Diagnosis is not as easy as one might think. Peritonitis, either general or local, intestinal obstruction, pancreatic cyst, uremia, postanesthetic vomiting, acute pancreatitis are all to be considered. Of especial value in diagnosis is the succussion sound, and the examination by the stomach tube revealing the characteristic fluid and the enormous size of the stomach. Diagnosis in one case was made when an exploratory puncture through the abdominal wall for suspected pus, the result of the supposed peritonitis, revealed the greenish stomach contents. The writer in this case explains the failure to recognize the existence of dilatation by the simple signs of fluctuation and succussion as due to the fact that, through fear of breaking up possibly existing recent adhesions, he did not dare shake the patient, etc. This sounds much like an *ex post facto* reasoning. Surely a palpation and percussion of the abdomen sufficient to test for fluctuation, or a shaking of the patient, or, better still, of the bed, to bring out succussion is a far safer and a more rational procedure than an exploratory puncture for suspected appendicular abscess or localized peritoneal exudate from other causes.

PROGNOSIS.

An extremely small number of the recognized cases have recovered. I believe my case is the first reported case of recovery in which acute dilatation has complicated pneumonia or pleurisy.

Thomson refers to seven cases of recovery. I am ac-

quainted with recovery in the practice of a surgical colleague in a case following a gall-bladder operation. As Thomson says, types of more moderate severity probably occur and end in recovery so that the prognosis, if these cases were more accurately recognized, would not be so grave as it is generally supposed to be. Some of the instances of late nausea and vomiting after anesthetics may be due to milder forms of acute dilatation. Death when it occurs may be within the first forty-eight hours or it may be delayed for more than a week. In general the disease runs its fatal course within a week. Relapse may occur, and intermissions of several hours with cessation of vomiting and improvement in symptoms have been several times noted.

TREATMENT.

I feel convinced that treatment in my case saved the life of the patient, even though it was begun late, as the existence of dilatation was not recognized until it had lasted probably twenty-four hours.

Treatment should consist in frequent gastric lavage, saline solution by the bowel and under the skin, nutrient enemata, strychnin and other stimulants hypodermically. Box and Wallace advise the use of atropin. This has been found of service in certain cases of ileus, and the resemblance of acute gastric dilatation to dynamic ileus might suggest similar treatment. Change of posture to the right or to the abdominal decubitus should be tried to relieve the possible drag of the mesenteric vessels on the duodenum or the pressure of the overloaded stomach on the same portion of the bowel. I tried a snug abdominal supporter with a large firm pad of cotton, binding it on in such a way as to push the abdominal wall and, with it, the stomach upward in the same manner that the binder is used in cases of enteroptosis. How much this accomplished it is hard to say, but it apparently helped to keep the displaced organ more nearly in its proper place. It has since occurred to me that possibly the stomach might be induced to contract by the application of ice to the abdominal wall or of hot water or even hot air put into the stomach through the tube in the same way that the inert uterus after confinement can be induced to contract through these means. It would seem to be a means of treatment worth trying. That the stomach wall has not entirely lost its elasticity and contractility has been shown by its prompt shrinking on the escape of gas when pricked postmortem, as well as by the same contraction in the wall when at operation in a few cases the stomach has been opened and emptied of its gas and fluid. Surgery—gastrojejunostomy—is advocated by Mayo Robson in intractable cases, when on opening the abdomen it is seen that there is no possibility of correcting the displacement of the viscus and in this way favoring a cure.

ETIOLOGY.

Certain statistical facts can be stated concerning the etiology of this condition. It is commonest between the ages of 20 and 30. A small number have followed trauma. A surgical operation has preceded about one-quarter to one-third of the cases, and a rather strikingly large percentage of these operations has been on the gall bladder or bile ducts. The anesthetic has nearly always been chloroform. Neck saw dilatation follow a small dose of veronal. In some instances overloading the stomach is assigned as the cause—dilatation *ab ingestis*. For instance, Hoffmann² reports the case

² E. Hoffmann: *Mitch. med. Wochft.*, vol. II, No. 45, Nov. 8, 1904.

of a male, aged 18, who was a hearty eater and who bolted his food. After a large meal, including several good-sized pickles, pain and vomiting occurred; on the sixth day ileus with peritonitis and encapsulated exudate was diagnosed. Laparotomy was performed. There was no peritonitis, the stomach was found enormously dilated and, on being opened, six liters of fluid, with pickles, escaped. A. Fraenkel³ reports the case of his own child of 6 who, after eating freely of peas, suffered from a typical acute dilatation, recovering only after six weeks of serious illness.

In a number of cases, some other lesion than the dilatation has been found and is regarded as the cause or at least as a contributing factor. Of Thomson's 44 cases, one was associated with empyema, three with pleurisy and pneumonia and one each with typhoid, scarlet fever and an obscure fever. Brown⁴ saw a case in a choreic girl; A. Fraenkel³ reports a case in an anemic girl with hemorrhage from the stomach. No ulcer, which was suspected, was found, but a long, vertical, dilated stomach. Fraenkel thinks anemia and atony plus food and drink may account for the dilatation.

While, therefore, trauma, surgical operation, overloading of the stomach, preceding or accompanying diseased conditions, are assigned as causes in most cases, in others no cause whatever is recognized as operating and the dilatation might be regarded as idiopathic, i. e., the cause not discovered.

GENERAL REMARKS.

It is not my purpose to speculate as to the exact mode of production of acute dilatation of the stomach nor to review in detail the various theories that have been advanced to explain it. While a number of autopsies have been performed—in most of Thomson's 44 cases postmortem examinations were made—many of them are very incomplete and there is no constant finding save the greatly distended stomach with its contents of gas and fluid and commonly submucous hemorrhages and erosions. In several instances the dilatation has included not only the stomach, but also that part of the duodenum above the crossing of the superior mesenteric vessels. Only a few microscopic examinations of the wall of the stomach have been made; the nerves, the vagi and splanchnic, have been practically overlooked; bacteriologic and chemical examinations of blood and stomach contents are scanty; only occasionally is the condition of the pancreas noted with care, so that one sees that there is much light that might be thrown on the subject by carefully conducted complete autopsies.

More careful observations have been made as to gross conditions that might cause obstruction at the pylorus or in the duodenum. The fact that several cases have followed operations on the bile tract, such a close neighbor of the duodenum, makes one think of the possibility of pressure on this part of the intestine by drainage tube or exudate as a possible cause, or of the extension of inflammation to the duodenal or gastric wall. Albrecht⁵ and others have drawn attention to the pull and pressure of the superior mesenteric vessels on the underlying duodenum, particularly when the small intestines were low in the pelvis and by their dragging weight pulled these vessels taut. Several observers have found, by necropsies and by experiment, evidence sufficient to make them adherents of this theory. Still

others believe that the overloaded stomach itself presses on the duodenum and so really obstructs its own outlet, and the enlarged, overloaded viscus pushes the small intestines downward, increasing the pull on the superior mesenteric vessels and thus still further adding to the obstructive force that is blocking its outlet. We thus have an illustration of the vicious circle of causes so frequently seen in conditions of disease.

Kelling⁶ has advanced an additional theory and he is supported in this by Braun⁷ and Seidel. Kelling bases his belief largely on experimental work on dogs. A simultaneous closure of the duodenum and cardia would result in an overdistension of the stomach and in the accumulation of fluid and gas. A valve-like fold in the lower esophagus opens by active contractions of the gastric musculature. If for any reason, as through inflammation of the wall of the stomach or defective innervation through abnormally acting vagi or other nerves these muscles became incompetent, and at the same time if a kinking of the duodenum were to occur—and Kelling finds that it may—the condition would be ripe for an overdistension and hypersecretion, or more properly a hypertransudation from the wall of the stomach, i. e., the contents could escape through neither pylorus nor cardia. If the kink in the duodenum is below the opening of the common bile duct, bile and pancreatic juice will, of course, be constituents of the gastric fluid. Kussmaul⁸ long ago called attention to these duodenal kinks.

Some adhere to the theory of a sudden toxic paralysis—e. g., through the poison of an infection, local or general, or perhaps chloroform—of the wall of the stomach permitting of abnormal hypersecretion, the accumulation of gas arising from fermentation or expired, as it were, from the vessels in the wall of the stomach (?), the paralysis permitting the yielding of the wall of the viscus and preventing peristalsis vigorous enough to cause the emptying of the organ *per vias naturales*.

To all of these theories there is some objection that can be raised. Either the theories are wrong or acute dilatation of the stomach may arise from more than one cause and thus permit more than one explanation.

It is, perhaps, idle to speculate, yet it seems as though some involvement of the nervous or muscular apparatus of the stomach wall in inflammatory or toxic change must be present to account for the enormous amount of transudate and gas, the great size of the stomach whose walls seem parietic, and for the alarming and too often fatal condition resembling profound toxemia. Mechanically obstructive causes may be operative, as the numerous observations go to show, but that they are primary or that they are the sole causes is not proved.

As I have said, more careful histologic, chemical and bacteriologic examinations are necessary before the pathogenesis of this condition shall be made clear, and more attention should be given by the clinician to noting the condition of the stomach as regards location and size before and during operations and at the beginning of infectious diseases. A previously existing gastropsis might predispose to acute dilatation. So too, the condition of the stools during these attacks might show whether or not the same peculiar blackish material found in the stomach is present in the lower bowel, and in this way throw some light on the possible presence of duodenal obstruction.

6. Kelling: "Verhandl. d. Deutsch. Gesellsch. f. Chir.," 1901.

7. Braun: Deutsch. med. Wochtsch., 1904, p. 1553.

8. Kussmaul: "Die Peristaltische Unruhe des Magens." Volkmann's Samml. klin. Vortr., 1880, No. 181.

3. A. Fraenkel: Deut. med. Wochtsch., 1894, No. 8, p. 155.

4. Brown: Lancet, April 19, 1890.

5. Albrecht: Virchow's Archiv., vol. cliv.

HEAD INJURIES ACCOMPANIED BY INTRACRANIAL HEMORRHAGE.*

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As house surgeon at the Emergency Hospital, it has been my privilege to see and to attend a large number of head injuries, of which some have been very serious. The attitude of some of our best surgeons regarding early operative interference in these cases has prompted me to write this article, the purpose of which is to bring out a few points in the treatment of head injuries accompanied by intracranial hemorrhage. The point which I wish to emphasize is the necessity of prompt surgical interference under certain conditions and the probable result when the surgeon waits for the development of focal symptoms. As an illustration, I wish to cite three cases which were recently treated at the Emergency Hospital. For these cases I am indebted to Drs. Bading and Reineking attending surgeons to the hospital.

CASE 1.—On Feb. 22, 1905, about 1 p. m., C. A. B., male, aged 27, was brought to the hospital by the police. He was profoundly intoxicated when admitted and it was thought that he had fallen down a flight of stairs, but no definite history was obtained, as the man was a stranger and without friends.

Examination.—This showed a superficial laceration of the scalp about one inch long over the left parietal eminence, a small laceration over the right eye and a slight dilatation of the right pupil, which was uneven and reacted slowly to light. The man's pulse was 62, temperature 97.4 by rectum, respiration 24. He vomited several times soon after entrance.

Hospital Record.—The patient was put to bed for observation. For several hours he was very quiet and the effects of the liquor did not seem to pass away. About 2 a. m. I was called by the nurse, who had noticed a twitching of the muscles of the left hand and forearm, followed by a rigidity of the extremity. Soon afterward the lower extremity on the left side became similarly affected. Later the right side became involved. There were frequent muscular twitchings, followed by a rigidity of the extremities. At 6 a. m. I was again called. The same conditions were present, but were more noticeable. The pulse at this time was 124, temperature 101.6 in the rectum, respirations 36. It was thought that this might be a case of skull fracture with cortical laceration, and an expectant line of treatment was advised. There was a gradual rise in the pulse, temperature and respiration, and during the second night the pulse was as high as 180, temperature 105 in the rectum, respirations 40. On the following morning the man was still completely comatose. He grew gradually worse and died at 3 p. m. February 24, fifty hours after admission, the temperature going above 107, while the pulse could not be counted.

Autopsy.—On the following day a postmortem was held and the findings were as follows: There was a fissured fracture of the skull on the right side, extending from the squamous portion of the temporal bone to the occipital protuberance. There was a rupture of the middle meningeal artery with an immense subdural clot practically covering the right hemisphere.

CASE 2.—C. B., male, aged 32, jumped from a moving street car on the morning of July 14, 1905, and was brought to the hospital at 7:50 a. m.

Examination.—There was a slight laceration over the olecranon process on the right side, and it was to have this wound dressed that he was brought to the hospital. He complained of severe pain in the head and was somewhat dazed. Examination of the head showed a contusion of the scalp over the right parietal eminence, but no abrasion.

Hospital Record.—He was put to bed and his condition rapidly grew worse. He was very restless, complained of pain in the head, vomited, and his pulse became full and slow.

Within six hours he became very restless and delirious; pulse 44, temperature 98.8 by rectum, pupils equal and reacting slowly to light. There was twitching of the muscles of the right upper extremity, followed by rigidity. Twelve hours after admission his pulse was 68, temperature 100.4 in the rectum, respirations 24. There were frequent twitchings of the muscles of the extremities of both sides, followed by rigidity of the same parts, but at no time was there paralysis. During the night he steadily grew worse, and at a. m. on the following morning his pulse was 142, temperature 103.2 by rectum, respirations 47. The respirations were snoring in character and he was becoming cyanotic. His pupils were equal, but sluggish. He was in deep coma, but there was no paralysis, nor were focal symptoms present. It was thought that this was a case of intracranial hemorrhage and that operative interference was indicated. Accordingly the patient was prepared for operation.

Operation and Result.—The question arose as to where the skull should be opened. It was decided to open on the right side, since there was a contusion of the scalp on that side, and if hemorrhage was not present an opening was to be made on the opposite side. An incision was made over the motor area on the right side, and when the skull was exposed a fracture was found. It was not depressed and was about four inches in length, following closely the direction of the squamous suture. A trephine opening was made and an extradural clot was exposed. The opening was enlarged and the bleeding vessel found. It proved to be a posterior branch of the middle meningeal and a ligature was applied. The clot, which was very large, extending over the greater portion of the right hemisphere, was removed. As soon as pressure was relieved the breathing became better and the patient improved rapidly in every way. Even before he left the table the change was noticeable. Within four hours after his removal from the operating room he answered questions and apparently knew what was going on about him, although he had been profoundly unconscious for the preceding eighteen hours. Twenty-four hours after the operation his pulse was 120, temperature 101, respirations 40, and he was perfectly conscious. He made an uneventful recovery.

CASE 3.—On Aug. 28, 1905, at 8:30 a. m., B. H., an Austrian, aged 47, was brought to the hospital from the county jail.

History.—He was able to talk a little, but not rationally, and no definite history could be obtained. It was learned that on the afternoon of August 27 he had been found lying near the street-car track outside of the city limits. The sheriff had been notified and the man was brought to the county jail, where he remained over night.

Examination.—He had the appearance of having been drinking heavily. Examination showed that the left upper extremity was rigid and the forearm flexed to a right angle. The patient did not know whether or not he had been injured, and there was no evidence of any traumatism except two small areas of ecchymosis over the left thigh. His pulse was 48, temperature 99 per rectum, pupils equal.

Hospital Record.—From the above history and symptoms present a positive diagnosis was not made at this time, although the case appeared to be one of intracranial hemorrhage, probably the result of an injury. He was put to bed for observation. On the following day his condition was not so good. The right pupil was slightly dilated, the left upper extremity still remained spastic, and there were frequent twitchings of the muscles which were not present on the preceding day. The lower extremity on the left side had also become rigid. He refused all nourishment, his mental condition was not so good, and he passed both urine and feces involuntarily. At 4 p. m., August 29, his pulse had risen to 80, temperature 100.6 by rectum, respirations 30.

On the second day following his admission his condition had become much worse. His pulse was 104, temperature 102 by rectum, respirations 36. Both the upper and lower extremity on the right side had become rigid, with twitchings of the muscles from time to time. The left side remained in the same condition, but more marked. The man was completely comatose, his respirations stertorous and he was cyanotic.

* Read at the meeting of the Milwaukee County Medical Society, 1906.

Operation.—At this time it was decided that the patient's condition warranted opening the skull, and accordingly he was prepared for the operation. The entire head was shaved, but no evidence of any injury whatever could be found on the scalp.

At 4 p. m. that afternoon he was anesthetized; he required but little anesthetic. An incision was made in the scalp over the motor area on the right side. No fracture was found, and an opening was made in the skull with a trephine. The dura was bulging, but did not pulsate, and when incised a large amount of dark fluid blood escaped. The quantity is not known, but there remained a large cavity, extending almost over the entire hemisphere, and at the opening of the brain was separated about one inch from the skull. Such a quantity of blood would cause great intracranial pressure. There was no active bleeding, nor was any clot present. The cavity was irrigated with salt solution and the wound closed with drainage.

Result.—There was a marked improvement in the character of the respirations immediately following the operation and the cyanosis disappeared. During the night the pulse was 120, temperature 103 in the rectum, respirations 40, and the patient restless. On the following day there was a decrease in the pulse, temperature and respirations, and his mental condition was much improved. He talked freely, but did not seem entirely rational for four days after the operation. He could give no history of any injury, but thought that he had fallen, striking his head. At times he complained of severe pain in the head on the right side and did not want to be disturbed. He remained in the hospital about two weeks and was then transferred to another institution. Unfortunately, an abscess developed within the skull anterior to the opening and prolonged his stay in the hospital, but he made a complete recovery. While it is to be regretted that an infection occurred in this case, yet it is a good illustration of the fact that serious results do not necessarily follow an intracranial infection.

From a study of these three cases which are similar, the one patient treated expectantly, the other two operated on, we can see that the diagnosis of intracranial hemorrhage does not depend on the development of local symptoms. In none of these cases did a hemiplegia occur. Local symptoms are due to a local lesion and extensive compression of the brain does not necessarily produce local symptoms. Park states that when intracranial pressure has reached a certain point epileptiform convulsions result, varying in intensity, affecting all the limbs and terminating perhaps with rigidity, and that such a condition is an expression of high pressure within the cranium. That paralysis does not necessarily follow rupture of the middle meningeal artery is well illustrated by these cases. An article on the diagnosis of hemorrhage from the middle meningeal artery by Dr. C. H. Lemon has appeared in a recent issue of the *Wisconsin Medical Journal*. He dwells on the importance of an early diagnosis and active interference and emphasizes particularly the character of the pulse and respirations. A slow pulse which later becomes rapid and a marked increase in the respirations which become stertorous are the two most important symptoms. In a case with a history of injury to the head and in which the patient is unconscious, if these two symptoms are present, we know that the intracranial pressure is increased. The most probable cause of this increased pressure would be hemorrhage or a depressed fracture. The latter is easily excluded. Usually the patient becomes cyanotic and there is frequently a dilatation of one pupil, but this sign is not reliable. The period of consciousness between the accident and the persistent coma is recognized as a very important symptom of intracranial hemorrhage. In only one of these cases, however, was this symptom distinct.

One point that deserves emphasis is that in all of these cases both sides of the body were similarly involved. It is true that the side opposite the lesion first showed symptoms of irritation, but the same condition was soon present on the other side. In Case 3, no sign of injury could be detected after shaving the entire head, and this case shows clearly that very serious damage may occur within the skull with absolutely no evidence of external injury. For several days this man's friends could not be located, as he had given another name on admission to the hospital, and when they were found they knew nothing regarding the case except that he had been missing for several days. In this respect, the case is unusual, as in almost every case some history of the patient can be obtained. In this case the diagnosis was based chiefly on two symptoms, a slow pulse and the spastic condition of the arm. The one indicative of pressure, the other of irritation.

As regards treatment the question arises, when should an operation be advised? In looking over the textbooks on general surgery I find that they nearly all state that operative interference should not be undertaken until focal symptoms develop. This, I believe, is wrong. That focal symptoms do not always develop is clearly shown by these three cases. If the hemorrhage is small and is confined to the motor area local symptoms will probably develop, but if the hemorrhage is large these symptoms may be absent. One point which I wish to emphasize is that the absence of focal symptoms does not mean that hemorrhage is not present. It is largely due to the absence of focal symptoms, I think, that an early positive diagnosis is not made in such cases. I believe that an operation is indicated when there is a history of injury to the head followed by loss of consciousness, if the patient has a persistent slow pulse, that is one of fifty or under, later becoming rapid, and is gradually growing worse. Certainly there is less danger to such a patient in trephining the skull than in treating him expectantly. This statement is borne out by statistics. Weisman collected 257 cases. Of these 147 were treated expectantly, with 131 deaths, while of 110 cases in which operation was performed only 30 died. Von Bergman cites 143 cases treated expectantly, in only 12 of which the patients recovered, a mortality of over 90 per cent. With these figures before them, I can not understand why many of our best surgeons hesitate about operating in such cases. Certainly these men would not hesitate about doing an appendicectomy, but would urge it if the case were an acute one. They would not hesitate regarding an exploratory laparotomy for diagnostic purposes; why, then, should they delay trephining the skull for the same purpose if the patient is in danger? Under aseptic conditions, the chances of infection following trephining are certainly no greater than following a laparotomy, and yet the surgeon who would urge this operation hesitates when the question arises of opening the skull. No doubt a number of these patients will die whether operated on or not, but I believe that many more could be saved by prompt surgical means.

Park cites a case in which Parker, in 1877, opened the skull for hemorrhage and, not finding it, opened on the opposite side, removing a large clot, and saw his patient restored to health. To use his own words, "this was considered a very bold procedure," but if we had more men of like mind to-day many patients could be saved who otherwise would die of neglect.

THE NEURONS.*

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I. INTRODUCTION.

I have been invited to speak on the subject of "The Neurons" and to outline to you the present state of knowledge concerning them. No topic has led to more animated discussion, perhaps, during the past ten years. Indeed, the word "neuron," which sprang so immediately into vogue after its introduction by Waldeyer in 1891, appears to have excited, by virtue of its rapid and widespread popularity, a feeling of bitter hostility, of unrelenting antagonism in certain circles. Hailed at its advent as the simplifier and revolutionist of our knowledge of the nervous system, and enthusiastically adopted by teachers of anatomy, physiology and pathology, the neuron doctrine has in subsequent years been subjected to the fiercest of assaults; not only has the truth of its tenets been questioned; its adversaries even go so far as to designate it as "a real danger to science."

The neurohistologic world appears to be divided into two camps, that of the neuronists and that of the antineuronists. The controversy, curiously enough, has been a rather one-sided affair, though by no means wholly so. The so-called "neuronists" have spoken and written of the nervous system as a mass of nerve units or neurons and have devoted themselves chiefly to observations and experiments concerning the internal and external morphology of these units, their relations to one another, and especially their arrangements in chains and groups, and the relations of such chains and groups to function in health and in disease. With few exceptions they have refrained from controversy on the hypothetical side. The so-called antineuronists, on the other hand, while they have made some admirable contributions to real knowledge, have devoted a remarkable amount of time and energy to polemical writing; one of them is the author of a book of nearly 500 pages in which few new facts, if any, are brought forward, the whole volume being given over to a condemnation of the neuron doctrine and a denunciatory arraignment of its supporters. In the writings of the antineuronists such statements as "the neuron theory must be abandoned," "the neuron theory can no longer be held," "the neuron doctrine is false through and through," "ueber der Neurontheorie der Stab gebrochen ist" are reiterated monotonously. That the argument has become very heated at times is shown by some sample statements which I select at random from the writings of the controversialists. One of them refers to the neuronists as the "Golgi band"; another antineuronist belittles the work of a great investigator who denies networks of extracellular neurofibrils between the neurons in leeches by stating that his results are due "wholly, certainly, to the incompleteness of his preparations"; to this a neuronist has replied that "such an expression is not only very conceited, but also very partisan and juvenile." Another strong opponent of the neuron doctrine speaks of the period since when "the ominous neuron theory has animated only those who are biased." Still another remarks that "no one with normal vision can escape the

convincing impression of Apáthy's specimens, provided his eye is not dimmed by envy or injured vanity." And, finally, though I could weary you with examples, Nissl states that Ramón y Cajal "is not competent to pass judgment on histologic questions," an opinion perhaps influenced by Ramón y Cajal's criticism of Nissl's "nervous gray," which he declares to be nothing but a "very cheap anatomic-physiologic conjecture, which contradicts everything that the most convincing methods teach us of detail."

From controversial statements such as these only one thing is clear, namely, that those who have made them are quarreling about matters of opinion more than about matters of fact. There is no reason why bitter dispute should long continue over easily verifiable fact. Experience teaches, however, that it is those opinions which are most feebly founded in fact and are least capable of proof that mankind is prone most passionately to defend. Science ought to try to avoid controversy by emphasizing facts and by properly estimating hypotheses. Further, scientific men should know that, once involved in discussion, nothing is gained by the bandying about of personalities; on the contrary, confidence is inspired by simple honesty in work, fairness to adversaries, moderation in statement and dignity in utterance. That was a homely but sensible saying of Truthful James when he declared that:

"I hold it is not decent for a scientific gent

To say another is an ass—at least, to all intent;

Nor should the individual who happens to be meant

Reply by heaving rocks at him, to any great extent."

As Mr. Brander Matthews says, in his recent admirable essay entitled "Persuasion and Controversy," in reference to convincing the public, "It is not really argument which is effective; it is information." Give the medical profession a plain statement of fact, even in a technical field, and it will decide for itself. Not that discussion is unnecessary; quite the contrary. Criticism is essential to progress. As Schiller said to the thinkers and workers of his day, "Let there be strife among you, and the union will come quickly."

In 1899, in my book on the "Nervous System and Its Constituent Neurons," I tried to give an unprejudiced account of the state of knowledge at the time regarding the finer structure of the nervous system. Since then, despite the polemical activity which has prevailed, I have refrained from writing or speaking on the subject. Now, that new methods have been devised and some important new facts have been discovered, the time has come when I welcome the opportunity of reviewing once more, very briefly, the actual advances which have been made. I shall attempt, then, to-night, to pierce the dense cloud of controversial smoke which overhangs the whole neuron area in order to make as clearly visible as possible the little tongues of flame of real research hidden there. Two of these tongues are leaping high, and many think that they are likely speedily to convert the smouldering smudge of conflicting hypotheses into a brilliant blaze of fact. Ramón y Cajal lighted one of them in 1903; Ross Granville Harrison lighted the other in 1904. We shall examine them both along with other illuminating influences a little later.

II. ORIGIN OF THE NEURON CONCEPT: FACT AND THEORY IN 1891.

You are doubtless so familiar with the origin of the neuron concept that mere mention of the main factors will recall the whole story to your minds. It will be remembered that, after the nerve fibers and the so-

* An address delivered by invitation before the Harvey Society of New York.

* The author prefers the spelling "neurone" for the reasons given in his article on "Neurological Nomenclature," Johns Hopkins Hosp. Bull., 1896.

called nerve cells were discovered, there was long great doubt as to the exact relations of these histologic elements to one another. Wagner, in 1851, and Deiters, in 1864, had made it probable that of the many processes of a multipolar ganglion cell in the anterior horns of the spinal cord only one was directly related to a nerve fiber. In 1871 Gerlach had shown that the fibers of the posterior roots do not represent processes of nerve cells of the posterior horns, but that on entering the posterior horns they divide and subdivide until they exhaust themselves and are lost in the gray matter. The question of the relation of the sensory fibers to the motor cells of the anterior horns, so important in connection with the reflexes, remained, therefore, the subject of conjecture; Gerlach advanced the hypothesis that a continuous nerve network exists throughout the gray matter of the whole central nervous system, and that all nerve cells and all nerve fibers are thus connected with one another, a hypothesis which met with almost universal acceptance among anatomists and physiologists for the next fifteen years.

In 1886 the distinguished embryologist, Wilhelm His, began to publish his careful researches on the embryology of the nervous system. He stated in his papers that every nerve fiber is a process of an embryonic nerve cell (neuroblast); that, besides the process of the neuroblast, which becomes later the axis cylinder of a nerve fiber, other so-called protoplasmic processes (dendrites) grow out; that the single nerve cells wander for considerable distances during their development from the site of their origin; that the posterior roots of the spinal nerves are the axis cylinder processes of the spinal ganglion cells which grow into the cord, and that the anterior roots of the spinal nerves are outgrowths of axones of anterior horn cells, these outgrowths becoming subsequently covered by extracental neurilemma cells. Most important was his idea that every nerve cell with its axis cylinder process and protoplasmic processes is a single cell, separate at the beginning from all other cells and from any end organ; connections with other nerve cells or with any end organ, like muscle or gland, His declared, either do not exist at all or, if they exist, arise secondarily. Embryology and embryologists were not so highly valued in 1886 by the rank and file of anatomists and physiologists as they are to-day, and His' remarkable studies made but little impression on the strongly held hypothesis of Gerlach. As a result of pathologic anatomic considerations, especially those bearing on experimental degenerations and the resulting sharply circumscribed areas of degeneration, Forel, in 1887, came to conclusions similar to those of His and opposed to those of Gerlach and the dominant school of the day.

It was not, however, until 1888, when Ramón y Cajal began to make his striking publications of results obtained by the then little-known method of Golgi applied to the study of the embryonic nervous system, that the histologic world became convinced of the value of the ideas of His and Forel. Stroke after stroke of confirmation with the method of Golgi, which put a delicate black crust of silver over the outside of the nerve cell and each one of its processes, no matter how delicate, followed in different parts of the world. von Kölliker, von Lenhossek and Edingen in Germany, van Gehuchten in Belgium, Retzius in Sweden, Schafer in England, Berkeley, Starr, Strong and others in America, repeated and extended the researches of Ramón y Cajal. Though the method is applicable satisfactorily only to embryonic

tissues, its results were confirmed, in the main, especially by Dogiel and Retzius, in the tissues of the adult by the method of Ehrlich.

By the use of these two methods a newly recognized anatomic unit stood out, clearly visible in the tissues. To call it nerve cell was a little confusing, as that term had already been applied to the cell body in the gray matter independent of the related axis cylinder process. This unit included not only the old nerve cell with its dendrites, but also its axis cylinder process and all the collateral and terminal ramifications of the latter. Waldeyer¹ suggested that it be called neuron, a name which speedily found its way in all languages, including our own. Waldeyer's article, an admirable collective review of the researches in histology, embryology and pathology, undoubtedly had great influence in quickly popularizing the neuron conception. A definite anatomic fact had been established, viz., the possibility of demonstrating in embryonic tissues by Golgi's method, and in adult tissues by Ehrlich's method, a hitherto nondemonstrable unit in anatomic structure. On the basis of embryologic and pathologic work which was brought into relation with this fact, a body of doctrines, often called the neuron doctrine, was built up. A sharp distinction between the *fact* and the associated *doctrine* should be borne in mind, for much of the subsequent dispute has been due to neglect in this regard.

The associated neuron doctrine included a number of statements which at the time could be regarded as possibilities only, not as established facts. As it was formulated, it may be summarized somewhat as follows: A diffuse nerve network, in the sense of Gerlach, does not exist. There is no nerve fiber independent of a nerve cell; every nerve fiber, no matter where situated, is to be regarded as the process of a nerve cell. A nerve cell with all its prolongations (dendrites and axon) constitutes a nerve unit or neuron. These nerve units are independent of one another. They are related to one another histologically and physiologically, not by continuity, but by contact; they are not united with one another anatomically or genetically. The whole of the nervous system, exclusive of blood vessels, glia and ependyma, consists of nerve units or neurons superimposed on one another. The neurons are so arranged that a nerve impulse in a given neuron always follows in one direction; it passes from the dendrites to the cell body, from the cell body to the axis cylinder process and thence to the dendrites of another neuron. All parts of a neuron are dependent on the nutritive influence of the nucleus of the cell body. The whole neuron, axon, as well as cell body, is derived from a single body cell. When a nerve fiber degenerates as a result of severance of connection with the cell body, regeneration of the axis cylinder takes place by outgrowth from the central end—see the mass of doctrines and hypotheses clinging by their tendrils to the supporting pole of anatomic fact! Here we have not only the neuron which everybody can see who looks for it, but several neuron theories which were still more or less speculative, including (1) the Cellular or Neuroblast Theory, (2) the Theory of Regeneration of the Peripheral Axon Solely by Outgrowth from the Central End, (3) the Contact Theory, (4) the Theory Denying Extraneuronal Nervous Structures, and (5) the Theory of Dynamic Polarity of the Neurons.

1. Waldeyer, W.: "Ueber einige neuere Forschungen im Gebiete der Anatomie des Centralnervensystems." Deutsche med. Wochts., Leipzig, 1891, xvii, pp. 1244, 1267, 1287, 1331, 1352.

III. THE DISCOVERY OF THE NEUROFIBRILS: FACT AND THEORY IN 1899.

I choose 1899 as the next date of summary, for in the first place it was between 1891 and 1899 that the studies of Apáthy, Held and Bethe began to attract widespread attention and the theories of Nissl to excite comment;

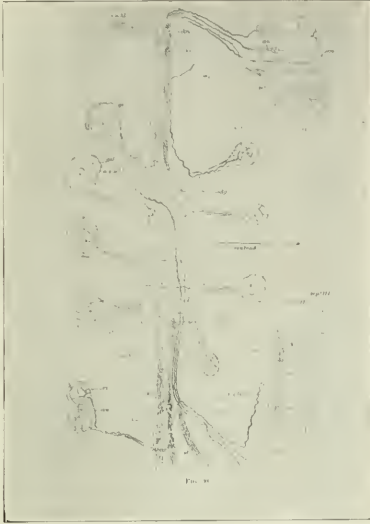


Fig. 1.—Apáthy's schematic representation of the course and connections of the conducting paths in a transverse section of the somite of the leech. (After S. Apáthy, *Mitth. a. d. Zool., Station at Naples*, 1897, vol. xii, plate 32, Fig. 6).



Fig. 2.—Part of the network around a cell in Deiter's nucleus. The paler network is the Golgi net. Held believed that the thickenings in the network correspond to his "end-feet." He believed that the axons helped to form this network. Recent investigations do not corroborate this view. The Golgi net is now believed by Held himself to be glia. (After H. Held, 1897).

moreover, at the end of that year I summarized in a special volume the facts and theories bearing on the neuron up to the date of its publication.

The Hungarian histologist, S. Apáthy,² by a difficult method depending on the use of a special variety of gold chlorid, succeeded in demonstrating in the ganglion cells of various invertebrates, especially the leech, remarkable appearances of fine lines, and, in places, of networks formed by anastomosis of these lines with one another. This discovery of Apáthy is an admirable advance; it has since been manifoldly confirmed and will always stand to his credit. Confronted by such a remarkable histologic picture as the fibrils presented, he immediately began to speculate about them and advanced the following hypotheses:

(1) The neurofibrils in the nerve fibers and in the



Fig. 3.—Cell from the ventral horn of the lumbar cord of an adult rabbit, showing masses of neurosomes in the "end-feet" terminating on the dendrites and cell body. (After H. Held, 1897).

nerve cells are the especial conducting element of the nervous system.

(2) There are two kinds of cells in the nervous system—"nerve cells" and "ganglion cells"; the function of the former is to build neurofibrils which grow into and through the latter, a single neurofibril passing continuously through a series of ganglion cells.

(3) In the so-called "point substance" of Leydig, in invertebrates, neurofibrils leave the nerve fibers and nerve cells and give rise to free extracellular networks of neurofibrils (Fig. 1).



Fig. 4.—Ganglion cells with fibrils stained by Bethe's method. A, human anterior horn cell of man; B, cell from nucleus of facial nerve of rabbit, Nissl's bodies also shown; C, dendrite of a human anterior horn cell; D, two human pyramidal cells. (After Bethe, 1900). Bethe's method showed isolated fibrils, but was not delicate enough to show the anastomoses among the fibrils.

2. Apáthy, S.: "Das leitende Element des Nervensystems und seine topographischen Beziehungen zu den Zellen." *Mitth. a. d. Zool., Station zu Neapel*, 1897, vol. xii, pp. 435 to 748.

Subsequent researches have not supported these hypotheses; indeed, the weight of recent research tends to discredit them all.

The studies of H. Held³ of Leipzig took a somewhat different direction. Golgi's method had revealed around the cell bodies of neurons (1) a pericellular network which Golgi himself believed to consist of neurokeratin and (2) a pericellular plexus of the fine terminal fibers of the axons and collaterals of other neurons. Some have thought that this plexus of fine terminal fibers formed an anastomosing network—a real "pericellular net"; others have declared that the individual fibers interlaced, but did not anastomose. Held studied these pericellular structures by various histologic methods and found that the terminals of nerve fibers end in delicate expansions—so-called "end-feet" (*Endfüsse*)—recognizable by the large number of minute neurosomes which they contain on the surface of the cell body and its dendrites, fusing, he believed, by actual concrescence, with the protoplasm. He saw, he believed, delicate connections of these "end-feet" with one another in the form of an anastomosing network, so that he advanced the idea of two kinds of interneuronal connection, (1) anastomosis of the terminals of axons derived from different neurons in a pericellular network (Fig. 2) and (2) direct continuity of the protoplasm of the end-feet with the protoplasm of the cell to which they are attached (Fig. 3).

Next in order came the researches of Bethe.⁴ Everyone who had tried Apáthy's method of staining neurofibrils had failed with it, and when Bethe announced his discovery of an easier method of demonstrating them it was gladly welcomed. The method had

the advantage, further, of staining the neurofibrils in vertebrates, including man. His method showed, he asserted, independent, non-anastomosing neurofibrils running through the cell body or passing from one dendrite to another without passing through the body of the cell (Fig. 4). He regarded the neurofibrils as the sole conducting element in the nervous system. His method showed also a pericellular network which he called the "Golgi net." It seemed to Bethe probable that this Golgi net was the medium of communication between the neurofibrils of the nerve fibers terminating about the cell and the neurofibrils inside the cell; according to this

hypothesis the neurofibrils would represent a continuous conduction system throughout the whole nervous system, the so-called neurons representing, as it were, a bed in which the essential neurofibrils lie.

In 1898 F. Nissl⁵ launched his hypothesis (more fully developed in 1903) of the structure of the gray matter. He called attention to how little is really known about the gray matter, information yielded by Golgi's method not being regarded as of any value. Nerve fibers we know and nerve cells we know, but in the gray matter there must be something specific which is a mystery. This mystery he designates *nervöse Grau*, or "nervous gray." He lays great stress on the Golgi nets around the nerve cells; he asserts that histologic methods leave us in the lurch when we seek to follow axis cylinders into the gray matter beyond the point where the myelin sheaths cease.

There is thus an area around nerve cells and between them and the medullated nerve fibers which is filled up with "nervous gray," for him the most important constituent of the whole nervous system. While this is all we really know, Nissl says, still we must suppose that this nervous gray is so constructed that it conducts nerve impulses and permits the reciprocal action of the elements of the nervous tissues on one another.

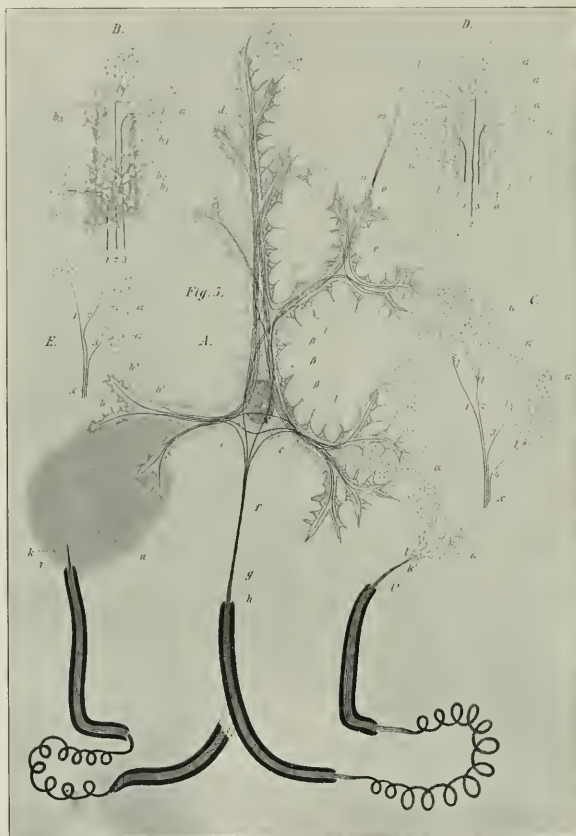


Fig. 5.—Nissl's scheme of the "nervous gray." The left half of the scheme shows the facts as known according to Nissl. In the right half Nissl's hypothesis of the structure of the nervous gray is illustrated.

3. Held, H.: "Beiträge zur Struktur der Nervenzellen und ihrer Fortsätze," Arch. f. Anat. u. Entwicksgesch., Leipzig, 1897, pp. 204 to 294; also, supplement volume, 1897, pp. 273, to 312.

4. Bethe, A.: "Über die Primärfibrillen in den Ganglienzellen von Menschen und andern Wirbelthieren," Morphol. Arch., 1897, vol. VIII, pp. 95 to 116; also "Über die Neurofibrillen in den Ganglienzellen von Wirbelthieren und ihre Beziehungen zu den Golginetzen," Arch. f. mikr. Anat., Bonn, 1900, vol. IV, pp. 513 to 558.

5. Nissl, F.: "Nervenzellen und graue Substanz," Münch. med. systems, Leipzig, 1903, pp. 1 to 488.

He has devised a most extraordinary hypothesis to account for this function of the "nervous gray." Like Bethe's theory, it involves the communication of the neurofibrils in the nerve cells by way of the Golgi nets with a great complex of neurofibrils outside the Golgi nets (Fig. 5).

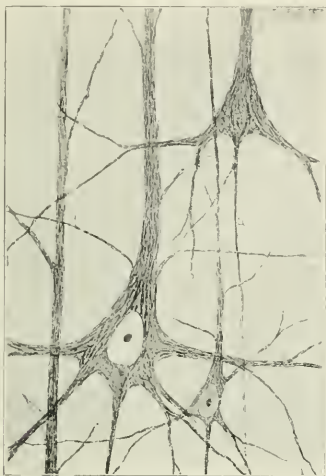


Fig. 6.—Large and medium-sized pyramidal cells from the human visual cortex. *a*, Axis cylinder. (After Ramón y Cajal, 1903).

Thus far knowledge and theory had advanced by 1899, and in my book, and in an article entitled "The Validity of the Neuron Doctrine," published in that

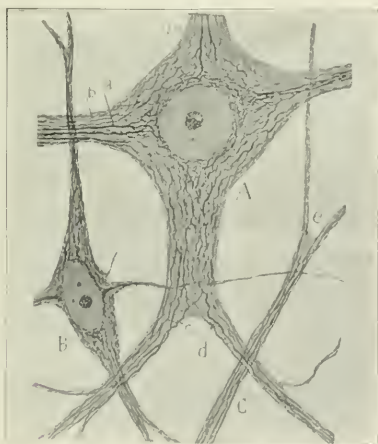


Fig. 7.—Funicular cells from a rabbit fifteen days old. *A*, large cell; *B*, small cell; *a*, large neurofibrils ramifying in the perinuclear network; *b*, fine neurofibrils continuous with the cortical network; *c*, *d*, neurofibrils bifurcating on their arrival at a large dendritic trunk. (After Ramón y Cajal, 1903).

year, I called attention to these phases of the subject, advised active skepticism as regards the new hypotheses of Apáthy, Bethe and Nissl, and expressed the opinion that, even if the neurofibrils really represent a constant

constituent of the nerve elements, and even if the inter-neuronal relation be a more intimate one than that of mere contact or contiguity, the essential feature of the neuron conception remains unaltered, Waldeyer having



Fig. 8.—Large funicular cell from a rabbit eight days old. Certain only of the primary neurofibrils have been drawn. The network formed by the anastomoses of these filaments is well shown. *a*, neurofibrils terminating in the network; *b*, primary neurofibril running through. (After Ramón y Cajal, 1903.)



Fig. 9.—Cell from the spinal cord. (After Donaggio).

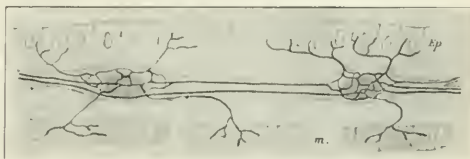


Fig. 10.—Scheme of the course of the neurofibrils in a nerve network in lower animals. (After Bethe, 1903.) Not confirmed by recent researches.

stated in an article in which he gave the neuron its name that "if we assume . . . the existence of nerve networks, the conception is somewhat modified, but we

can still retain the nerve units. The limits between two nerve units would then always lie in a nerve network and not, anatomically at least, be exactly definable with our present methods." I accompanied my review, therefore, at that time, with the statement, "There may be



Fig. 11.—Scheme of the course of the neurofibrils in the nervous systems of worms. *G*, ganglion; *Gz*, ganglion cells; *Rz*, reception cells. (After Bethe, 1903.) Not confirmed by recent researches.

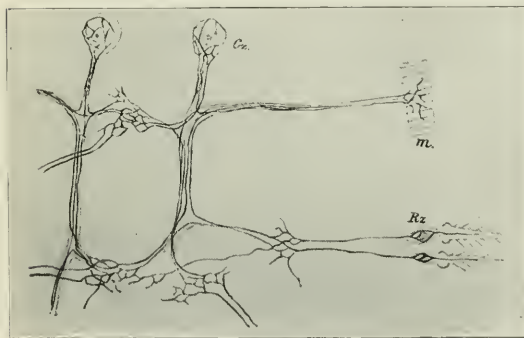


Fig. 12.—Scheme of the course of the neurofibrils in the nervous system of the crab. (After Bethe, 1903.) Not confirmed.

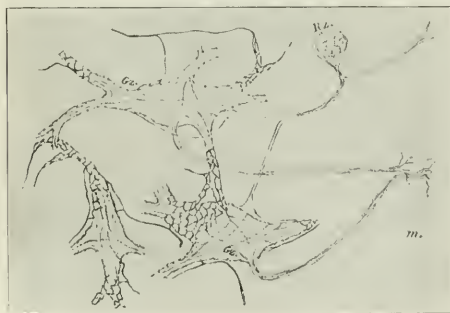


Fig. 13.—Scheme of the course of the neurofibrils in the nervous system of vertebrates. (After Bethe, 1903.) Relation to the Golgi net is shown. Not confirmed by newer work.

units smaller than cells, and in all probability there are; there may be, and probably are, in the nervous system units other than those generally described, and it is

important that we should find out all that there is to learn about them; but that the human body is made up largely of a mass of cells, and that the human nervous system is made up largely of great numbers of cell units, the so-called neurons, would seem to be facts too firmly established ever utterly to be overthrown."

IV. MORE RECENT WORK: FACT AND THEORY TO-DAY.

During the next five years (1899-1904) the subject of neuro histology was enriched by a mass of detailed

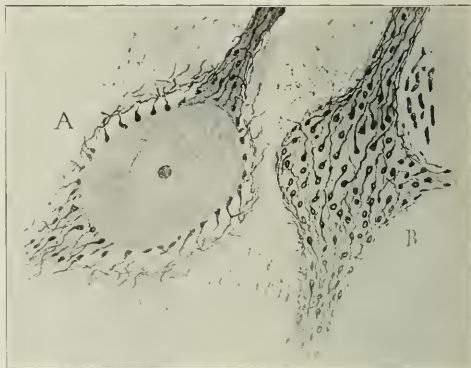


Fig. 14.—Two large funicular cells of the spinal cord of the adult rabbit. *A*, section through a cell showing terminal buttons of Auerbach ending on the surface of the cell and on the dendrites; *B*, terminal buttons shown on the surface of the cell. (After Ramón y Cajal, 1903.)

investigative work.⁶ Many studied the neurofibrils and extended our knowledge of them, among them Paton, Prentice and Biart in America. In addition, the



Fig. 15.—Transverse cut through a ganglion of the leech showing the neurofibril networks in the ganglion cells and the non-anastomosing plexus of neurofibrils in the point substance. (After Ramón y Cajal, 1903.)

period of polemical writing on the neuron and the neuron doctrines reached its zenith. Edingen, in 1898, had urged the importance of the concept of the neuron

6. See the review by Prof. G. E. Goghili, "Recent Studies on the Finer Structures of the Nerve Cell," Jour. Comp. Neurol., Granville, O., 1904, vol. xiv, p. 171.

as a biologic unit; Hoehe (1899) had admitted that the histologic unity of the neuron could no longer be upheld, but urged that it was a functional-trophic unit. Münzer (1899) took the stand that the neuron doctrines were better founded than ever, and that the criticisms of Nissl and Bethe were without weight. Auerbach (1899) supported a modified neuron doctrine, while Semi Meyer, von Lenhossék, van Gehuchten, and Ramón y Cajal could see no reason for changing the original conception and doctrines. Max Verworn, in a collective review read before the German Society of Naturalists in 1900 took almost precisely the stand I took in 1899. The two longest publications of the anti-neuronists are those of Bethe (1903) and Nissl (1903). Bethe's book,⁷ while it represents a vigorous attack on the neuron doctrine, embodies the results of most interesting and important original researches, and should be carefully read by every neurologist. Nissl's large volume,⁸ which was reviewed for the *Psychological Bulletin* by Dr. Adolf Meyer, is devoted entirely to controversy and is looked on by ardent neuronists as a sort of attenuated curse of St. Erulphus on the neuron doctrine and its supporters.

In December, 1903, by good fortune, I happened to be in Madrid just at the time when Ramón y Cajal⁹ announced his discovery of a new and easy method for demonstrating the neurofibrils. He kindly showed me his preparations, which made clear at a glance that a flood of new light was at once to be thrown on these remarkable constituents of the nerve cells and nerve fibers (Figs. 6, 7 and 8). His method is simple, is easily applicable to invertebrate as well as to vertebrate tissues and to the embryonic nervous system as well as to that of the adult. It stains the fibrils much more perfectly than is possible with the methods of Bethe and Apáthy, and has the further advantage that it leaves the glia entirely unstained. A somewhat similar, though more complex, method, devised independently and almost simultaneously by Bielschowsky¹⁰ of Berlin, is also now much used for demonstrating the neurofibrils. The finest fibrils are said to be best shown by still a third method, that of the Italian investigator, Donagiollo¹¹ (Fig. 9).

Let us now turn to an examination of the principal points which have been under discussion of late and see what is the actual state of knowledge concerning them.

(a) *The Neurofibrils, Golgi Nels and Interneuronal Relations.*—Studies by the methods of Cajal and Bielschowsky and by the method of Donaggio have shown how rich and delicate the network of neurofibrils in the nerve cells is. Bethe's method stained only the coarser strands, which, therefore, looked like isolated fibrils. The newer methods demonstrate finer fibrils, forming anastomoses among these. Bethe's schemata (Figs. 10,

11, 12 and 13) of varying arrangements of neurofibrils as the animal scale is ascended are not confirmed by these newer methods. On the contrary, the nerve cells as regards the neurofibrils are similarly built throughout the whole animal series. There appear to be no independent neurofibrils, but only neurofibril networks embedded in the nerve-cell protoplasm (see figures). The network extends through the whole neuron, but the mass of the network may increase or diminish in size in various parts. Thus there is a large fibril network in the cell body, and this is connected by the attenuated fibril network of the axon, with expansions of the network in the terminal fibers. The so-called "end-feet" of Held are now known to be identical with the terminal buttons of Auerbach, and these, ending on the surface of the cell body and dendrites, are exquisitely demonstrated by Cajal's method (Fig. 14). I have placed a specimen under the microscope illustrating them. These terminal buttons contain neurofibril networks. Nowhere, in specimens stained by Cajal's method or by Donaggio's method, in the cell body or in the terminal buttons, thus far have the neurofibrils been seen actually at the surface; it is stated that there is always an area of fibril-free protoplasm between the networks and the cell boundary.

These recent methods which stain the neurofibrils so exquisitely do not reveal any extraneuronal neurofibrils whatever, either in the region of Nissl's "nervous gray" (Cajal, Retzius) or in the so-called point substance or neuropileum of invertebrates (Cajal, Retzius) (Fig. 15). The whole area of Nissl's nervous gray appears in Cajal's specimens as a feltwork of dendrites and terminals and collaterals of axons containing neurofibrils within their protoplasm. The Golgi nets do not stain at all with Cajal's neurofibril method. Moreover, Held, by other methods, has concluded that they are derivatives of the glia; both he and Donaggio deny their nervous character. There is some evidence that the terminal buttons, to which I have referred, reach the protoplasm of the nerve-cell body by lodging in the meshes of the Golgi net. No one has been able to demonstrate any relation between neurofibrils and Golgi nets. In the light of these newer studies the enormous importance attributed by Bethe and Nissl to the Golgi nets seems, therefore, to have been premature; their views are unsupported by facts.

(To be continued.)

THE BLOOD-CLOT DRESSING IN MASTOIDECTOMY, CONSIDERED PHYSIOLOGICALLY.*

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That the special surgeon can profit largely by keeping in close touch with general surgery is generally admitted, but that all surgeons would gain immeasurably from as intimate an alliance with physiology as they have established with anatomy and pathology is a fact, perhaps, not so well recognized. Commenting on this matter, in his last review of surgery, in the December number of *Progressive Medicine*, Dr. Bloodgood alludes to the fact that the physiologist, not specially interested in practical surgical questions and not brought into contact with the daily vital problems confronting the oper-

* Read before the Southern Section of the American Laryngological, Rhinological and Otolological Society at the annual meeting, held in Norfolk, Va., 1906.

7. Bethe, A.: Allgemeine Anatomie und Physiologie des Nervensystems, Leipzig, 1903, pp. 1 to 458.

8. Nissl, P.: Die Neuronen lehren und ihre Anhänger, Jena, 1903, pp. 1 to 478.

9. Ramón y Cajal, S.: "Un sencillo método de coloración del retículo protoplásmico e sus efectos en los diversos centros nerviosos de vertebrados e invertebrados." Trab. del Lab. de Investig. biol. Madrid, 1903, vol. II, No. 4; also, Translation by Azonlay, Bibliogr. anat., Par. and Nancy, 1905, vol. xiv, pp. 1 to 93.

10. Bielschowsky, M.: "Die Silberimprägnation der Neurofibrillen." Neurol. Centralbl., Leipzig, 1903, vol. xxii, p. 997 to 1006; also "Ein neues Imprägnationsverfahren zur Darstellung der Neurofibrillen." Arch. f. Psychiat., Berlin, 1905, vol. xxxix, pp. 1321 to 1323.

11. For an epitome of Donaggio's method and work, see Donaggio, U.: "The endocellular fibrillary reticulum and its relations with the fibrils of the axis-cylinder." Rev. Neurol. and Psychiat., Edinb., 1905, vol. III, pp. 81 to 100.

ating surgeon, during his scientific investigations, learns many physiologic facts which would be of great value to the surgeon, yet, with the rarest exceptions, this valuable information is lost, so far as the practical surgeon is concerned. An occasional collection and fitting together of bits of knowledge gained in the course of many physiologic investigations, studies made perhaps without a thought of their bearing on surgery, might enable us to elucidate some of the important problems with which the surgeon has to deal. The possibilities of such a plan occurred to me some months ago while listening to a discussion on the treatment of mastoiditis and, being deeply interested in the blood-clot dressing of the mastoid wound, I determined then to consider from the physiologist's point of view the advisability of employing that method.

It is only a few years since aural surgeons were discussing with great animation the proper method of procedure for the opening of the mastoid process when diseased. To-day we do not debate over the propriety of a simple incision in the overlying soft tissues, a small perforation in the outer cortical layer of the bone or the more extensive invasion of the mastoidal cellular structure; unanimity of opinion has been reached on that point. The history of the development of the operation of mastoidectomy has been furnished us in a most interesting and entertaining way by Dr. Whiting, and we will certainly all agree with him without cavil, however we may differ in the details of performing the operation, in the dictum that the operation of the present period has for its prime object the complete and immediate eradication of all the diseased tissue. In other words, in every operation for mastoiditis the surgeon now endeavors to remove every particle of pus, detritus and necrotic or carious bone, even though he be compelled to obliterate the cellular structure of the tip, the zygomatic process and the occipital region, or to invade the cranial cavity itself. Assuming that all this has been accomplished, however, does it constitute a complete operation?

I think we may accept as applicable to mastoid surgery a statement made by J. Collins Warren,¹ with reference to osteomyelitis, that: "Modern surgery demands a complete operation; that is, one which insures rapid and permanent healing of the wound." Permanent healing of the wound will usually follow such an operation as is referred to above, but rapid healing is not so commonly assured. The ideal operation might be described as one which gives the greatest promise of a cure in the shortest possible time and at the least expense of comfort to the patient. If a mastoid wound be dressed with sterile or antiseptic packing at the time of operation, the period of healing will vary from three weeks to several months; very rarely will complete closure occur in less than this time, and I have frequently seen cases that required dressing over a period of six months. It can not be denied, either, that these dressings are often distressingly painful to the patient and always time consuming and more or less annoying for the surgeon. If a method of dressing the wound can be devised which will promote rapidity of healing without additional risk to the welfare of the patient, it will certainly add very materially to the comfort and happiness of both patient and operator. Such a method, I believe, has been provided for us in the blood-clot dressing, first recommended for use in the mastoid

operation by Dr. Clarence J. Blake, of Boston, with whose papers on the subject all of you are doubtless familiar.

The primary object of this dressing is to obtain healing of the wound by first intention, but, when this occurs, other advantages accrue; for instance, the normal contour of the mastoid process is restored, the resulting scar is a mere line which is entirely hidden from view by the auricle, and the period of healing is reduced to five or seven days, with practically no after-treatment. No deformity, almost no scar, and primary union constitute, on the whole, a stake worth playing for. On the other hand, in cases in which the blood clot fails to organize, there is no additional risk to the patient; should the wound not have been so clean as was supposed or should the clot become infected in any one of various possible ways, it simply breaks down and the wound has to be opened, cleansed and packed in the usual way, the patient then being in practically the same position he would have occupied had the open method been employed primarily.

With the modern teachings of surgery constantly before us, that all pus cavities should be treated as open wounds and compelled to fill up by granulation from the bottom, it is not surprising that this suggestion of Dr. Blake should have been received with skepticism. As I have talked with my confrères or listened to the discussion of the subject in otologic congresses, it has seemed to me that men hesitated to employ the method, first, because of a fear of the possible consequences of inclosing in the wound some microscopic particles of infective material and, second, because they considered the normal blood clot a favorable medium for the growth of bacteria. So far the answer to these expressed or implied criticisms has been solely in the nature of relating clinical experiences. A certain percentage of excellent results have been shown by those who have used the blood-clot dressing and as yet no one has related any unpleasant experience.

It is my purpose to take up these objections from another point of view, namely, to consider what happens when a clean cavity in bone tissue is filled with healthy blood clot, what power such a clot may have to overcome infective material that may have been inadvertently left in the wound, and whether general surgeons have any analogous experiences with other portions of the bony frame work, to assist us in drawing conclusions regarding the mastoid portion of the temporal bone.

Experimental and clinical studies have shown that if any clean wound be filled with the patient's own blood, and safeguarded from later infection, the blood clot tends to organize and new tissue, similar to that inclosing the clot, soon forms to replace the latter. The blood flowing into the wound cavity rapidly clots and the fibrous framework of this clot constitutes a scaffolding on which the new tissue is built. Fresh granulations spring from the walls of the cavity and grow out into the clot, forming a new fibrous connective tissue, the nature of which is further altered to accord with the character of the surrounding cavity walls; that is, if the wound be made in bone, osteoblasts are sent out from the bony walls or from the periosteum to convert the fibrous substance into osseous tissue. The migratory power of these osteoblasts is limited, and they travel only a short way from their starting point, so that, in the case of a large cavity in bone, the newly-formed bone does not extend far from the cavity wall, and the

1. "Surgical Pathology." J. C. Warren, 1895, p. 214.

center of the new-formed tissue remains fibrous in character. It seems quite probable, however, that in a small cavity, such as we ordinarily make in the mastoid process, the osteoblasts, reaching out from all directions, may extend a sufficient distance to meet in the center and thus to complete the construction of a new bony process. Just how early this osteoblastic activity commences is not known, but such cells have been observed to form within forty-eight hours after the operation, and it is certain that granulation tissue grows more rapidly into a healthy blood clot than into space. It is plain, then, that Nature may be greatly aided in the reconstruction of destroyed tissue by providing an excellent framework on which to build and leaving her only the task of furnishing vascularity and new tissue cells.

But, suppose the wound cavity to be treated is not absolutely clean, that some invisible particle of septic material is present when the blood is introduced, has the blood any bactericidal or antitoxic powers? A long series of observations by the most careful investigators has clearly proved that the normal human blood does possess such properties. Metschnikoff, Nuttall, Fodor, Lubarsch, Vaughan and Novy and a host of others have published most interesting work on this subject. From their several experiences we may safely draw the following conclusions: The normal human blood possesses bactericidal power, varying in degree in its antagonism to different micro-organisms; this property of the blood is greater after it is drawn from the vessels than while circulating intravascularly; the microbe-destroying substance is found in the serum, but is produced by the leucocytes; certain chemical changes in the blood may be induced either to increase or to diminish its bactericidal power, and this property of the blood naturally diminishes after the clot is forty-eight hours old.

Nuttall, following a suggestion of Metschnikoff, was probably the first to demonstrate the bactericidal power of normal blood serum. Working under the direction of Flügge, in 1888, he used defibrinated blood taken from various species of animals and found that this blood destroyed the *Bacillus anthracis*, *Bacillus subtilis* and the *Staphylococcus pyogenes aureus* when brought into contact with them. He also confirmed the finding of Fodor that after awhile the blood loses its germicidal properties and becomes a suitable culture medium in which germs grow abundantly.

The fact having thus been determined that the blood serum removed from the body acts far more rapidly and energetically on microbes than the plasma and lymph within the body, the disparity of action was further shown by Lubarsch,² who attempted to ascertain the exact power of the blood of some animal over a given serum; using the bacillus of anthrax and experimenting on rabbits, he injected known quantities into the circulating blood and found that this animal was quite able to take care of a dose of less than 16,000 germs, but if a larger number were injected fatal infection resulted. If he drew a small quantity of blood from an animal of the same class and size into a test tube and inoculated that with the same micro-organism, many times that number of germs were destroyed; that is, one cubic centimeter only of the rabbit's blood serum would destroy more than 16,000 of these germs when inoculated into the clot outside the body, and he could not, after a few minutes, reproduce them by culture from the clot.

Then a most interesting series of investigations followed to determine what element of the blood possessed this bactericidal quality and how it acted. Vaughan and McClintock have presented the most conclusive report on these points, and they hold that the leucocytes secrete some substance which is poured into the serum, that this substance is a proteid, and that the only proteid likely to be present in blood serum to which such properties could be attributed is nuclein.

The clotted blood possesses greater power than the circulating blood probably because in the formation of the clot the leucocytes break down and discharge their entire complement of this nuclein. Other workers have demonstrated the transient duration of this power in the blood clot, a power which seems to diminish rapidly after forty-eight hours, and the fact that certain chemical changes in the clot may cause a variation of its power. The bactericidal power seems to be present in freshly drawn blood only when it is alkaline in reaction. If its alkalinity be raised above normal the bactericidal power will be somewhat enhanced, but if the blood be below normal alkalinity or if it be rendered acid in reaction such power is diminished or actually destroyed. The nuclein acts only in an alkaline serum. Again, if alcohol be added to the blood, the bactericidal property is destroyed through the precipitation of the albuminoid constituent. Bichlorid of mercury, likewise, has a deleterious influence on the bactericidal property of blood serum.

These chemical experiments have an important bearing on the use of blood clot as a surgical dressing.

The use of carbolic acid and alcohol for the cleansing of the wound, as an extra precaution of cleanliness, prior to the introduction of the blood, has been recommended by some surgeons, but it seems not unreasonable to venture the suggestion that some of the failures with the blood-clot dressing may have been due to excessive zeal in the use of carbolic acid and alcohol for antiseptic purposes. If exact neutralization were possible and the wound left in a neutral state, no harm could result from the employment of these substances, but if there be left any measurable quantity of either it militates against success. On theoretical grounds it would appear more rational to rely on dry cleansing of the wound with instruments and sterile sponges, or to wash the cavity with sterile salt solution which, if it produces any effect on the coming clot, renders it more alkaline and increases its power to control septic material.

Leaving the realm of experimental medicine and turning to practical surgery, we find, again, the strongest possible indorsement for the employment of healthy blood clot in the healing of wounds. Most physicians are familiar with the epoch-making report of Schede, "Ueber die Heilung von Wunden unter dem feuchten Blutscharf," or know of the most excellent results obtained by Halsted and his associates in the treatment of osteomyelitis by this method. The whole subject was excellently presented by Professor Halsted several years ago and, as there is no higher authority, I could do no better than quote from his paper.³

After reviewing the objections to leaving blood in wounds and the bearing of Lister's work on the subject, he says:

"Although perfectly familiar with the organization of the

2. Allbutt's System of Medicine, vol. 1, p. 89.

3. Johns Hopkins Hosp. Reports, vol. II, p. 255-261.

blood clot, it apparently never occurred to Lister to make a systematic effort to utilize the blood clot and to imitate Nature's method of disposing of the dead spaces in wounds.

He has taught us what can be done under the cover of antiseptics. One may maltreat the tissues to any extent, mutilate the wound during the operation in every possible way, cut off by ligatures the circulation in large masses of tissue, produce extensive areas of superficial necrosis by irrigation with antiseptic solutions, stuff the wound with gauze and drainage tubes, tear out the stuffing and with it the granulations which have grown into it, restuff, etc., and still the wound may heal without suppuration, without septic inflammation and in a way which is, perhaps, altogether satisfactory to the surgeon.

But now that wound infection is for many surgeons almost a thing of the past, we may ask ourselves if, after all, our wounds are ideal wounds. One naturally hesitates to attempt to give one's notion of an ideal wound. His ideal wound of to-day may not be his ideal wound of next year or even of tomorrow. I conceive an ideal wound to be one which immediately after the operation is reduced to the condition of a non-penetrating subcutaneous wound, and which is as free as this is from the dangers of infection.

Impressed by the work of Kiister, Neuber and others, and entertaining with them the same fears of blood in wounds, it was my practice for several years to attempt with the utmost care to obliterate the dead spaces in wounds. The results were gratifying, but the technic was often very tedious. For example, after an amputation of the thigh it would not infrequently take an hour to obliterate all the dead space. The mechanical problems were sometimes quite difficult, and one was perpetually annoyed by the fear that he might strangle the tissues included in the sutures. After a time I became convinced that it was impossible to obliterate thoroughly all the dead spaces in some wounds, and I observed that wounds in which the dead spaces were not obliterated healed throughout by first intention just as regularly as did the other wounds. I was, therefore, quite prepared to welcome Schede's article on the healing of wounds under the moist blood scab. This contribution by Schede I believe to be the greatest which has been made to the technic of surgery since the introduction of antiseptic methods by Lister.

The immortal John Hunter was many years in advance of his time when he expressed himself on scabbing and the organization of the blood clot as follows: "In many deep-seated wounds, where all the parts have remained in contact, those unaccounted will unite much better if the surface be allowed to scab. Some compound fractures (more especially where the external wound is very small) should be allowed to heal in the same way, for by permitting the blood to scab on the wound, either by itself or when soaked in lint, the parts underneath will unite, the blood under the scab will become vascular and the union will be complete even when the parts are not in contact. Many wounds ought to be allowed to scab in which this process is now prevented, and this arises, I believe, from the conceit of surgeons who think themselves possessed of powers superior to Nature, and, therefore, have introduced the practice of making sores of all wounds."

From these and similar experiments and experiences, I think we are fully justified in using the blood-clot dressing to complete the operation of mastoidectomy, and I only wish to add a few words regarding the technic of its employment. You will infer from what I have said that very little can be done to assist the blood clot in its possible conflict with overlooked septic material, but a good service can be rendered by avoiding some things that would tend to hinder the blood in its beneficent work.

In the first place, the nearest possible approach to absolute surgical cleanliness must obtain throughout the operation. This applies not only to the operator and

his assistants, to the sterilization of all instruments and the protection of the operation field by proper sterile sheets or towels, but also the perfect removal, so far as can be determined, of every particle of infective material and of diseased tissue.

Next, it is exceedingly important that the wound be closed in such a way as to prevent the introduction of new infection and to promote primary union. It is my opinion that a good many failures with the blood-clot dressing have been the result of faulty closure of the soft parts. Shreds of tissue that may be infected or that would prevent neat apposition of the margins should be cut off. Chemical sterilization of the wound should not be attempted. If irrigation is considered necessary, sterile normal salt solution may be employed. Finally, for the closing of the wound, the subcutaneous silver wire suture recommended by Halsted may be used.

All physicians are familiar with the experimental work performed some years ago by Professor Welch on the sterilization of the skin. Making use of the most approved methods of cleansing the skin's surface, he could still secure a bacterial growth from the deeper layers of the corium and he determined that this region was the natural habitat of the *Staphylococcus epidermidis albus*, which germ was the active factor in the production of the common stitch abscess. If the sutures be carried through the skin from side to side of the wound, it not only makes the opportunity for a stitch abscess, but opens up a new avenue for infection of the clot. In many instances this will not be sufficient to cause a breaking down of the clot, but if that blood is having a battle with septic particles within the cavity this may be the last straw needed to cause a breakdown.

Furthermore, in the subcutaneous method of suturing wounds, silver wire is the best material to use because it possesses antiseptic properties of its own. Some years ago Bolton, working in Kelly's laboratory, undertook to ascertain the relative value of suture materials, and he found that the best of all was copper wire and next to this came silver; inasmuch as the latter is, for commercial reasons, most available and the antiseptic properties but slightly different, he recommended the general use of silver. It can be easily and surely sterilized by boiling, while catgut is, under the best of circumstances, unreliable and silk is only less so. With a subcutaneous silver wire thread, lacing the wound from side to side, and not penetrating the skin at any point, one has a suture easy of introduction, perfectly sterilizable, strong enough to bear any traction necessary to secure good apposition of the wound lips, and removable without pain at the proper time. A layer of silver foil over the closed wound, before the sterile gauze dressings are applied, will add something to the protection against septic invasion.

It may be too much to say that the complete operation referred to here and described so well to-day by Drs. McKernon and Bryant, with the blood-clot dressing, will constitute the ideal, but I believe it will come to be accepted as the standard operation of mastoidectomy.

Stokes-Adams Disease in Incipient Paresis.—M. E. Rist (Bull. et. Mem. de la Societe Med. des Hopitaux) reports a case of Stokes-Adams disease complicating the early stages of parietic dementia of syphilitic antecedents. The relation between the bradycardia and the meningoencephalitis seemed evident, but he remarks that, while lues is known as a cause of either condition, the combination here seems novel.

A. M. Schede: "Ueber die Heilung von Wunden unter den feuchten Blutschorf." Verhandlungen der deuts. Gesellschaft für Chirurgie, 1886.

SOME OBSERVATIONS ON CEREBRAL PARALYSIS.*

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These observations will be limited to the cases of paralysis that are the result of cerebral embolism, hemorrhage or thrombosis.

These three pathologic conditions constitute the vast majority of the cases. The records of Cook County Hospital for 1903 show four cases of embolism, sixty-five cases of hemorrhage and twenty cases of thrombosis. In thirty-two cases of cerebral paralysis the pathogenesis was in doubt. The records of the year 1904 show six cases of embolism, sixty-nine cases of hemorrhage, thirty-one cases of thrombosis and thirty-four cases in which the pathogenesis was doubtful.

Differentiation was made either in the postmortem room or by a medical staff very skilled in diagnosis, and they differ somewhat from the ordinary published records of such cases. They show an immense preponderance of hemorrhage, and this should be remembered at the bedside when an effort is being made to work out a diagnosis in any given case.

The records of the health office of Chicago give the following interesting results:

| | |
|--|-----------|
| DEATHS—Total from apoplexy, first period, 1885-1904 . . . | 4,653 |
| Second period, 1895-1904 | 6,036 |
| Actual increase, second period | 1,383 |
| POPULATION—Average yearly, first period | 957,644 |
| Second period | 1,656,690 |
| DEATH RATES—Apoplexy, per 10,000 of population, first period . | 4.7 |
| Second period | 3.6 |
| Per cent. decrease, second period | 23.4 |
| RATIO—Apoplexy deaths to total from all causes, first period . | 2.3 |
| Second period | 2.4 |
| Per cent. increase, second period | 4.4 |

The percentage of decrease in the second period as set forth by the table is interesting. The death rate of Chicago has been decreasing for several years, until to-day it shows a record that is very remarkable, being the lowest of any large city in the world. This decrease in cerebral apoplexy, which corresponds with a decrease in nervous diseases generally during the second period, is an encouraging outlook and would seem to show that the people of that strenuous city are adjusting themselves physically to the conditions there.

ETIOLOGY.

Cerebral paralysis in the cases to which these observations are limited is the result of periarteritis or endarteritis, producing hemorrhage or thrombosis, and endocarditis resulting in embolism.

The periarteritis or endarteritis in the case of hemorrhage weakens the muscular coat of the vessel and produces aneurisms, usually military, and the process continues until the walls become so feeble that rupture occurs. In the case of thrombosis the intima becomes roughened and gradually fibrinous deposits take place, little by little obliterating the lumen until finally occlusion occurs. In the first case the blood vessel carries the blood current with sufficient success to meet the ordinary demands of the brain for nutrition until the moment that rupture occurs. Hence there is in hemorrhage usually an absence of prodromal symptoms. In the second case the process of obliteration is slowly carried on and the nutrition of the brain is more or less interfered with from the beginning; therefore, prodromal symptoms are the rule, such as headache, vertigo,

transitory paresis and aphasia and a sense of general discomfort in cerebral function.

In the case of endocarditis there is as a sequence the formation of polypoid vegetations on the valves of the heart, and later these vegetations become detached and are carried by the blood current until they reach a point beyond which they can not pass and occlusion occurs. For anatomic reasons with which you are perfectly familiar, the usual route traveled by an embolus is the left common carotid artery, the left internal carotid, the left middle cerebral, and the occlusion occurs in one of the branches of this artery that supplies the basal ganglia and the internal capsule. There is under these circumstances no interference with the brain nutrition until the very moment occlusion occurs, and, therefore, there are usually no prodromal symptoms, except such as are of a general character that may arise from an uncompensated heart.

The cerebral circulation is remarkable in the comparative absence of anastomosing branches, in the terminal character of the vessels, and in the fact that they lie in the perivascular spaces without the usual protection that contiguous tissue gives in other parts of the body, and the seriousness of any one of these pathologic processes is greatly increased by the interference that it produces in the brain with the lymph circulation. The vessels that supply the basal ganglia and the internal capsule, arising directly from the middle cerebral arteries, are comparatively large and have generally a high blood pressure, and the pathologic process that occurs here is not only more extensive, but more frequent.

In these several pathologic conditions we must not only consider the direct damage done to the brain by the destruction of neuraxons that lie in the focus of the lesions, but around about this focus there is always an area more or less extensive of collateral edema and exudation that for a time effectually destroys the functions of the territory.

The apoplectic coma must be differentiated from the syncope of alcoholic intoxication, from the coma of epilepsy, uremia, diabetes and from drug poisoning. In some cases this is extremely difficult. An eminent medical practitioner of Chicago some few years ago left his home to visit a case some distance away. He was quite fatigued on leaving his home and took a drink of whisky. Before he reached the house of his patient he fell on the sidewalk; a policeman, passing by, recognized him, smelt the alcohol on his breath, jumped to the conclusion that the doctor was intoxicated, carried him to a near-by drug store, and placed him in a rear room until he would recover from the alcoholic intoxication, as he supposed. A doctor, who officed over the drug store, was called in to see him, and he accepted the diagnosis of the policeman. When morning came the good doctor's coma, if anything, had deepened, and then consultation was called and his family notified. At the time of consultation there was but little difficulty in the differentiation. The muscular tonus of the two sides was different; there was conjugate deviation of the face and of the eyes. Skin reflexes were lost on the paralyzed side. There was a well-defined Babinski toe sign. Arterial tension high. Rectal temperature lowered. Temperature on the paralyzed side increased. Perspiration marked on the paralyzed side. These several symptoms and the absence in the history of prodromes rendered the diagnosis of cerebral hemorrhage possible, which was subsequently verified by postmortem. Mistakes

* Read before the Sioux Valley Medical Association.

such as were made in this case are not at all infrequent in large cities and warn us that we should always be on our guard and not be led astray by alcoholic odor on the breath. I regard the conjugate deviation of the face and eyes and the Babinski toe sign when present (unfortunately they are not always present) as invaluable pathognomonic signs.

In thrombosis we should expect a series of prodromal symptoms covering a space of several months, a low arterial tension, a slight degree of coma, unchanged temperature, and a pale face. In a recent case of cerebral paralysis, however, prodromal symptoms that were present for a few days before the apoplectic seizure and the normal arterial tension resulted in a diagnosis of cerebral thrombosis, when the postmortem findings gave cerebral hemorrhage.

I am very much of the opinion that we should be extremely guarded in reaching positive conclusions as to whether a given case is one of hemorrhage, thrombosis or embolism. In embolism we do not expect arteritis, we do not expect prodromata, and we do find valvular heart disease, but we must bear in mind that a valvular heart disease is not inconsistent with the possibilities of either thrombosis or hemorrhage.

The prognosis in cerebral paralysis is grave in proportion to the depth and duration of the coma. Cheyne-Stokes respiration will always make the prognosis serious, and convulsions add greatly to the gravity. Acute bed-sores are also serious indications. Sudden elevation of temperature will make prognosis doubtful, and an attack, no matter how slight, implies probability of a recurrence. In favorable cases improvement will be manifest at the end of a week. Early contractures are not serious in their import, but contractures that occur about a month after the seizure are an evidence of a descending degeneration in the motor tract, and this usually means that no further improvement can be expected.

TREATMENT.

The preventive treatment of cerebral hemorrhage or thrombosis is the treatment of the arterial degeneration on which they both depend. The etiology of this is sometimes clear enough, and when it can be determined the treatment will suggest itself. I think the specific relations to arterial degeneration are sometimes overlooked. I am of the opinion that degenerations of arteries that are found in younger people, in the absence of interstitial nephritis, of very pronounced chronic alcoholism and tuberculosis, are specific and demand the use of mixed treatment to the maximum capacity of the individual. Those cases that do not have a specific history are much benefited by a course of chlorid of gold and sodium. This drug should be rubbed up dry with the pulverized resin of guaiac, put dry in a capsule, and administered before meals. Along with this there must be a proper attention to elimination by the skin, kidneys and bowels and due attention to the digestive function.

The treatment of the apoplexy depends on the diagnosis of the lesion. If you are sure that it is hemorrhage, reduce arterial tension, administer croton oil, thereby bleed the patient into his own abdominal vessels. Apply ice to the head; hot mustard plaster to the feet. If possible, tincture of aconite, frequently repeated, in full doses. Have the head of the bed raised. If you are sure the lesion is thrombosis, the treatment should be diametrically opposite. Increase arterial tension by strychnia and other cardiac tonics; avoid active

purgation. In the great majority of cases the safe treatment will be characterized by a masterful inactivity. Quiet, warmth, cleanliness, position in bed to secure the best respiratory activity, due attention to the bladder and bowels are safe indications in every case.

With the disappearance of the apoplexy, attention should be given to the paralyzed muscles. Gentle massage and passive movements that will preserve the nutrition of the muscles are indicated from the beginning. The muscles in cerebral paralysis atrophy with rapidity sometimes; especially is this the case with the deltoid, and if the muscles are not maintained in a proper state of nutrition when the collateral edema already mentioned disappears function can not be re-established. In my experience, this very important consideration is often overlooked. After about ten days mild faradic exercise of the muscles should be commenced and used every day. The sances should be short, remembering that it is easy to produce exhaustion in the muscles, thereby defeating the object of the treatment. Two or at most three contractions of each muscle or group of muscles at each sance is enough, and the least current that will produce this result should be used.

There is a difference of opinion as to the value of cerebral galvanization in these cases. For my own part, I am confident that a mild constant current of from two to five milliamperes, positive electrode to the head and negative to the nucha, for about five minutes daily, favors the disappearance of the edema and exudations and the retrograde changes that must take place in the pathologic focus. I, therefore, advise cerebral galvanization.

As soon as there is any appearance of returning voluntary power the patient should be encouraged to exercise it freely, and many failures in treatment result from a want of persistent effort in this direction. The moderate use of the iodids and of the easily assimilable preparations of phosphorus assist in bringing about the necessary nutritional changes in the brain and in maintaining the general health of the patient while the process of repair is going on.

Aphasia, a common symptom in right hemiplegia in right-handed persons, can often be greatly benefited by education. A few years ago a young man received a gunshot of the head, resulting in right hemiplegia and aphasia. Little by little the hemiplegia disappeared; the aphasia remained. His sister, under my instruction, began the work of re-educating him. I presumed the speech center on the left side of the brain was destroyed, and I think the excellent work she did after twelve months resulted in his being able to talk with very great facility was a consequence of an education of the center on the other side—the center of left-handed persons. But be it as it may, the result was a restoration of his speech capacity, and what was done in his case can be done in other cases by an earnest and persistent effort. I have almost succeeded recently in accomplishing the same result in a much older person after several months' earnest work by a wife and daughter. In this case there was a reacquisition not only of the speech capacity, but of the writing capacity, and when the person writes slowly he writes well; when he talks slowly and deliberately he articulates well.

I think we are very much disposed to neglect this educational feature in the treatment of cerebral paralysis.

34 Washington Street.

DOUBLING OF THE CARDIAC RHYTHM AND ITS RELATION TO PAROXYSMAL TACHYCARDIA.

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Paroxysmal tachycardia derives its name from the characteristic paroxysms of extremely rapid heart action that occur from time to time. These usually begin abruptly, last for minutes, days or weeks, and finally end almost as abruptly as they began. During the paroxysm the pulse rate ordinarily ranges between 180 and 300 a minute. At times the patient is hardly conscious of his condition. More frequently, however, he suffers from various cardiac symptoms, such as palpitation, dyspnea and painful or oppressive sensations in the precordium. In severe cases, well-marked signs of cardiac insufficiency, such as venous stasis and edema, may be present.

No adequate physiologic explanation of this form of tachycardia has been given. In many of its features it suggests a neurosis, yet attempts to produce a similar acceleration experimentally, either by stimulation of the accelerator or by division of the inhibitory nerves to the heart, have failed. Recent observations have thrown quite a new light on the nature of paroxysmal tachycardia and these new facts must hereafter find a place in any attempt at an explanation of this most remarkable affection. It has been demonstrated that, in a number of patients at least, there is an abrupt doubling of the heart rate at the beginning of the paroxysm of tachycardia, and that the return to the original rate is sometimes as abrupt as the onset.¹

Considerable interest, therefore, is attached to the phenomenon of a doubling of the cardiac rhythm. The following case is reported partly because it adds another to an already interesting series of cases and partly because it serves to prove that a doubling of the pulse rate may occur, even though none of the clinical features of paroxysmal tachycardia are present. For permission to report this case I am indebted to Dr. J. O. Hirschfelder, in whose wards these observations were made.

Patient.—T. C., a longshoreman, aged 59, was admitted to the City and County Hospital of San Francisco, Sept. 27, 1905, his complaint being shortness of breath.

History.—His family history was negative. He had been a very healthy man up to the present illness; he denied venereal infection. He drinks regularly five or six whiskies and five or more glasses of beer daily. He chews and smokes to excess and is accustomed to very heavy labor.

Present Illness.—The patient felt well till seven months ago, at which time he first noticed some shortness of breath on exertion. This dyspnea gradually grew worse until finally it became continuous and so bad that he was compelled to assume the sitting posture at night in order to sleep. He has had some edema of the feet and legs. About one month ago his left pleural cavity was tapped and a large quantity of fluid withdrawn. He has an occasional cough, with slight yellowish expectoration. At times he has pains in the left side of his chest, made worse by coughing. For the past three weeks he has been passing unusually large quantities of urine, and his edema has practically disappeared. Occasionally he has slight headaches; there are no other serious symptoms.

Examination.—The patient is a well-developed but somewhat

emaciated laboring man. Conjunctivæ are pale. Lips and fingernails are pale and cyanotic. Pupils are normal. There is a slight arcus senilis. Tongue and throat are negative. The chest is somewhat barrel-shaped. The lower right side moves somewhat better than the left. In the right interscapular region there is slight dullness, with increased fremitus and harsh expiration, but it is doubtful if these represent any more than the normal difference between the two sides. No râles could be heard.

Heart.—A diffuse pulsation is visible over the precordium, with the point of maximum impulse in the fourth intercostal space 8 cm. from the median line. There is a heaving impulse on palpation. The area of cardiac dullness begins above at the middle of the third rib and extends 8 cm. to the left of the median line and 3 cm. to the right. At the point of maximum impulse the first sound is well heard and clear; the second sound is faint and it is accompanied and followed by a faint blowing murmur. This diastolic murmur is heard over the whole of the precordium, being loudest in the third and fourth intercostal spaces near the sternum and very faint over the aortic area. During his stay in the hospital this murmur disappeared. Both second sounds are faint. The radial arteries are much thickened and slightly nodular. There was no collapsing character to the pulse even at a time when the diastolic murmur was well heard. There was no visible venous pulsation in the neck.

Abdomen.—The hepatic flatness begins at the upper border of the sixth rib and extends to the costal margin, the total vertical flatness being 10.5 cm. in the mammary line. The edge of liver could not be felt. Splenic dullness was not enlarged and the spleen could not be felt. The kidneys were not palpable. Pulsation of the abdominal aorta could easily be felt. Reflexes were normal.

Urine.—Specific gravity, 1.010; clear, neutral, amber, no albumin, no sugar; microscopically, a few hyalin and finely granular casts were seen.

The history of the patient was that of a man who had suffered from a gradually progressing and rather serious cardiac breakdown, with urgent dyspnea, general anasarca, and a left hydrothorax. At the time of admission he had partially recovered from this breakdown, and during his stay in the hospital he continued to improve until at the end of two months he was able to leave and to do light work. It is difficult to define the exact nature of his cardiac lesion. The faint diastolic murmur heard at the first examination was probably of but little importance, for had it denoted an aortic lesion of any severity the pulse would probably have shown a collapsing quality and the murmur would not have disappeared during his stay in the hospital. This murmur is probably to be classed among the functional diastolic murmurs, the most frequent of which are transmitted venous murmurs.² We have no reason to suspect a neurosis in this patient, for with a high grade of cardiac insufficiency he presented absolutely no neurotic stigmata and no abnormal cardiac sensations. By exclusion, therefore, we are led to diagnose a lesion of the heart muscle, which diagnosis is strengthened by the history of such etiologic factors as hard work, the abuse of alcohol and tobacco, and marked peripheral arteriosclerosis. No history of typical attacks of paroxysmal tachycardia could be obtained. The history was rather that of a gradually progressing cardiac breakdown followed by an equally gradual recovery. At no time did the pulse rate rise above 145 a minute.

During the examination of September 29 it was noticed that the heart rate as observed at the apex changed abruptly, according to the position of the patient, without his being in any way conscious of such a change.

1. A. Hoffmann: "Neuere Beobachtungen über Herzjagen." Deut. Arch. f. klin. Med., vol. lxxviii, p. 39; "Ueber Verdoppelung der Herzfrequenz nebst Bemerkungen zur Analyse der unregelmässigen Pulses," Zelts. f. klin. Med., vol. llii, p. 206. Lommel: "Ueber anfallsweise auftretende Verdoppelung der Herzfrequenz." Deut. Arch. f. klin. Med., vol. lxxxi, p. 495.

2. Cabot and Locke: Johns Hopkins Hospital Bulletin, May, 1903.

While lying flat on his back, the rate varied between 68 and 72 a minute, whereas when he sat up in bed it varied between 134 and 142. The ratio between the two was, therefore, approximately 1:2. Usually the pulse rate as felt at the wrist corresponded to the apex rate. Yet this was not always the case. At times, when the patient was sitting up, only half as many pulsations were palpable at the wrist as at the apex, for the reason that every other contraction of the heart failed to produce a palpable radial pulse. At such times palpation of the apex, as well as tracings taken from this region, revealed no difference either in time or character between the apex beats giving rise to radial pulsations and those failing to do so. By auscultation over the heart, however, it could be demonstrated that the second sounds were barely audible after those beats that produced no palpable radial pulses.

Having found that the heart rhythm altered with change of position, it remained to demonstrate this alteration by graphical methods. Unfortunately, a complete set of tracings were not made on this day; and, although the patient was under constant observation for two months subsequently, the same condition did not recur. Usually his pulse was absolutely regular, its rate varying between 60 and 90 a minute. At times, however, it became very irregular, partly owing to the occurrence of extra systoles and partly owing apparently to an irregular rate of stimulation. Two good tracings, illustrating the change from the fast to the slow rhythm, were obtained, both of them being practically identical. Figure 1 shows on the left the rapid rate, the average duration of beats being 2.26 fifths of a second (average taken of 26 beats). It shows on the right the slow rate with an average duration 4.46 fifths of a second per beat (average of 11 beats). The ratio between the two is almost precisely 1:2; in other words, the heart is beating twice as fast in the one as in the other. On the second tracing, not reproduced, the average duration of the short beats is 2.1 fifths of a second and of the long beats 4.1 fifths of a second. Here, again, the ratio is almost precisely 1:2. The normal pulse rate of this patient in bed, as shown by subsequent observations over a period of two months, lay between 60 and 90 a minute, i. e., the average duration of the pulse was 4.2 fifths of a second. We may assume, therefore, that the slower of the above rates represents the normal rate, and that the more rapid rate is caused by a doubling of the heart rhythm.

What physiologic explanation can be given for such a doubling of the pulse rate? According to Englemann, the activity of the heart may be affected in the following four ways: (1) The rate of stimulation may change; (2) the irritability of the heart muscle, its responsiveness to stimuli, may be altered; (3) the conduction of the stimuli from the mouths of the great veins to the apex of the heart may be affected, and (4) the contractile power of the muscle itself may be altered. How can a doubling of the cardiac rhythm be explained in accordance with this hypothesis of Englemann? At first thought one would be inclined to attribute the change in heart rate to an alteration in the rate of stimulation. A more exact analysis of these curves, as well as of those of other authors, fails, however, to support this supposition. In that case, we should expect no such sudden alteration of the pulse rate as is here present, but rather a gradually increasing rate, e. g., from 70 to 80, 90, etc., up to 140 and *vice versa*. A gradual

transition of this character is observed after section of the vagi or after stimulation of the accelerator nerves. It occurs during exercise, excitement, etc. In all of these cases the more rapid heart rhythm is due to an increased rate of stimulation. In the class of cases under consideration no such gradual transition takes place. There is a sudden jump from the slow to the fast rhythm and the return from the fast to the slow is often equally abrupt, as it was in the present case. The only satisfactory explanation hitherto advanced for such an abrupt jump is that put forward by Hoffmann.¹ He assumes that in these patients, and possibly in normal persons as well, the heart is stimulated much more frequently than a study of its rate would seem to indicate, but that it does not contract with every stimulus. In the above patient, for example, we may assume that the heart constantly receives 140 stimuli each minute, but that in the recumbent position it responds only to every other stimulus and that consequently it beats at the rate of 70 a minute. When the patient sits up, the heart then responds to every stimulus and its rhythm changes abruptly from 70 to 140 a minute.

This failure of the heart to respond to every stimulus may be accounted for in three ways according to the Englemann hypothesis: (1) The irritability of the heart muscle, always lessened after a contraction, may not recover after one stimulus in time to respond to the next. The heart would then contract only with every other stimulus. (2) The contractile power of the heart muscle may be similarly slow in recovering with a similar halving of the heart rate. (3) Each stimulus may cause a contraction of the fibers about the mouths of the great veins, but this contraction may not be conducted to the remainder of the heart; in other words, there is a "blocking" of every other contraction wave high up in the auricle. It is difficult to decide in which of these ways the heart fails to respond to every stimulus.

The last or "block" theory derives considerable support from the fact that we may get a second doubling of the heart rhythm. Hoffmann, for example, has observed a pulse rate changing from 60 to 120 a minute and afterward from 120 to 240. If we assume that this heart normally receives 240 stimuli a minute and that its responsiveness to these stimuli gradually lessens, then we should expect that at first it would respond only to every other stimulus and that its rate would become 120 a minute. If, then, its irritability or its contractility were still further diminished, we should expect that it would respond to every third stimulus and that its rate consequently would become 80 a minute. Such a reduction may, indeed, occur, as happened in my own case (Fig. 2), but it appears to be rather exceptional and never of long duration. As a matter of fact, the rhythm drops from 120 to 60, instead of from 120 to 80. It is difficult, therefore, to explain a fourfolding of the rhythm on the theory that the heart muscle is lacking either in irritability or contractility.

The hypothesis of a "blocked" impulse will, however, explain this fourfolding of the rhythm in a very satisfactory manner. We need only assume that the impulse is blocked at two separate points, the one being situated below the other. At the first point every other beat is blocked and the rate is reduced from 240 to 120; at the second point every other beat that remains is again blocked and the rate is then reduced from 120 to 60 per

minute. Kries³ has shown experimentally that a blocking of the cardiac wave of contraction between the auricle and the ventricle of a frog's heart, produced by artificial cooling, follows this same rule, the ratio between the auricular and the ventricular rhythms becoming 2:1, 4:1, 8:1, whereas the intermediate ratios such as 3:1, 5:1 are not obtained. Erlanger,⁴ on the other hand, has shown for the mammalian heart that the 3:1 ratio may be produced experimentally, thereby proving that the 3:1 ratio is not inconsistent with a blocking. In view of these facts, therefore, it would seem that our best explanation of a doubling with subsequent four-folding of the cardiac rhythm is that the heart is receiving a great number of stimuli, but that these are blocked at two successive points, one below the other.

In Figure 1 the rapid beats before the transition show a distinct tendency to vary regularly in size, smaller beats (b, d, f, h, j, l) alternating with larger ones

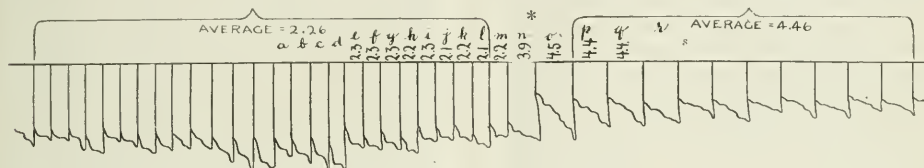


Fig. 1.—A radial tracing showing the transition from the slow to the fast rhythm. Time is marked in fifths of a second. At * the interne who was listening to the heart exclaimed that its rhythm had changed.

(a, e, e, g, i, k, m). This phenomenon has been demonstrated far more conclusively by Hoffmann and by Lommel. They observed a diminution in the size of alternate beats which progressed gradually until finally the smaller pulsations disappeared and a half rhythm was established. The transition from the slow to the fast rhythm may take an opposite course, i. e., small beats appear between the larger ones and gradually increase in size until all become equal and the rhythm is doubled. Such observations favor the second of the above explanations of the doubled rhythm, namely that the contractile power of the heart muscle is at fault.

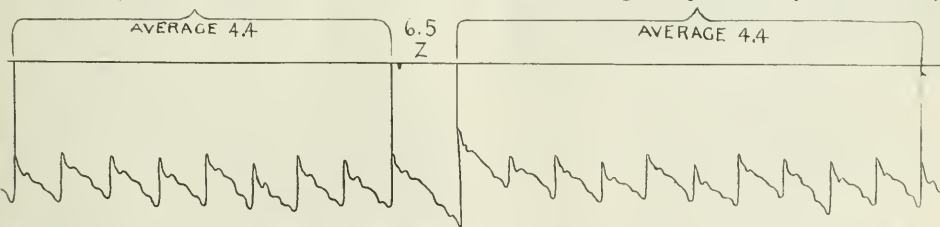


Fig. 2.—A long beat (z) interposed in the slow rhythm. Notice that its length, 6.5 fifths of a second, is one and a half times that of the other beats.

If this power to contract is not recovered quickly enough after a previous contraction, then every other beat may be omitted and the rhythm halved. As the power to contract gradually returns, we get beats of increasing size. So far as Figure 1 is concerned, it will be noticed that the first beat to disappear entirely would have belonged to the series of larger pulsations (it being the second beyond "m"). From this it would appear that the smaller beats are not necessarily the ones that disap-

pear. In another tracing, showing a transition from the fast to the slow rhythm, an alternation in the size of the beats can also be made out just prior to the transition, but in this instance the smaller beats ultimately disappear. In neither case is there a gradual dying out of the smaller beats, as has been figured by Hoffmann and by Lommel. An alternation of small with large beats may even persist throughout the tachycardial attack, and I am inclined to offer this as an explanation of the fact that at times my patient's pulse seemed to be beating only half as fast as his heart. It is quite possible that the alternating small beat was not palpable at the wrist. Unfortunately, no tracings were taken at such a time.

Figure 2, a pulse tracing taken during the slow rhythm, shows one unusually long beat "z" interposed in what would otherwise be an absolutely regular rhythm. The length of this beat, 6.5 fifths of a second, is almost

exactly one and a half times as long as the beats that precede and follow it (4.4 fifths of a second). Precisely similar lengthened beats, five in all, were discovered scattered through a number of other tracings. In all of these the lengthened beat was just half again as long as the ordinary slow beats about it. The cause of this peculiar relation between the length of these beats becomes clear if we recall the hypothesis advanced to explain the doubling of the heart rate. According to this hypothesis, the slow rate results from a failure of the heart to respond to every stimulus received. If now occasionally, instead of failing to respond to every other stimulus, it

failed to respond to two in succession, then the length of the resulting long beat would be three times the length of the stimuli and one and a half times the length of those beats that represent two stimuli. These longer beats, therefore, lend strong confirmation to the hypothesis that this heart received a double number of stimuli during its slow rhythm.

In Figure 1 it will be noticed that the first of the longer beats (n) has a duration of 3.9 fifths of a second, whereas the following beats average 4.46 fifths of a second. I am inclined to attribute this shortening, not to any change in the rate of stimulation, but to a difference in the rate of propagation from the auricles to the

3. v. Kries: "Feher eine Art polyrhythmischer Herzstätigkeit," *Arch. f. Anat. u. Physiol.*, 1902, Physiol. Abteil.
4. "Vorläufige Mitteilung über die Physiologie des Herzblocks in Säugtieren," *Zentralbl. f. Physiol.*, vol. xix, No. 1.

periphery. Hering⁵ has shown that, in general, longer waves travel to the periphery more rapidly than do shorter waves. This difference in propagation may possibly take place either within the heart itself or in the peripheral arteries. At any rate it is sufficient to explain the shortening of "n."

The question naturally arises as to whether or not we should consider the acceleration in this patient's pulse as an attack of paroxysmal tachycardia. Unfortunately, it is impossible to answer this question with any degree of certainty. If we regard an extremely rapid heart action as a cardinal symptom of paroxysmal tachycardia, then our patient could not be placed in this class, for even in the attack his pulse did not exceed 145 beats a minute. It is difficult to maintain such arbitrary clinical standards, and we all know how greatly the mild forms of a disease may differ from the severe ones. In view of this difficulty, it seems justifiable, at least for the present, to pay more attention to the physiologic peculiarity, the doubling of the heart rhythm. So far as I know, no typical clinical instances of paroxysmal tachycardia have been reported in which such a doubling of the heart rate was proved to be absent. Furthermore, in one of Hoffmann's cases, the doubling of the pulse from 60 to 120 was followed by a second doubling to 240. Had this second doubling been omitted, one might have questioned the nature of the case; yet with the second doubling it became a typical paroxysmal tachycardia.

Whether paroxysmal tachycardia is to be regarded as a definite disease or whether it is merely a symptom-complex must remain undecided. The pathologic anatomy of the condition is still very uncertain. Many cases would appear to rest on a neurotic basis, this view being strengthened by the fact that not infrequently the paroxysm can be aborted by pressure on the pneumogastric nerve, by holding a deep inspiration, etc. On the other hand, coronary sclerosis may be present and it can seldom be excluded with any degree of certainty.⁶ The patient here reported gave a typical clinical picture of myocardial disease. Quite possibly paroxysmal tachycardia is merely a symptom that may be produced by different causes, and anatomic changes in the heart muscle may or may not be present. Such also seems to be possible in several other forms of disturbed cardiac rhythm.

THE FORMATION OF URIC ACID.

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NEW HAVEN, CONN.

(Concluded from Page 446.)

THEORIES OF URIC-ACID SYNTHESIS.

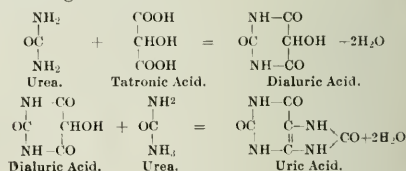
Although most physiologists have adopted the theory of the formation of uric acid by an oxidative transformation of purins arising in intermediary metabolism, there is another possible mode of origin which can not be dismissed without due consideration. I refer to the direct synthesis of uric acid. That nucleic acid can be synthesized and the construction of the purin nucleus become possible in mammals is beyond question in the case of developing and growing animals living on a practically purin-free dietary.²⁰ That uric acid itself is

formed by synthetic processes in birds is also verified beyond doubt. In mammals the end product of nitrogenous exchange is quite different, however. When the synthesis of uric acid had been accomplished in the laboratory repeated attempts were made to induce an analogous formation in animals. Horbaczewski's arti-

ficial synthesis from urea $\begin{array}{c} \text{NH}_2 \\ | \\ \text{C} \\ | \\ \text{NH}_2 \end{array}$ and glycochyl $\begin{array}{c} \text{NH}_2 \\ | \\ \text{CH}_2 \\ | \\ \text{COOH} \end{array}$ could not be imitated by feeding these compounds; and similar failure in man followed the administration of ammonium sarco-lactate $\begin{array}{c} \text{OH} \\ | \\ \text{C}_2\text{H}_4 \\ | \\ \text{COONH}_4 \end{array}$ and urea which Min-

kowski found effective in producing uric-acid synthesis in birds.

It has been noted in a few cases that the ingestion of considerable quantities of non-nitrogenous foods like fats or sugars may be accompanied by an increased elimination of uric acid. To what extent the conditions for the elimination of uric acid have been modified under such circumstances can not be decided; at most the data admit of a twofold interpretation. The most successful advocate of the immediate synthesis of uric acid in mammals is Wiener,²¹ who has pointed out the twofold source of uric acid in birds—the synthetic and oxidative production—and assumes a similar twofold possibility of formation in mammals under appropriate conditions. The suggestions arose from observations on isolated organs in extracts of which the addition of certain non-nitrogenous compounds, such as tartronic acid and dialuric acid, with and without urea led to an increased formation of uric acid *in vitro*. The theoretic possibilities involved in such a scheme are indicated by the following reactions:



In repeating these experiments of Wiener, Burian²² has noted similar increase in uric-acid formation by tissue extracts in the presence of the non-nitrogenous salicylic, tartronic and dialuric acids. He has shown, however, that this is in no sense due to any synthetic participation by these compounds. When the extracts are devoid of purin compounds no increase in uric acid is observed; the part played by the non-nitrogenous compounds is that of accelerating the oxidation of the purins (xanthin) present. The oxidative mode of formation already explained applies equally well in these cases. We may therefore dismiss the supposed experimental evidence for the assumption of a partial synthetic origin of the uric acid eliminated by mammals.

Various authors²³ have called attention to a further possible genetic relation between the pyrimidin compounds (represented by certain decomposition fragments like thymine, uracil and cytosine of nucleic acids) and uric acid; and from another aspect Knoop and Wind-

21. Wiener: Ergebnisse d. Physiol., 1902, vol. I, 1, p. 606; Hofmeister's Beitr. z. Chem. Physiol., 1902, vol. II, p. 42.

22. Burian: Zeitsch. f. Physiol. Chemie, 1905, vol. XLIII, p. 497.

23. Cf. Kossel and Steudel: Ibid., 1903, vol. XXXIII, p. 58; also vol. XXXIX, p. 136.

5. "Ueber kontinuierliche Herzbilgemine," Deut. Arch. f. klin. Med., vol. LXXIX, p. 182.

6. Romberg: Herzkrankeheiten, p. 940.

20. Cf. Miescher: Arch. f. Exper. Path. u. Pharmak., vol. XXXVII, p. 100; Kossel: Zeitsch. f. Physiol. Chemie, 1885, vol. X, p. 248; Burian and Schur: Ibid., 1897, vol. XXXIII, p. 55.

haus,²⁴ having obtained methyl imidazol by the action of ammonia on sugar, point out the relation of this compound to the purin nucleus. Such speculations, devoid of all experimental support, are at present of interest only in pointing out the possible roads to a synthesis of uric acid within the body.

Unmindful of the direct evidence of purin oxidation afforded by the enzyme experiments with tissue extracts and emphasizing the difficulty of obtaining uric acid directly from purins in the laboratory with the intervention of animal factors, Kutscher and Seemann²⁵ have ventured another explanation according to which uric acid is the primary product, formed by such synthetic reactions as have just been detailed. A part is in turn reduced, according to Kutscher and Seemann, to simpler purins which participate in the genesis of nucleins in the body; the excess of synthesized uric acid is then either eliminated or destroyed in the usual manner. On this hypothesis the feeding of purins would give rise to increased uric-acid elimination by sparing the synthetic uric acid from reduction, etc., to form nucleic acid and thus inducing a certain excess of it in the system. Experimental evidence of such reduction changes of uric acid to simpler purins is entirely wanting. The capacity of the organism to oxidize purin bases to uric acid, as evidenced by feeding experiments and trials with tissue extracts, remains as the single indisputable fact advanced beyond the realm of hypothesis.

ENDOGENOUS AND EXOGENOUS PURINS.

On a diet free from nucleoproteids and purins, as well as in starvation, the elimination of uric acid and other purin bases does not cease by any means. Under such conditions some metabolic change like the destruction of tissue nucleoprotein must supply the purin nucleus for the eliminated product.

Burian and Schur²⁶ have designated that fraction of the purin output which is independent of ingested purin groups as endogenous in contrast with the exogenous elimination referable to preformed purin complexes in the intakes. They note that on a purin-free diet consisting of such foods as milk, eggs, cheese, potato, rice, green vegetables, wheat bread, butter and sugar, the endogenous uric-acid output is a rather constant quantity for any individual under fixed conditions of living and is practically independent of the total protein or energy content of the diet. With this the observations of Siven²⁷ are in accord. The constants of endogenous purin output vary considerably for different individuals, however, as is shown by additional studies of my co-workers, especially Rockwood,²⁸ and by Kaufmann and Mohr.²⁹ This conception of the different sources of the uric acid eliminated and the determinable endogenous constancy of the individual has been helpful in the study of purin metabolism in both the laboratory and the clinic. For it has enabled the tolerance, or degree of utilization and elimination of purins to be determined with quantitative precision, by estimation of the exogenous uric acid derived from diets of known composition.

Recent experiments by Folin³⁰ and von Wendt,³¹ as well as unpublished observations of my own,³² indicate that the final word regarding the endogenous purin metabolism has not been spoken. When the total amount of protein metabolism is greatly reduced the endogenous output of uric acid is diminished, though this is not the case within ordinary ranges of diet.

URIC ACID AND MUSCULAR METABOLISM.

Some explanation of these discrepancies may be expected in the near future, especially since Burian³³ has lately identified in the muscle purins, notably hypoxanthin, the source of endogenous purins eliminated. He has found that during activity the purin-content of a surviving muscle is increased; and that in the perfusion of muscular parts the circulating fluid carries away uric acid from the muscle both in rest and during contraction. The effective factors thus are the continual accumulation of purins (hypoxanthin) in the muscles, an enzymatic production of uric acid therefrom by the localized xanthin oxidase of the muscle cells and its continuous removal by the blood current. By work the output of uric acid is temporarily increased, though it becomes equalized again in the course of the usual 24 hour period so that an effect of muscular activity on uric acid elimination measured in the daily output has generally been overlooked.

As a tentative hypothesis the conclusion of Burian may be quoted: "From a quantitative point of view the participation of the metabolism of muscles in the formation of endogenous urinary purins in man is probably large. This is made evident, for example, by the fact that the (hourly) endogenous purin output during a condition of muscle fatigue, i. e., presumably diminished hypoxanthin formation in muscle, is sometimes reduced one-half. Obviously only a very small portion of the endogenous urinary purins is derived from the nucleoproteids of disintegrated cells, whereas a very considerable part arises from muscular metabolism. This mode of origin also well explains the behavior of the 24-hour endogenous urinary purin elimination, namely, that it is constant in a single individual even after marked variations in the food intake, provided that the habits of life are reasonably uniform; whereas in different individuals, especially if their musculature is of unlike development, the output may be quite unlike."³⁴

Herein may lie the explanation of the differences in hourly output of endogenous uric acid in the day time and at night. In the later case, during muscular rest, it is always lower, as shown in the following data by Rockwood from a subject living on a fixed purin-free diet. The constancy of the total daily uric acid output is likewise evident.

THE ELIMINATION OF ENDOGENOUS URIC ACID.

The daily diet consisted of:

| | |
|----------------------|-----------------|
| Milk | 1,350 c.c. |
| "Force" | 35 gms. |
| Cream | 50 gms. |
| Sugar | 20 gms. |
| Oyster crackers | 250 gms. |
| Cheese | 30 gms. |
| Eggs | 90 gms. |
| Apple | 90 gms. |
| Wheat bread | 25 gms. |
| Butter | 15 gms. |
| Estimated fuel value | 2,770 calories. |

24. Knoop and Windhaus: Hofmeister's Beitr. z. Chem. Physiol., 1905, vol. vi, p. 392.

25. Kutscher and Seemann: Centbl. f. Physiol., 1903, vol. xvii, p. 715.

26. Burian and Schur: Pflüger's Arch., 1900, vol. lxxx, p. 269.

27. Siven: Skandinavisches Arch. f. Physiol., 1901, vol. xi, p. 123.

28. Rockwood: Amer. Jour. of Physiol., 1904, vol. xii, p. 38.

29. Kaufmann and Mohr: Deutsches Arch. f. Klin. Med., 1902, vol. lxxiv, pp. 141, 148.

30. Folin: Amer. Jour. of Physiol., 1905, vol. xiii, p. 86.

31. von Wendt: Skandinav. Arch. f. Physiol., 1905, vol. xvii, p. 231.

32. On the output of uric acid in man during prolonged starvation.

33. Burian: Zeitf. f. Physiol. Chemie, 1905, vol. xliii, p. 532.

34. Burian: Loc. cit., pp. 544-545.

COMPOSITION OF THE URINE.

| Day. | Day Urine, per Hour. | | | Night Urine, per Hr. | | | Total Urine. | | |
|------------------|-----------------------|----------------------|--|-----------------------|----------------------|--|-----------------------|----------------------|--|
| | Nitro- gen, gm. | Uric Acid, gm. | P. ₂ O. ₅ , gm. | Nitro- gen, gm. | Uric Acid, gm. | P. ₂ O. ₅ , gm. | Nitro- gen, gm. | Uric Acid, gm. | P. ₂ O. ₅ , gm. |
| 1 . . . | 0.485 | 0.0138 | 0.092 | 0.512 | 0.0106 | 0.090 | 11.87 | 0.303 | 2.20 |
| 2 . . . | 0.572 | 0.0161 | 0.108 | 0.458 | 0.0089 | 0.085 | 12.70 | 0.321 | 2.59 |
| 3 . . . | 0.521 | 0.0135 | 0.109 | 0.532 | 0.0065 | 0.106 | 12.90 | 0.286 | 2.59 |
| 4 . . . | 0.535 | 0.0148 | 0.110 | 0.499 | 0.0104 | 0.089 | 12.48 | 0.311 | 2.42 |
| 5 . . . | 0.543 | 0.0143 | 0.115 | 0.564 | 0.0124 | 0.099 | 13.23 | 0.325 | 2.43 |
| 6 . . . | 0.540 | 0.0145 | 0.111 | 0.530 | 0.0117 | 0.102 | 12.87 | 0.328 | 2.57 |
| 7 . . . | 0.546 | 0.0156 | 0.109 | 0.530 | 0.0113 | 0.098 | 12.86 | 0.336 | 2.52 |
| 8 . . . | 0.537 | 0.0142 | 0.111 | 0.519 | 0.0100 | 0.101 | 12.72 | 0.294 | 2.57 |
| Daily average | 0.535 | 0.0146 | 0.108 | 0.518 | 0.0105 | 0.095 | 12.68 | 0.313 | 2.49 |

SEAT OF URIC ACID FORMATION.

Next in importance to an adequate appreciation of the chemical process by which uric acid originates in metabolism is the recognition of the place where its formation occurs in the organism. Various considerations have been brought to bear on the solution of this question, complicated as it is now known to be by the occurrence of formative and destructive changes simultaneously. Some of the older modes of attacking the problems are readily seen to be fallacious. For example, the fact of the relative abundance of uric acid in particular organs can not properly be explained by any immediate formation of the compound in those tissues, since the result noted may merely be the expression of a temporary deposition in that organ.

The spleen is still regarded in many text-books as an important factor in the production of uric acid, doubtless owing to the original observation by Horbaczewski on the occurrence of this substance in spleen pulp. The observations of Jackson and myself³⁵ on splenectomized animals, and of Gibson and myself³⁶ on a splenectomized man, have shown that the spleen by no means plays a preëminent rôle in purin metabolism, since both exogenous and endogenous uric acid excretion proceeds undiminished in the absence of that organ. In birds the importance of the liver for the synthesis of uric acid has been exhibited beyond question; but it does not assume an equally significant position in mammals, for a considerable excretion of uric acid continues in animals in which the liver is excluded from the circulation by an Eck fistula.

In the classic observations of Hahn, Massen, Nencki and Pawlow³⁷ the output of uric acid was, if anything, found increased after exclusion of the liver—a result corresponding with my own unpublished experiments on various pathologic manifestations of the liver as obtained in the clinic or experimentally induced in animals.³⁸

Experience of this character has long brought the conviction to me that uric acid is formed in various parts of the body—the muscular tissue being prominently suggested—and that the exceptionally large quantities eliminated when the hepatic functions are impaired may be the expression of a deficient destruction of the uric acid formed throughout the body in intermediary metabolism and ordinarily in large part further disintegrated in the liver. The most satisfactory further evidence of the probable unlocalized genesis of uric acid in mammals is afforded by the significant wide-

spread distribution of the enzymes affecting purin metabolism.

Summarizing³⁹ once more the newer observations it appears that especially the spleen, lungs, liver, intestine, muscle and kidney (in some animals at least), are all capable of converting purin bases into uric acid; and that the kidney, muscle and liver can, in turn, further disintegrate the newly formed uric acid—a reaction not accomplished by the spleen or lung. Guanin is first converted into xanthin which is then oxidized to uric acid; while adenin is first transformed into hypoxanthin from which xanthin subsequently arises. An abundant supply of oxygen is essential in every case for the change to uric acid and the catalog of effective or inactive organs is presumably not yet complete. Uric acid formation and destruction by no means always proceed together. The uricolytic or destructive ferment is doubtless principally confined to a few distinct organs, especially the kidney and liver. Differences in the distribution of these active agents unquestionably occur in different species; and the possibility of an elimination, acceleration or retardation of these enzymatic processes by disease or the action of drugs suggests many new problems. At any rate, the newer chemical studies have at length greatly enlarged the horizon of this field of investigation.

RATE OF URIC ACID FORMATION.

The only approach to determining the rate of uric acid formation in man at present consists in observing the rate of elimination—a method the uncertain significance of which has already been pointed out.

Nevertheless, bearing in mind the indefiniteness of the conclusions afforded, it is interesting to note that the curve of endogenous uric acid output from hour to hour tends to attain a level with some slight rise, perhaps, in the morning hours. This has been shown by Dr. E. W. Brown and myself in unpublished experiments, by Pfeil,⁴⁰ by Soetbeer,⁴¹ and by Beebe.⁴²

After purin-containing meals an increased hourly output of uric acid is induced in a comparatively short period, giving rise to a typical curve for the individual. Soetbeer has made the interesting observation that in arthritis urica, the typical curve of elimination after purin-containing meals (meat) may show great irregularity in contrast with that obtained from healthy persons. The typical postprandial rise in uric acid output may, for example, be delayed or missed altogether.

These facts suggest a new method of study applicable to some of the problems of the uric acid diathesis. The influence of drugs like alcohol is brought out in characteristic form by a study of the hourly elimination of uric acid. When no meal is taken even large doses of alcohol fail to produce a marked effect on the hourly

| Hour. | Urine Volume, cc. | Uric Acid, mgm. |
|------------------|-------------------------|--------------------|
| 7-8 | 57 | 30.4 |
| 8-9 | 84 | 33.0 |
| 9-10 | 110 | 31.5 |
| 10-11* | 465 | 28.5 |
| 11-12 | 565 | 27.8 |
| 12-1 | 57 | 29.2 |
| 1-2 | 35 | 28.8 |
| 2-3 | 30 | 24.0 |
| 3-4 | 20 | 20.8 |

* Alcohol taken at 10 a. m.

35. Mendel and Jackson: Amer. Jour. of Physiol., 1900, vol. iv, p. 163.

36. Mendel and Gibson: *Ibid.*, 1904, vol. x, p. xxix.

37. Hahn, Massen, Nencki and Pawlow: Arch. f. Experimentelle Path. u. Pharmac., 1892, vol. xxxii, p. 161; also M. Nencki: "Opera Omnia," vol. II, p. 314.

38. Cf. Mendel and Jackson: *Loc. cit.*, Table IV.

39. In what follows I have referred freely to the recently published résumé of the researches of Schlittenheim: *Zellft. f. Physiol. Chemie.*, 1905, vol. xiv, p. 146.

40. Pfeil: *Zellft. f. Physiol. Chemie.*, 1903, vol. xi, p. 1.

41. Soetbeer: *Ibid.*, p. 25.

42. Beebe: Amer. Jour. of Physiol., 1904, vol. xii, p. 13.

elimination, despite the diuresis which they incite. This is well shown in the following table from Beebe:⁴³

The postprandial rise in uric acid elimination is, however, greatly exaggerated by ingestion of alcohol, especially when a meal rich in purin constituents is taken. The contrast is seen in the following averages compiled from many comparable results by Beebe:⁴⁴

| Control Day. | | Alcohol Day. |
|--------------|--------------------|--------------------|
| Hour. | Uric Acid. mgm. | Uric Acid. mgm. |
| 9 | 18.9 | 19.0 |
| 10 | 15.7 | 16.3 |
| 11 | 17.1 | 16.4 |
| 12* | 16.1 | 14.4 |
| 1 | 12.8 | 16.2 |
| 2 | 15.3 | 19.5 |
| 3 | 19.3 | 25.7 |
| 4 | 23.6 | 28.3 |
| 5 | 24.8 | 34.2 |
| 6 | 25.5 | 28.8 |

Residue of Twenty-four Hours.

| Control Day. | Alcohol Day. |
|------------------------------|------------------------------|
| Uric acid 338 mgm. | Uric acid 442 mgm. |

* Meal hour.

Evidently the purin metabolism is noticeably modified by the alcohol absorbed. Bearing in mind the two-fold action—uric acid formation and destruction—which the tissues are capable of, Beebe has interpreted his results to indicate an inhibition of the destructive (uricolytic) phase. The fragmentary data regarding the rate of uric acid elimination have been briefly referred to in this place in order to indicate some of the newer procedures which are being brought to bear on the production of uric acid in health and disease. They contribute little new to the problems with which we have been more directly concerned.

FUTURE PROBLEMS.

Thus I have attempted to subject to a somewhat critical review the more recent experimental observations which should contribute to a better understanding of the formation of uric acid in the body. Its probable endogenous and exogenous antecedents have been considered and the probable chemical reactions involved in the genesis of uric acid from other purin compounds have been detailed. Attention has also been directed to the peculiar rôle of enzymes in both the formation and destruction of uric acid; the organs and tissues concerned, as well as the factors modifying these metabolic changes, have been considered. After all, a résumé serves its best purpose in enabling the scientist to appreciate the limitations of his methods and to learn the true worth of his data, so that from time to time he may formulate his problems more precisely. He thus starts anew in his quest of the truth with better defined aims and a consequent renewal of enthusiasm.

Research brings forth questions as well as answers. The patient reader will have discovered many gaps in the chain of uric acid metabolism, where the missing links remain to be discovered. We assuredly need to know more about the origin and significance of endogenous uric acid. How and why is it modified in such physiologic states as starvation, in growth and in disease—in conditions where "the metabolic processes that determine the uric acid excretion may be said to be in a relatively unstable equilibrium?" What interpretation

shall be given to variations in the endogenous output; and what is the tolerance of the body for purins in diverse conditions? What determines the balance between formation and destruction of uric acid and how do the different tissues participate in its chemical regulation? Are the differences in the purin metabolism of unlike species explicable by qualitative or quantitative considerations? These and many other inquiries at once present themselves; and the patent limitations of our knowledge stimulate the investigator to renewed efforts and awaken his interest.

TREATMENT OF APPENDICITIS IN ITS VARIOUS STAGES AS IT COMES TO THE SURGEON.*

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So much has been written and spoken on this subject in the last decade that one might suppose that all had been learned as to its management, but the wide diversion of opinion between the surgeon and internist as to its treatment in general, and the different views maintained by surgeons themselves as to the management of the different stages when encountered, would indicate that many questions are as yet to be settled before the happy mean is reached.

STAGES OF THE DISEASE.

For the convenience of discussion I have divided appendicitis into six arbitrary stages, with very liberal lines of demarcation, as follows: First, inceptive stage, first forty-eight hours; second, rapidly progressing stage, third, fourth and fifth days; third, non-progressing or stationary stage; fourth, interval or chronic stage; fifth, the abscess stage; sixth, the diffuse peritonitis stage.

Before taking up the various stages of appendicitis which I have outlined for my own convenience in dealing with the subject, I believe I am warranted in stating that there exists general satisfaction on the part of surgeons in the gradual and growing realization, both on the part of the general practitioner and of the laity, that appendicitis is strictly a surgical disease and demands surgical treatment at all times at properly selected periods of that time.

This surgical dictum, when first enunciated by surgeons some years ago, met with rather positive resistance on the part of the internist, but with the turning on of the light by operative measures and the exemplification of the true pathology of this affection, error, as it always must, has yielded to the truth, until to-day every educated and up-to-date practitioner admits that therapeutics has no place in the cure of this disease.

First: The Inceptive Stage (first forty-eight hours).—All surgeons are convinced and many internists admit that every patient with appendicitis that comes to a capable physician with proper environment within the first forty-eight hours of the disease should have and is entitled to a curative procedure which will secure for him restoration to health with the least risk of life. The not infrequent experience of every surgeon in encountering the most advanced pathology, a perforated and gangrenous appendix, even in the first or second day, argues the danger of throwing away the opportunity of certainty for one of uncertainty and great hazard to life.

43. Beebe: *Loc. cit.*, p. 20.

44. Beebe: *Loc. cit.*, p. 20.

* Read before the Western Surgical and Gynecological Association at Kansas City.

If clinicians could more often observe the pathology at the operating table, in all its intensity, in some of the mild cases, and in other cases of pronounced symptoms see a pathology limited to the appendix alone and with almost a doubt as to its departure from normal, they would grow more tolerant to operative measures and less wedded to therapeutics in the inceptive stage.

The physician or the surgeon who persuades a patient in the inceptive stage to wait for the interval assumes a responsibility wholly unwarranted, for the interval stage by no means comes to all; in some, opportunity has knuckled and, unadmitted, has gone never to return.

Certainly the physician and surgeon have a common interest in saving the life of the patient, and the study by each of the pathology at the operating table must tend to a mutual conclusion as to the proper management of this disease in its various pathologic stages. This common study, we believe, is gradually growing toward, and will eventuate in, a universal professional belief that all patients with appendicitis if possible should be operated on, if seen by the surgeon, during the first thirty-six or forty-eight hours. The failure to make a diagnosis on the part of the practitioner and the refusal of the family and patient to listen to a reasonable demand for operative measures in the inceptive stage are responsible for almost all the factors entering into the mortality of appendicitis.

Second: The Rapidly Progressing Stage (third, fourth or fifth day).—The stand taken by a few surgeons that the appendix should be removed regardless of the stage of involvement is not in harmony with pathologic process known to be present at certain times of the disease. This is the stage in which experience and experiment have demonstrated that operative measures increase rather than lessen the mortality. It is in this stage that Ochsner enunciated a sound surgical principle: lavage and peristaltic rest by rectal feeding. The facts of its misconception and of its misapplication on the part of the medical profession in general by no means disproves the correctness of his theory. The probably enforced admission that this procedure has resulted in greater harm than good, probably increased the mortality of appendicitis in general in its first years of promulgation, by no means argues its nullification in eventually proving a life-saving procedure. The seizure of this treatment by the opponents to the surgical treatment of appendicitis in general in its application to all cases has proved a curse to humanity and a set-back to the advancement of proper surgical treatment of the disease.

That a better understanding and better education will confine its application to the class of cases intended by the author we believe to be a certainty. That the rapid attacks on Ochsner by some surgeons have been actuated by the commercial sting in the misapplication of his theory by the general practitioner and an apparent lessened number of patients for surgical aid rather than the real scientific difference with him is plausible to a competent and unbiased observer. The admitted honesty of Ochsner, the extensiveness of his clinic for a number of years and the verification of his experience by a large number of other surgeons should be convincing evidence of the correctness of his theory, even if the critic has not the fairness to admit or the clinical material necessary to prove it in his own work.

Operation in this stage usually means rapid extension of the sepsis and death; peristaltic rest means a limitation of the lesion and a day most favorable for surgical intervention. That the duration of this rest period may and is often extended too long is the belief of many surgeons.

Not infrequently cases come to us from the general practitioner with the remark, "I put this patient on the Ochsner treatment; he improved for a time and then had a relapse."

There is a time when Nature totters under her burden and a leak takes place in her fortification, and the case extends into the general peritonitis stage unless the surgeon comes to her rescue at the proper time. Experience and good judgment must decide the time limit in these cases. The extreme position taken by Ochsner in the early promulgation of his treatment by waiting two, three or four weeks I believe to be unnecessary, as Nature will have done all the good in her power in from ten to twenty days.

Third: The Non-Progressive or Subsiding Stage.—Not infrequently an appendicular disease comes to the surgeon with all the symptoms and physical evidence of a subsidence. Reason would indicate that Nature in this case had mastered the situation for the time and would lead to a period of safety if judiciously assisted by rest and a guarded diet. Experience has fully convinced the conservative surgeon to keep hands off and to let these cases drift into the interval period. In these cases the disease seldom shows a tendency to relight into active progress unless the quietude is disturbed by injudicious dietetic measures or ignorant therapeutic applications.

Fourth: The Interval Stage.—This is the stage for self-congratulation for the one who reaches it—an unpromised but fortunate entrance on *terra firma* in the march of appendicular inflammation. This is the stage of sanguine hopes, splendid promises, ideal surgery and happy culmination by surgical operation. If the ideal management of appendicitis were possible, this stage would never be reached. If the surgeon could see all the cases in the inceptive stage there would be no interval stage, there would be no abscess stage, there would be no peritonitis stage and comparatively few fatal stages, but until the family physician the world over follows the lead of such men and internists as Billings, Fitz and Biggs, who favor and teach early operations, surgeons will have to continue to battle against the desperate stages with their uncertain termination.

Fifth: The Abscess Stage.—The patency of an abscess in the right side of the abdomen is convincing evidence to patient, friends and family physician that surgical interference is indicative and imperative. It has been proved within the last two years that the only way of elimination of the appendix from the abdomen is by excision, hence the explosion of the old theory that the appendix sloughed and came away with the pus and *débris* from an incised and drained appendicular abscess. Recurrence after simple incision, necessitating reoperation and the invariable presence of the original offending organ, has convinced surgeons that to cure appendicitis the appendix must be removed. Another observation worthy of note is the attachment of the appendix in all cases at the line of original incision.

Radical operators like Deaver and his followers, acting on the established fact that cure means removal, advocated and claimed to practice separation of the adhesions and removal of the offending organ in all cases with a low-rate mortality; this procedure, however, has been received with considerable doubt. Many surgeons following the teachings of Deaver, by reason of a large mortality, have been compelled to abandon this radical procedure and many others have never seen their way clear to follow it, but have been content with the simple drainage. Those more conservative and possibly more conscientious practitioners believe in two safe rather

than one dangerous operation in abscess cases. I believe that in all cases of appendicular abscess patients should be told that the first operation is only a preparatory measure for the removal of the appendix at a period not further distant than from five to eight weeks.

Sixth: Stage of Diffuse Peritonitis.—In the past two years greater advancement has been made in the treatment of patients in this than in any other stage. Prior to this time surgeons in general took a pessimistic view of the possible benefits of operative measures, regarding these cases as beyond hope, no matter what the treatment. We now call these cases diffuse or general peritonitis in contradistinction to those in which the patients are moribund. Operation here is left to the fecrabbler or to ignorant men whose work is a discredit to surgery. The simple application of the natural laws of drainage as advocated by Fowler—that is, keeping the patient in the sitting posture—gave surgeons the cue as to the rational efficacy of operative measures in this particular stage of appendicular disease. Trustworthy reported results of a few surgeons invited trial by surgeons in general, and this gave convincing evidence of the better results that may be attained by more perfected technic in this desperate class of cases. The debatable question here is not operation or non-operation, but the rudeness or tenderness of the aid offered. Shall we simply incise and effectively drain the dependent cavities, or shall we go further and attempt to flush out the offending debris? An investigation of the advocated method shows about an equal division on the part of operators for flushing and non-flushing. In the absence of reliable statistics and confirmation of the greater merits of either method, the individual judgment and experience of each operator must decide whether it is best to foster, to protect and to assist Nature, or by rough fingers to tear away the fibrous exudate and to wash septic material over an unsoiled territory. A limited experience and the careful consideration of the pathologic condition found in this stage leads me to believe that the least manipulation possible means the least mortality.

Medical men, as a rule, believe in the diluting and neutralizing effect of a serous exudate on the toxins of infection and admit that further dilution by salt water may prove beneficial; but why inflict greater trauma to an already wounded peritoneum by flushing when there is an innocent and equally beneficial route of dilution by the application through healthy avenues of absorption? We all realize the circumscribing fraction of a fibrous exudate; why tear down the protecting wall to toxin invasion?

SUMMARY.

I believe, with the mind open for conviction and liable to complete reversal by future advancement, that:

First.—Appendicitis is always a surgical disease.
Second.—Every patient should have and is entitled to operative measures within the first forty-eight hours.
Third.—The rapidly progressing stage is the stage of applicability of the Ochsner treatment, and this offers the lowest mortality.

Fourth.—Cases coming to the surgeon with evidence of gradually subsiding symptoms, should be deferred to a more favorable operative period.

Fifth.—Operation should be urged in every interval or chronic case.

Sixth.—In abscess cases two safe rather than one hazardous operation should be done.

Seventh.—In diffuse peritonitis all dependent cavities should be carefully incised and drained and not flushed, and, secondarily, the offending organ should be removed.

A METHOD FOR THE CORRECTION OF CICATRICAL TALIPES CALCANEUS.*

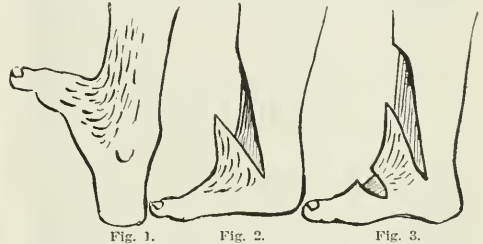
A. F. JONAS, M.D.

OMAHA.

The method for the correction of some forms of old talipes calcaneus is illustrated by the two following cases:

CASE 1.—History.—A. B., aged 20, when 4 years of age had the dorsum of the right foot and the lower third of the anterior aspect of the leg severely scalded, producing a sloughing of the skin from the entire burned area. The resulting wound was a long time in healing, which was accomplished by granulation, ending in a dense mass of cicatricial tissues, which in contracting produced an extreme dorsal flexion. After the lapse of several years two different attempts were made to correct the deformity by making a transverse incision, dividing all the soft structures down to the tibio-tarsal joint. The foot was brought down to its normal position. The separation of the wound margins was so great as to produce a large, gaping defect over the dorsum of the foot. In spite of the attempt made to maintain a corrected position of the foot by means of variously constructed devices, the deformity recurred as soon as the operative defect closed over, which it only could do by a process of granulation and cicatricial contraction.

Examination.—At the time of his admission to the hospital the following condition was noted: The right foot was in extreme dorsal flexion and very moderate varus position. The dorsum pedis was nearly in contact with the anterior aspect of



the leg and was held in this position by a thick, dense mass of scar tissue, which seemed intimately adherent to the tibia and the tarsus and metatarsus of the foot. The heel was drawn down so that the os calcis occupied a vertical position and the superincumbent weight was borne on the end of the bone. The posterior portion of the articular surface of the astragalus could be felt under the tendo Achilles. In fact, the backward pressure of the astragalus was indicated by an elevation, making a visible posterior projection against the tendo Achilles. The foot was rigid in the extreme; dorsal or plantar flexion could be made only to the slightest degree. The phalanges were limp and could neither be voluntarily flexed or extended. The deformity was due entirely to a dense cicatricial mass, involving the skin and all the soft structures and including the periosteum to which it was attached. This scar tissue involved an area beginning at the junction of lower in middle tibial third, surrounding nearly one-half of the leg and extending downward to the middle portion of the metatarsus.

Treatment.—After the usual preparation of the operative field the following procedure was adopted: It was evident that a flap must be constructed to cover at least the greater part of the resulting tissue defect, which seemed unavoidable in severing the constricted structures. A pedicle flap, to be turned or twisted so as to fit over the resulting defect in this avascularized tissue, was out of the question. It was evident that a flap with a broad attachment was necessary. The only one available was a triangular flap, so constructed as to cover the tibia astragaloid joint when it should be opened, as it must be, where the scar tissue reached down to and involved the entire

* Read before the Western Surgical and Gynecological Association at Kansas City.

thickness of the joint capsule. Accordingly an incision was made, beginning at the upper end of the scar tissue and extending obliquely downward and outward to the lower end of the outer malleolus (Fig. 1). Another incision was made, beginning as before, but extending downward and inward to the lower end of the inner malleolus. The skin was now seized at the upper end of the incisions and was dissected, including all the tissues, to the periosteum, downward and below the tibioastragaloid joint, creating a triangular flap. The remaining resisting structures over the joint were divided, and with little difficulty the foot could be forced into its normal position. The triangular flap, which was stiff, projected away from the ankle joint like an elongated slipper flap and could not be pressed against the tibial surface nor the joint (Fig. 2). It having become apparent that our flap would be useless unless it could be pushed upward and against the open tibioastragaloid joint, a transverse incision was made over the middle portion of the metatarsus, beginning over the middle part of the first metatarsal and continuing across the foot to the same point on the fifth metatarsal bone. The integument was now dissected from the bones so that the entire flap could be lifted except by its lateral ends, which made it a double-pedicle flap. The flap could now be easily pushed upward so that it completely covered the tibioastragaloid joint, leaving only an inverted V-shaped defect above and a small elliptical wound below (Fig. 3). The wound was now dressed with an aseptic dressing and fixed on a Volkmann posterior tin splint. Every portion of the flap healed. About ten days later, when the uncovered portions of the wound had become filled with granulations, a transplantation of Thiersch flaps was made, which very soon completed the healing process. The outcome has been a useful foot with no recurrence of the deformity.

The foregoing method, which is simple and not difficult to do nor a new one, was suggested by a similar procedure in a case of exaggerated talipes calcaneus of congenital origin which came under my care some years previously.

CASE 2.—History.—The case was that of a boy, aged 14. The heel was pointed directly downward, the super-imposed weight was borne on the end of the os calcis. The foot was in extreme dorsal flexion and appeared more like an abnormal appendage than a foot. The contracture of the soft parts on the anterior aspect of the leg was extreme. Efforts at manual correction were entirely ineffectual.

Treatment.—It was determined, under general anesthesia, to do a subcutaneous tenotomy on the unyielding tendons. Accordingly, after the usual preliminary preparations, a subcutaneous section was made of the tibialis anticus, the extensor proprius hallucis, the extensor longus digitorum and the peroneus tertius. This seemed to relieve all the resisting structures except the skin. In attempting to correct the malposition the integument at the tibio-dorso-pedal junction would not yield and, wishing to avoid a skin laceration, a triangular flap with its point upward was dissected away from the anterior tibial aspect, and, reaching downward to an imaginary line extending from one malleolar tip to the other, exposing the ankle joint. The foot was now easily brought into its normal position. This covered the joint completely and extended to a considerable distance above it. An inverted V-shaped defect was created along the lines of incision. This defect was covered one week later with thick Thiersch flaps.

The idea of the use of a triangular flap to correct deformities due to cicatricial or atrophic skin is not new. The possibilities of its use have probably not been fully realized. Experience has long ago demonstrated the uselessness of the transverse incision of the contracted skin. Nothing can be expected of such a procedure, except a speedy recurrence of the deformity by the formation of new scar tissue in the resulting gap. If a triangular flap of sufficient length be created that will not only completely cover the affected joint, but extend a considerable distance above it and then cover with thick Thiersch flaps the resulting V-shaped defect,

we may confidently expect a permanent correction of the deformity. The flap should be long enough. Its point should begin no lower down than the junction of its lower and middle third, and I can imagine cases where it may be advisable to begin the incision over the middle of the tibia. The flap must be long enough so that an elastic covering lies over the tibio-tarsal joint.

The fear that such a flap may slough is not borne out in practice. It is true we sever the return circulation in the skin. We were fearful of such a result in our first attempt and again in our second case, which possessed the additional defect of being illy supplied with blood vessels on account of the cicatricial nature of the flap. In neither case did any part of the flap slough. When the flap is elastic and pliable, as it usually is in non-cicatricial skin, the V-shaped incision is sufficient.

When, however, the flap is cicatricial, stiff and unyielding and will not cover the defect without pressure or tension on it, it becomes necessary to make a trans-dorsal incision, as detailed in Case 1, detach it entirely except on each side, so that the circulation may be maintained. The flap will drop of its own weight against the joint. This procedure constitutes the real and only modification and addition to the old triangular flap method.

It is important that all these flaps fall into position of their own weight; pressure or tension defeats the healing process. The base or flap attachment should be broad. While in both cases the base was directed in a distal direction, it would seem, when possible, the base should be in a central direction on account of the more favorable condition for the venous return. When the triangular flap is used for ankle-joint deformities, the base line should always extend from one malleolar tip to another, (1) because all resisting tendons, ligaments and other resisting structures can be easily severed, (2) because there is no tension in any portion of the flap, (3) because the tibio-astragaloid joint can be exposed and, should it be deemed necessary to do an arthrodesis, as is sometimes required in paralytic or recurring deformity, the articular surfaces can be easily removed with a chisel and an ankylosis of the joint can confidently be expected.

Aims and Uses of a Medical Society.—How often do we find that the man whom we thought from the rumors of disgruntled patients, or envy of rival practitioners to be a man of "hoofs and horns," in reality, when we come to meet him personally, is a gentleman, both professionally and socially. The medical society becomes a clearing-house where we not only acquire new medical knowledge, but also a better and higher opinion of our fellow-practitioners. How easy it is to believe evil of those whom we know only by hearsay or reputation, and how highly do we think of those whom we know the best, and how slow are we to believe slander and gossip about those with whom we are well acquainted. Acquaintance engenders knowledge and sympathy. Sympathy reveals community of interest—community of interest fosters organization, and organization brings power and influence, and this brings me to the consideration of another of the uses of a medical society—namely, its relation to and influence on the community. We have a duty to our patients, but we have a duty to the community in which we live, not only as physicians but as citizens. In sanitary matters, in milk supply, in food inspection, in sewerage and water supply, in education, in our public schools, in municipal improvement and adornment, in the immigration problem, in the care of the dependent and defective classes, the medical society should, and in many instances does, take the leading part in guiding and influencing public sentiment.—A. W. Hurd, in *Buffalo Medical Journal*.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XIV.

STOMACHICS.

In this group we shall include a number of agents, many of them used for centuries, with actions scarcely better understood now than they have been in the remote past. They include those agents commonly called bitters and aromatics, terms which refer only to taste, or, to be more accurate in the case of aromatics, to taste and smell, but which are employed as therapeutic terms for want of better, thus showing how little we know of their mode of action. Despite this want of exact knowledge of their pharmacologic action, the accumulated clinical evidence of 2,000 years or more goes to show that they are useful in slight catarrhal conditions and in minor functional disturbances in which there are no serious anatomic changes.

It is possible that their beneficial influence is sometimes in part due to the psychic effect, as they are agreeable to many tastes, and their regular use may encourage the patient—two important factors in digestion.

Most of the experiments that have hitherto been conducted with these agents have been made on animals, and the results have been variable and often contradictory, hence we must depend almost entirely on clinical evidence for guiding us in their uses.

Owing to the great variability of the functions involved and the natural discrepancy in the capability of various observers, most inaccurate conclusions are reached, and, therefore, no attempt can be made to give precise information as to the exact relative merits of one member rather than another in a given condition.

Bidder and Schmidt, in 1852, observed that the sight of food caused the secretion of gastric juice in a fasting dog, and Pawlow, in 1888, proved the existence of specific secretory nerve fibers in the vagus, and that the gastric secretion is stimulated reflexly from the mouth. That the taste of bitter substances excites the flow of saliva is common experience, and they are said to stimulate reflexly the gastric secretion when they are taken in the mouth. It has not been proved that the bitters have any effect on pancreatic secretion in animals, but it is probable that they do stimulate it reflexly in man.

Borissow has recently studied the effects on gastric secretion in the dog of bitter substances taken into the mouth but not into the stomach. He found that the bitter taste caused a marked increase beginning almost immediately, but not lasting long. He therefore advises that the substance, preferably in liquid form, be given only a short time before eating. He maintains that the negative results obtained by Tschelzow were due to the use of excessive amounts of bitter extract which inhibit the digestive action. Bitter substances which pass into the stomach without producing a bitter taste are useless as stomachics.

Bitter substances in the stomach have been found to increase the number of leucocytes in the blood, and, according to Hofmeister, the leucocytes are concerned in the transportation of a part of the digestive proteids into the circulation. The bitters, therefore, should cause a more rapid absorption of the digested proteids. It can not be stated positively whether or not the bitters increase the gastric movements, but it has been suggested that increased functional activity of the gastrointestinal canal may occur from reflex stimulation, due to irritation of certain sensory nerves in the stomach, in a manner analogous to the reflex stimulation of the gastric secretion by the taste or sight of food.

After therapeutic doses of the simple bitters have reached the stomach they can hardly exert any perceptible effect directly on the activity of the gastric juice, and this extremely slight effect, if adverse, would be very much more than counterbalanced by the increased amount of the secretion.

While there are a number of official substances that may be, and are, used as simple bitters or stomachics, it will not be necessary to enumerate more than a few of the more popular to illustrate the variety and the uses of this class of drugs.

GENTIANA.—U. S.—The dried rhizome and roots of *Gentiana lutea*, constitute by far the best known and the most widely used of all simple bitters. This drug is not alone of interest medicinally, but it has also taken an important part in the folklore, traditions and legends of European peoples. It is said to have been introduced into medicine by Gentius, King of Illyria, who first discovered its medicinal virtues.

FLUIDEXTRACTUM GENTIANÆ.—U. S.—This is made with diluted alcohol.

Average dose: 1 c.c. (15 minims).

EXTRACTUM GENTIANÆ.—U. S.—This is an aqueous extract of gentian evaporated to pilular consistence.

Average dose: 0.25 gm. (4 grains).

TINCTURA GENTIANÆ COMPOSITA.—U. S.—This represents 10 per cent. of gentian, 4 per cent. of bitter orange peel and 1 per cent. of cardamon in 60 per cent. alcohol.

Average dose: 4 c.c. (1 fluidram).¹

CALUMBA.—U. S.—The dried root of *Jateorhiza palmata*, was introduced into Europe by the Portuguese in the seventeenth century and has been much employed as a simple bitter since that time, particularly on the continent of Europe.

FLUIDEXTRACTUM CALUMBÆ.—U. S.—This is made with 70 per cent. alcohol.

Average dose: 2 c.c. (30 minims).

TINCTURA CALUMBÆ.—U. S.—This represents 20 per cent. of the crude drug.

Average dose: 4 c.c. (1 fluidram).

QUASSIA.—U. S.—The wood of *Picrasma excelsa*—Jamaica quassia or of *Quassia amara*—Surinam quassia, appears to be more popular in England than in this country. The official preparations are:

FLUIDEXTRACTUM QUASSIÆ.—U. S.—This is made with 33 per cent. alcohol.

Average dose: 0.5 c.c. (8 minims).

EXTRACTUM QUASSIÆ.—U. S.—This is an aqueous extract of quassia, representing ten times its weight of the crude drug.

Average dose: 0.05 gm. (1 grain).

TINCTURA QUASSIÆ.—U. S.—This represents 20 per cent. of quassia in 35 per cent. alcohol.

Average dose: 2 c.c. (30 minims).

Two other drugs which are frequently used by American physicians are *chirata* and *berberis*.

CHIRATA.—U. S.—The dried plant of *Scurreria chirayita* is a comparatively recent addition to European medicine, though it has long been used and held in high esteem by the Hindus. The only official preparation in our Pharmacopeia is:

FLUIDEXTRACTUM CHIRATÆ.—U. S.—This is made with diluted alcohol.

Average dose: 1 c.c. (15 minims).

BERBERIS.—U. S.—(Barberry)—The rhizome and roots of *Berberis aquifolium*.

FLUIDEXTRACTUM BERBERIS.—U. S.—This is made with diluted alcohol.

Average dose: 2 c.c. (30 minims).

Aromatics.

Aromatics contain volatile oils, on which they depend for their flavor and for a slightly irritant action on the mucous membranes. Brandt found that the irritation and the consequent hyperemia of the mucous membrane of the alimentary canal, due to sharp tasting substances, caused increased absorption of certain products of digestion. As the aromatics usually have an agreeable taste, they probably increase gastric secretion by reflex stimulation, but it has not been demon-

1. The compound tincture of gentian is probably the most popular of all stomachics and is widely used either alone or in combination with a mild antacid, such as sodium bicarbonate. A mixture that is largely used, particularly in hospital practice, may be compounded somewhat as follows:

| | | |
|-------------------------------|--------|------|
| R. Tinct. gent. comp. | 3x | 40] |
| Sodii bicarb. | gr. xc | 6] |
| Aque q. s. ad. | ℥iij | 100] |

To be given in doses of 2 or 3 teaspoonfuls, before meals.

Such a prescription, of course, may be varied in innumerable ways, the addition of compound tincture of cardamon will not alone improve its appearance, but will also make it much more acceptable, in that it makes the whole mixture more aromatic. The addition of tincture of capsicum, 0.2 c.c. or 0.3 c.c. (3 to 5 minims) to each dose, makes the mixture sharp and pungent and may be desirable, particularly in cases of alcoholic gastritis.

strated that they increase the amount of hydrochloric acid or of the digestive ferments.

Gottlieb, in experimenting on rabbits with the volatile oil of mustard and with pepper, found an increased pancreatic secretion, both solids and liquids, from irritation of the gastric mucous membrane. He admits the possibility of the absorption of a part of such volatile substances and a consequent direct stimulation of the secretory cells of the pancreas, but he obtained a similar increase of pancreatic secretion by reflex stimulation, using as irritants 0.5 per cent. acid and strong alkalies, which are not nearly so apt to be rapidly absorbed. Gottlieb's results with volatile oil of mustard have been criticized because he used as much as half a drop for a rabbit—a dose which might be termed massive, considering the size or the weight of the animal, but the rabbit's gastrointestinal canal is probably not so easily irritated as is that of man.

In support of the claim that the pancreatic secretion is reflexly stimulated are the results of Bernstein and Heidenhain's experiments on dogs. These observers found that pancreatic secretion begins so soon as food is taken, when reflex stimulation alone could cause it.

All volatile oils have an antiferment action, and the aromatics, therefore, may lessen gastric fermentation.

The slightly irritant effect, with the hyperemia, must be the main factors in their effects on digestion after that of reflex stimulation, for pancreatic secretion has been found to be much more markedly influenced by the dilation of blood vessels and a consequently free circulation than by changes of blood pressure; thus free secretion has been observed after chloral, with dilated vessels and low blood pressure.

In this connection it is to be remembered that nausea, pain in the stomach and other symptoms of functional disturbances of the gastrointestinal canal are often promptly relieved by external application of heat or even by a mustard footbath, which can only act reflexly.

It is easy to understand why pure air and interesting surroundings play such an important rôle in appetite and digestion when we consider how completely those functions are under the control of the reflexes, mere change of location being much less important than the substitution of interesting for monotonous surroundings, and in advising change of scene with outdoor life these details can not be too carefully considered.

Bitters, and more particularly the aromatic bitters, are indicated in loss of appetite when it is not due to grave gastric disturbances. When catarrh of the gastric mucous membrane complicates the condition, an astringent bitter, such as *serpentaria*, *cinicifuga* or *cinchona*, should be used. In the absence of catarrh, indigestion accompanied by insufficient gastric secretion, a simple bitter, such as gentian or calumba, may be used alone, but it is very much more often advisable to combine the simple bitters with aromatics.

The individual taste of the patient should always be considered in the choice of the aromatic. Men often like simple bitters, such as gentian or gentian and orange, a fact attested by the extraordinary popularity a few years ago of a certain bitters, which consisted practically of compound tincture of gentian. Women usually prefer mildly aromatic and not very bitter substances, while children are generally averse to them altogether.

When excess of acidity exists bitter substances will probably increase the trouble. Just as bitters and aromatics produce a greater effect in cases of functional disturbances, so iron is useful in anemia, though it has little influence in health, and it is often found advisable to combine iron with bitters, in which case the astringents are to be avoided because of the chemic reaction, whereby an inky mixture is formed, disagreeable alike to sight and taste—two great objections in this class of remedies.

Many bitters which are not usually classed as astringents contain enough tannin or similarly acting substances to give inky mixtures with ferrie salts; such, for instance, are gentian and *nuxvomica*. Calumba, therefore, is to be given the preference in all cases in which a bitter is to be combined with a soluble salt of iron. Detannated preparations of cinchona and even solutions of the cinchona alkaloids have little to recommend them in preference to calumba as a simple bitter.

The following is an example of a simple bitter combined with iron:

| | | |
|--|---------|-----|
| R. Tinct. calumbæ..... | 3iij | 100 |
| Tinct. ferri chloridi..... | m. lxxv | 5 |
| Aqua q. s. ad..... | 3vi | 200 |
| M. Sig.: A tablespoonful may be given half an hour before meals to men, while a teaspoonful will usually suffice for women. ² | | |

The possible combinations of aromatic bitters are infinite, and, as previously stated, the individual taste is to be considered rather than slavish adherence to any one formula.

Of the official aromatic bitters we may enumerate:

CALAMUS.—U. S.—(Sweet Flag).—The dried rhizome of *Acorus calamus* was known to the ancients and is still used largely in Europe, though not so popular in this country.

FLUIDEXTRACTUM CALAMI.—U. S.—This is made with 75 per cent. alcohol.

Average dose: 1 c.c. (15 minims).

AURANTI AMARI CORTEX.—U. S.—(Bitter Orange Peel).—The dried rind of the unripe fruit of *Citrus vulgaris* has long been used as an aromatic bitters, but is chiefly used as an addition to other bitter drugs, as in the compound tincture of gentian and the compound tincture of cinchona.

FLUIDEXTRACTUM AURANTII AMARI.—U. S.—This is made with 65 per cent. alcohol.

Average dose: 1 c.c. (15 minims).

TINCTURA AURANTII AMARI.—U. S.—This represents 20 per cent. of the crude drug and contains 60 parts of alcohol.

Average dose: 4 c.c. (1 fluidram).

Astringent Bitters.

Drugs that might properly be classed as astringent bitters are numerous, and, therefore, we shall enumerate but a few of the more interesting or more popular.

CINICIFUGA.—U. S.—The dried rhizome and roots of *Cinicifuga racemosa*, a plant that is a native of North America, have been used extensively in some sections of the United States.

FLUIDEXTRACTUM CINICIFUGÆ.—U. S.—This is made with strong alcohol.

Average dose: 1 c.c. (15 minims).

TINCTURA CINICIFUGÆ.—U. S.—This is made with alcohol.

Average dose: 4 c.c. (1 fluidram).

SERPENTARIA.—U. S.—The rhizome and roots of *Aristolochia serpentaria*, popularly known as Virginia snakeroot, have been used in Europe for over 200 years.

FLUIDEXTRACTUM SERPENTARIÆ.—U. S.—This is made with 50 per cent. alcohol.

Average dose: 2 c.c. (30 minims).

TINCTURA SERPENTARIÆ.—U. S.—This represents 20 per cent. of the crude drug and is made with a menstruum containing 65 parts of alcohol.

Average dose: 4 c.c. (1 fluidram).

HYDRASTIS.—U. S.—The rhizome and rootlets of *Hydrastis canadensis*, a perennial plant that is indigenous to Canada and the United States east of the Mississippi River.

FLUIDEXTRACTUM HYDRASTIS.—U. S.—This is made with a menstruum containing 60 parts of alcohol, with glycerin and water, and should contain not less than 2 per cent. of hydrastin.

Average dose: 2 c.c. (30 minims).

TINCTURA HYDRASTIS.—U. S.—This represents 20 per cent. of the crude drug and is made with 65 per cent. alcohol.

Average dose: 4 c.c. (1 fluidram).

CINCHONA.—U. S.—While undoubtedly better known and more extensively used as a bitter stomachic than either of the above, it is unnecessary to recount the origin or the uses of this drug. It is official under two titles: cinchona and cinchona rubra. Of the former we have:

FLUIDEXTRACTUM CINCHONÆ.—U. S.—This is made with 80 per cent. alcohol and contains 4 per cent. of ether-soluble alkaloids from cinchona.

Average dose: 1 c.c. (15 minims).

TINCTURA CINCHONÆ.—U. S.—This represents 20 per cent. of the crude drug and should contain 0.75 per cent. of cinchona alkaloids.

Average dose: 4 c.c. (1 fluidram).

2. While small doses of iron, well diluted, may be given with bitters before meals, if larger doses are given after eating they are borne better than they would be if given on an empty stomach.

The only official preparation of red cinchona is the old and still popular Huxham's tincture of bark.

TINCTURA CINCHONÆ COMPOSITA.—U. S.—This represents 10 per cent. of red cinchona, 8 per cent. of bitter orange peel and 2 per cent. of serpentaria.

Average dose: 4 c.c. (1 fluidram).

For an astringent bitters the fluid extract or the tincture of cinchona, cinicifuga or serpentaria may be combined somewhat as follows:

R. Fl. ext. cinchone
Tinct. gentiane comp. 5ā. 3xii 50

M. Sig.: One teaspoonful to be given before meals.

For women it will be well to increase the amount of aromatics, in which case the compound tincture of cardamon may be substituted for the compound tincture of gentian and the mixture even further diluted with aromatic elixir, if thought desirable, as follows:

R. Fl. ext. cinchonæ 3v 20
Tinct. cardamomi comp.
Elixir aromatici. āā. 3x 40

M. Sig.: One teaspoonful of this mixture, with water, to be given before meals.

NUX VOMICA.—U. S.—The dried ripe seed of *Strychnos nux vomica*, although not containing sufficient tannin to be classed as an astringent bitters, is frequently used as a bitter stomachic. The available preparations are:

FLUIDEXTRACTUM NUCIS VOMICÆ.—U. S.—This contains 1 per cent. of strychnin.

Average dose: 0.05 c.c. (1 minim).

TINCTURA NUCIS VOMICÆ.—U. S.—This contains 2 per cent. of extract of nux vomica and is assayed to contain 0.1 per cent. of strychnin.

Average dose: 0.6 c.c. (10 minims).³

Carminatives.

The origin of this word is in doubt, some authorities maintaining that it comes from *carmen*, a charm, and the term is even now used somewhat loosely for those agents which produce a sense of warmth and well-being and which act as antispasmodics, or which expel gases from the gastrointestinal canal. When given with cathartics they lessen the griping pain of these drugs, and, being antiseptic, they inhibit the formation of gas by fermentation.

According to the accepted definition, a greater or less number of substances can be included in this particular class. The official carminatives afford a very wide range of choice, as they include practically all aromatic bitters, nearly all the aromatic volatile oils, besides such substances as ginger and capsicum, which contain pungent resinous constituents, alcohol, ether, chloroform and many other agents which produce a sense of warmth when swallowed.

Carminatives are among the most ancient of remedies and are indicated in pain in the stomach or bowels when due to simple indigestion or distention by gas, but not when there is inflammation: in the latter case—for instance, in appendicitis or in peritonitis—carminatives are apt to augment the trouble.

Many of the substances are well known as household remedies and, therefore, it will suffice to enumerate only the more important ones.

ZINGIBER.—U. S.—Ginger has been used from time immemorial in eastern Asia, it was well known to the ancient Greeks, and is even now, perhaps, the most popular of all the carminatives. The most widely used of the official preparations is the tincture.

3. A mixture of nux vomica and sodium bicarbonate offers a number of advantages as an efficient and comparatively harmless stomachic. It is made as follows:

R. Tinct. nucis vom. m. lxxv 5
Sodii bicarb. ℞. et 150
Aque dest. q. s. ad 5v 150

Although technically this formula involves an incompatibility practically it is very satisfactory indeed. If the mixture is filtered and allowed to stand for 24 hours before being dispensed it will be found to have developed a very pleasant ethereal odor that adds materially to its effectiveness. The usual dose for adults is one tablespoonful before meals. For a patient with chronic constipation the addition of 1 or 2 c.c. (15 to 30 minims) of the fluid extract of cascara sagrada will be found to be highly satisfactory. One argument in favor of this combination is that it contains little or no alcohol.

TINCTURA ZINGIBERIS.—U. S.—This represents 20 per cent. of the crude drug exhausted with alcohol.

Average dose: 2 c.c. (30 minims).

FLUIDEXTRACTUM ZINGIBERIS.—U. S.—This is an alcoholic extract.

Average dose: 1 c.c. (15 minims).

OLEORESINA ZINGIBERIS.—U. S.—This is now directed to be made with acetone.

Average dose: 0.03 gm. ($\frac{1}{2}$ grain).

Half a teaspoonful, as noted above, of the tincture may be given in a little hot water or with sugar.

The oleoresin is much more active, and a drop of it may be thoroughly well mixed with powdered sugar and from one-eighth to one-fourth of the quantity given to a child, but not to an infant. It may also be added in half-drop doses or less to bulky cathartic pills or mixtures, but in either case it should be well diluted.

THE OFFICIAL MINTS.

Of the large number of aromatic drugs of the mint family, two have attained more than ordinary popularity as carminatives. The revisers of the Pharmacopeia have, indeed, been impartial in their description of these two substances and have treated them absolutely alike, so that from their status as official drugs it would be difficult to say whether peppermint or spearmint should be accorded the preference. It will be safe to assert, however, that peppermint is the more widely used. It is official as:

MENTHA PIPERITA.—U. S.—(Peppermint).—The dried leaves and flowering tops.

Average dose: 4 gm. (1 dram). This is sometimes used in infusion.

OLEUM MENTHÆ PIPERITÆ.—U. S.—This is a volatile oil distilled from the fresh and partly dried leaves and flowering tops of peppermint.

SPIRITUS MENTHÆ PIPERITÆ.—U. S.—This is an alcoholic solution of 10 parts of oil of peppermint filtered through 1 part of bruised peppermint, which imparts to it a distinct greenish color.

Average dose: 2 c.c. (30 minims).

AQUA MENTHÆ PIPERITÆ.—U. S.—This is a saturated aqueous solution of oil of peppermint.

Average dose: 15 c.c. (4 fluidrams).

As noted above, spearmint, *Mentha viridis*, is official under closely corresponding headings and the doses are, of course, the same.

The uses of these official mints are too numerous and too well known to require description in detail. They appear to be particularly useful in gastric fermentation, for which purpose they are usually given in connection with a mild alkali, like sodium bicarbonate, preferably in the well-known mixture of soda mint of the National Formulary or the widely used soda-mint tablets.⁴

Accumulations of gas in the stomach which prove most distressing can often be promptly relieved by administration of 20 grains of sodium bicarbonate or potassium bicarbonate dissolved, preferably in hot water, to which from 10 to 20 drops of spirit of peppermint or spearmint may be added.

ASAFETIDA.

ASAFETIDA.—U. S.—A gum resin obtained from the root of one or more species of *Ferula*, was held in high esteem by the ancient Greek physicians and has been popular with all classes of medical practitioners since that time.

Average dose: 0.25 gm. (4 grains).

As an addition to other carminatives, asafetida in substance was at one time very popular. At present it is but infrequently administered in any other form than suppositories. These are largely used after surgical operations to overcome the atony and partial paralysis that frequently accompanies surgical in-

4. The mistura soda et mentha of the National Formulary consists of:

Sodium bicarbonate grs. lxxv. 5
Aromatic spirit of ammonia m. l. 1
Spearmint water to make 5℥i 100

Mix and filter.

The average dose of this preparation is from 2 to 3 teaspoonfuls. Soda mint tablets as furnished by manufacturers usually consist of 0.3 gm. (5 grains) of sodium bicarbonate with 0.002 (1/30 minims) of oil of peppermint.

interference in the abdomen. The only official preparations containing asafetida in substance are:

PILULÆ ASAFETIDÆ.—U. S.—Each pill contains 0.2 gm. (3 grains) of asafetida and 0.06 gm. (1 grain) of soap.

Average dose: 2 pills.

TINCTURE ASAFETIDÆ.—U. S. This represents 20 per cent. of asafetida in alcohol.

Average dose: 1 c.c. (15 minims).

EMULSION ASAFETIDÆ.—U. S.—This represents 4 per cent. of asafetida in water.

Average dose: 15 c.c. (4 fluidrams).

This preparation is also used extensively, as a clyster, to relieve accumulations of gas in the intestines, after abdominal operations. It was at one time a very popular remedy for colic in infants, but the nauseous taste makes it very disagreeable and the greater number of infantile complaints, in which it might be indicated, are much more effectively treated with a laxative such as castor oil or magnesia, and by the application of heat to the abdomen.

The pernicious habit of using such preparations as Mrs. Winslow's Soothing Syrup, Chamberlain's Colic, Cholera and Diarrhea Remedy, Kopp's Baby Friend² and others which have been exposed in *THE JOURNAL*, can not be too strongly condemned. If an opiate is thought to be necessary, it is much better to advise the nurse or mother to give five drops or more of paregoric, with warnings about the disadvantages and the dangers of its indiscriminate use.

CHLOROFORM AND ETHER.

CHLOROFORMUM.—U. S.—As a carminative, chloroform probably deserves a much more extended use than it now has.

Average dose: 0.3 c.c. (5 minims). This may be given either on sugar, in shaved ice, or in ice-cold water.

SPIRITUS CHLOROFORMI.—U. S.—This contains 6 per cent. of chloroform in alcohol.

Average dose: 2 c.c. (30 minims).

EMULSUM CHLOROFORMI.—U. S.—This contains 4 per cent. of chloroform with a small proportion of expressed oil of almonds, emulsified with tragacanth.

Average dose: 8 c.c. (2 fluidrams).

The spirit of chloroform, diluted with aromatic elixir, or the emulsion of chloroform given alone, promptly affords a sense of warmth in the stomach and will usually give relief in cases of colic and pain.

ETHER.—U. S.—Ether, sulphuric ether of the early pharmacopias has long been in use as a carminative.

Average dose: 1 c.c. (15 minims).

SPIRITUS ÆTHERIS.—U. S.—This contains about 33 per cent. of ether.

Average dose: 4 c.c. (1 fluidram).

SPIRITUS ÆTHERIS COMPOSITUS.—U. S.—The well known and widely used Hoffman's anodyne contains in addition to ether about 2.5 per cent. of ethereal oil.

Average dose: 4 c.c. (1 fluidram).

Compound spirit of ether, in addition to its other uses, has long enjoyed a special reputation in hysteria due to gastric disturbances. It is disagreeable to the taste, however, and probably possesses no advantage over hot whisky and water, or spirit of nitrous ether.

Alcoholic liquids in general are often useful, but their use and their numerous disadvantages can not be advantageously discussed in this connection.

CLOVES AND OTHER AROMATIC SUBSTANCES.

CARYOPHYLLUS.—U. S.—(Cloves.)—The dried flower buds of *Eugenia aromatica*. This remedy appears to have been known to the early Egyptians, but was not known to or used by the later Greeks. In Europe this drug, probably introduced by the Arabians, has been known for many years.

Average dose: 0.25 gm. (4 grains).

OLEUM CARYOPHYLLI.—U. S.—This is a volatile oil distilled from cloves.

Average dose: 0.05 c.c. (1 minim).

The oil of cloves is much more frequently used for its anes-

thetic and caustic effect on exposed nerves in carious teeth than as a carminative, but it may be used for the latter purpose, in which case it is better to add it to spirit of peppermint or some other alcoholic carminative preparation, before diluting with water.

Oil of cinnamon resembles oil of cloves in its carminative effect, and the official tincture of cinnamon is also useful for the same purpose, but is more commonly employed as an adjuvant or flavor for other more active carminative agents, and in diarrhea.

Mustard, pepper and nutmeg are not used medicinally as carminatives, but are much employed as condiments to serve practically the same purpose.

Clinical Notes

IDIOSYNCRASY TO LEAD-WATER AND LAUDANUM.*

ALBERT ENGLES BLACKBURN, M.D.
PHILADELPHIA.

My attention was first called to this condition some six years ago, when a solution composed of Goulard's extract and tincture of opium, of each 1.5 oz. to a quart of water, was ordered to be applied warm to a knee which had been injured by a fall. In twenty-four hours a diffuse erythema with intense itching and burning developed over the area to which the solution was applied. The patient complained more of this than of the injury. The second instance was as follows:

The patient was a corpulent woman who was suffering from a very much inflamed leg of varicose origin, which threatened to break down and form an ulcer. The above solution was applied in the same manner. Again in twenty-four hours, when I next saw her, there was a very pronounced erythema, corresponding to the part to which the solution had been applied. The patient complained of burning and itching. When I saw her on the following day the surface was thickly studded by vesicles and pustules, which infection had probably been introduced by scratching. By this time the poison had been carried to the eyelids, forehead and cheeks, which became swollen to the point of disfigurement, with the itching and burning very intense. The condition lasted about ten days, when it dried and desquamated.

Some three months ago I was called to see the same patient, who was suffering from acute articular rheumatism involving the right wrist. The same solution was ordered and the same phenomena were observed.

In the first instance the druggist was thought to have made a mistake, but this I knew positively was not the case in the last instance. The only solution was idiosyncrasy on the part of the patient. Whether it was caused by the lead-water or the laudanum I do not positively know. Some of those I have spoken to about the subject think it due to the first and others to the second.

Poisoning from the external application of either or both of these must be exceedingly rare, as in a search which included a number of textbooks, the *Index Medicus* and the library of the college I failed to find reference to the subject.

J. C. White, of Boston, in his "Dermatitis Venenata," does not mention it. Morrow on "Drug Eruptions" does not allude to poisoning by lead when applied externally, but does allude to its producing an erythema when taken internally. I quote from him the following:

* Read before the West Philadelphia Branch of County Medical Society.

The external application of the salts of lead in the form of solutions and ointments sometimes produces discoloration of the skin of a brownish or black character.

Foucaud de l'Espagne reports the case of a woman who was ordered a cytrate of lead as an eye wash; under the advice of another physician she was at the same time using sulphur baths for rheumatism. A black discoloration of the eyelids ensued and spread over the cheek bones, which was removed after six days by bathing the parts with infusion of herbs.

The internal administration of the salts of lead may cause an erythematous rash of the skin.

Snow, quoted by Peiffard, reports a case where the body became spotted by petechiæ from the internal use of carbonate of lead.

3726 Baring Street.

ACUTE ACETANILID POISONING.

JOHN BOYD TYRRELL, SC.M., M.D.
SAN FRANCISCO.

C. H. M., male, aged 52, came to this city from his home in Idaho to visit relatives. While here he complained of severe headache most of the time. Not getting relief from ordinary "headache pills" and "headache powders," he went to one of the local drug stores and bought an ounce of acetanilid in powder, bulk, took it to the hotel at which he was stopping, and took what he said was a half teaspoonful. He was relieved of his headache in a short time, and in about two hours went down town to do some shopping. As he was walking down town he noticed that he was weak, but paid no attention to it. He went into a barber shop for a shave, and scared the barber by his "terrible blueness," as the barber expressed it to me afterward. However, the barber shaved him, and felt very much relieved after the man had left the shop.

From the barber shop the patient went to a clothing store, where one of the clerks noticed his condition. In a few minutes he was seen to sway, become extremely cyanotic, and go to the floor in a "dead faint." I was immediately called and found him in deep syncope, extremely cyanotic, and with pulse very feeble and rapid.

I gave him strychnia, digitalin and nitroglycerin in solution; also artificial heat and fresh air, and resuscitated him. In about three minutes he went into another attack of syncope. I again gave him nitroglycerin, gr. 1/100, to which his heart responded, and kept him quiet for several hours, during which time he had several slight attacks of syncope. Patient gradually recovered.

I believe that acetanilid poisoning is more common than is usually believed, due to the laxness of laws regulating the sale of such products, and especially the sale of the nostrums containing this treacherous drug as their principal ingredient.

THE ADAMS-STOKES SYNDROME AND THE BUNDLE OF HIS.

E. O. JELICK, M.D.; C. M. COOPER, M.D.; WILLIAM OPHULS, M.D.
SAN FRANCISCO.

We desire to put on record a case of acute epididymitis, probably gonorrheal in origin, leading to septicemic symptoms, in the course of which the Adams-Stokes syndrome appeared fourteen days before death. The autopsy of the heart demonstrated anemic necrosis of the muscular septum in the region of the bundle of His¹ consequent on a recent thrombosis of its nutrient arteries. Elsewhere the heart muscle was healthy.

1. In this connection see editorial in THE JOURNAL, March 3, 1906, page 658.

New Instrument

A NEW UTERINE DILATOR.

FREDERICK LEAVITT, M.D.
ST. PAUL, MINN.

To open the mouth and neck of the pregnant uterus artificially is difficult under favorable conditions; to do so when the conditions are unfavorable is one of the most trying operations in all surgery.

Under some conditions of the os and cervix, manual dilatation is more or less easily accomplished, but there are other cases in which the fingers are utterly useless. Consider the tissues to be overcome—a fibromuscular canal so firmly closed normally that with all the burdensome pressure of gravity it remains intact, even the force of strong labor causing it to yield only after many hours of exhausting effort. If it takes Nature ten or fifteen hours to effect an opening, what shall be said of a device that will accomplish such a feat within an hour and do it safely?

While the hand is a dilator always at command there are disadvantages accompanying its use. First, it can not be thoroughly sterilized; and, second, it will tire. The frequent alternate use of both hands, with an assistant's hands brought into service in tedious and difficult cases, multiplies the chances of infection. Manual dilatation, therefore, is a truly surgical procedure.

The dilator I have devised is an instrument of four levers and a handle with a large fulcrum on one end and a smaller one on the other. Each blade is notched near its middle, and when placed in position for dilating, the notch fits into a suitable depression on the edge of the fulcrum. The ends of the levers—the blade part—are designed to enter the cavity of the uterus only so far as may be necessary for the work to be accomplished. The gynæcoid end is long and slender, the obstetric end short and broad. During pregnancy, particularly toward its close, there would be no difficulty in introducing the broader ends of the levers, since they may be introduced one at a time. Dilatation may be carried on by compression with the hands alone, with the rubber alone, or, what is very practical, with manual and elastic force, both applied at the same time, the one supplementing the other. If intermittent pressure be desired, opposing blades may be compressed even while the rubber is doing its part of the work.

The instrument is simple in construction. There are no screws or nuts to adjust; there are no hinges or joints to become rusty; no detachable parts to get lost. There are only five pieces to the whole instrument, and they are very plain and easily cleaned. It is self-retaining as soon as the second blade is in position. It is light, yet strong enough to do twice the work demanded of it. It does not obstruct the field of operation. The process of dilatation may be closely watched, the parts sponged, and the presenting part palpated—all between the blades of the instrument. If occasion demands great haste, this also permits the making of multiple incisions into the cervix after the method of Dührssen. The degree of dilatation is approximately that of the hand, i. e., eight and one-half inches in circumference. For all practical purposes this is deemed sufficient.

The manipulation of the device is easy. The patient is brought to the edge of the table and the knees supported in the lithotomy position; the posterior wall of the vagina is depressed with a speculum. The Edebohl speculum is very serviceable, as it is self-retaining when weighted, besides, it dilates the outlet of the parturient canal. The first blade of the dilator is introduced up to the shoulder of the blade (Fig. 1). On this is placed the fulcrum of the handle, the notches fitting into each other (Fig. 2). The second blade is introduced similarly and should be placed opposite the first one. A small rubber band (Fig. 3) is now slipped over the free ends of the levers, in order to keep them in position. The two remaining blades are placed in apposition, the rubber band slipped over each as it is put in place (Fig. 4). When all four blades are properly adjusted (Fig. 5), active dilatation is begun and maintained by winding around the ends of the levers one or

more rubber bands. These are not slipped over the blades as was the smaller one, but are wound around them. To do this dextrously the band is looped over any one of the blades, put on the stretch, and carried around once, twice, thrice, as the



Fig. 1.—Introducing the first blade.

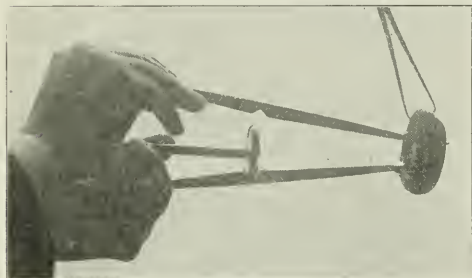


Fig. 2.—The first blade in position, the fulcrum adjusted to it and ready to receive the second blade.



Fig. 3.—Slipping a rubber band over the proximal ends of the levers (calculating from the operator) already in working position.

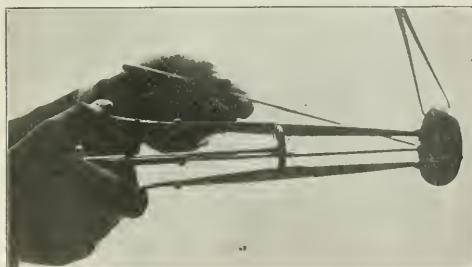


Fig. 4.—Adjusting the fourth and last blade.

case may be, the other end being made fast by slipping it in turn over any one of the blades. Any good rubber band of average size is competent to dilate the os uteri in a reasonably short time—say, thirty to forty-five minutes. As dilatation progresses (Fig. 6) and the ends of the levers are brought together, the band may be loosened and reapplied—take an



Fig. 5.—All the blades in position and held in place by a rubber band. Active dilatation is begun and maintained by means of a rubber band of average size and strength. As dilatation progresses, the band may be released and re-applied, each time fastening the free end a little further around.



Fig. 6.—Showing the amount of dilatation possible when using the larger or obstetric end of the handle.

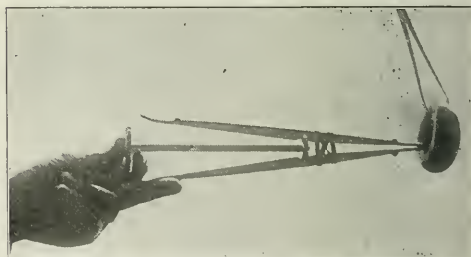


Fig. 7.—The levers in position for dilating the cervix for gynecologic purposes. The rubber band near the fulcrum is simply to hold the blades in place on the handle. After dilatation has progressed sufficiently, the third and fourth blades also may be applied if desired.

extra turn—or another band may be used to supplement the first one (Fig. 7).

The instrument has been used in St. Paul during the past year and a half with success that warrants its recommendation.

125 Lowry Arcade.

New Appliance

A NEW REAGENT OUTFIT FOR CLASSES IN BACTERIOLOGY.

E. GUY HOPKINS, M.D.

Lecturer on Bacteriology and Demonstrator of the Microscopical Laboratories, University College of Medicine, Richmond, Virginia, and Clinical Pathologist of the Virginia Hospital.

RICHMOND, VA.

In order to meet the requirements of economy, simplicity and neatness I have devised the reagent outfit here illustrated for the use of my classes in the microscopic laboratories of the University College of Medicine, Richmond, Va.

This outfit consists of a tube rack and a set of reagent containers (Fig. 1).

The rack consists of a block of wood 2x2x6 inches, bored with 12 holes $1\frac{1}{4}$ inches deep by $\frac{3}{8}$ inch in diameter.

The containers consists of 12 small test tubes, 100 mm. long by 8 mm. inside diameter. These tubes are equipped as follows:



Figure 1.

One is fitted with a cotton mop and contains vaselin for sealing hanging-drop preparations. Three are fitted with ordinary cork stoppers and contain respectively, alcohol, acetic-acid-alcohol, xylol. Eight have pipette points attached to their mouths by means of rubber tubing 35 mm. long, 7 mm. outside diameter and 5 mm. inside diameter; the pipette points are 20 mm. long and are drawn from 6 mm. glass tubing; these tubes contain respectively: distilled water, Gram's solution, 1 per cent. sulphuric acid, Bismarck brown, Loeffler's methylen blue, carbol-fuchsin, Gabbett's solution and anilin-gentian-violet.

Each container is supplied with enough solution for from 15 to 20 coverslip preparations. When in use the container is inverted over the coverslip and the rubber is compressed between the finger and thumb until the desired amount of fluid has been expelled. Relaxation of the rubber then causes re-entrance into the tube of any fluid adherent to the point, so that there is no leakage down the side when the container is replaced in the rack (Fig. 2).

If it is undesirable to leave a container open, even by so small an aperture as the point of the pipette, it may be effec-

tively closed by folding the pipette point back against the side of the test tube and confining it there by a small rubber band, thus making a stopper of the rubber tube.

When the containers become empty they are refilled from stock bottles fitted with siphons. These siphons have long pointed distal limbs, so that in filling a container it is necessary to remove only the pipette point from the rubber tube, which remains attached to the test tube (Fig. 3).



Figure 2.



Figure 3.

After a critical experience with this outfit, covering a period of three months, with a class of 76 students, I find it admirably adapted to the purpose for which it is designed.

The same principle with slight variations has also been applied in preparing outfits for other laboratory classes.

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THE PHYSICIAN AND PSYCHIC TREATMENT.

ALL through the history of medicine it has been recognized that the influence of suggestion plays an important rôle in therapeutics. The physician's assurance with regard to the significance of symptoms and as to the prognosis of the case has always been acknowledged as distinctly curative in tendency. Suggestion, however, has always been considered of secondary importance, and in the organic affections this is especially true. In recent years there have been many developments pointing to the therapeutic influence of the mind over the body whenever suggestion can be used with good effect, especially in regard to so-called functional conditions. Nearly a century ago Mesmer claimed that a number of presumably serious symptoms could be effectively cured by suggestion either in the hypnotic condition or in the waking state. In more recent times the success of mental healing and of Eddyism has called renewed attention to these facts. The frequently announced new remedies that prove after a time to be not so effective as was at first thought, because their novelty has worn off, provides further confirmatory evidence of the therapeutic value of suggestion.

During the past decade a number of contributions to practical therapeutics have been made that recommend the use of suggestion, not as a merely secondary and accessory method of treating certain functional diseases, but deliberately, as an independent therapeutic agent. Two valuable contributions of this kind have recently appeared. In the last volume of "International Clinics,"¹ Dr. Pallet, physician to the Paris hospitals, directs attention to psychotherapy in nervous diseases. He emphasizes the undesirability of using hypnotic suggestions in most of the functional neuroses, since not infrequently it leads to a further weakening of the will and a consequent loss of control over nervous conditions. He has found, however, that ordinary persuasion and rational discussion of symptoms with a patient will often prove sufficient to remove symptoms that have been a source of suffering for a long period. Dr. DuBois,² professor of neuropathology at the University of Berne, Switzerland, has published a book,

which we reviewed recently, in which the proper use of psychic treatment for nervous diseases is systematically considered.

Both these authorities have picked out certain underlying conditions which are causative of nervous symptoms and which they have found amenable to psychic treatment. The most important of these are the fixed ideas and the so-called phobias or fears which often prove sources of so much worry to patients as to bring about extremely annoying and persistent symptoms. Fixed ideas are especially likely to rule over the digestive tract and must be removed before any of the many forms of neurotic dyspepsia can be lastingly improved. Patients become convinced that they can not take certain kinds of food or that beyond a certain quantity their digestive organs are unable to dispose of it properly, and then a whole round of symptoms is likely to develop, because of the lack of nutrition consequent on food limitation. More is accomplished by carefully removing such fixed ideas than by the administration of the most nicely adjusted digestive remedies or the use of the most powerful ferments and enzymes to aid the ordinary ferment processes.

Phobias are especially likely to affect the heart and the cerebral circulation. Two very important sets of symptoms develop as a consequence. The heart palpitations of neurotic patients constitute one of the most important sets of symptoms with which physicians have to deal. Pseudo-angina-pectoris, with positive pain in the precordia and a sense of impending death, occurring in young persons without any signs of arterial degeneration or any symptom of a heart lesion, is the worst of these, but the symptoms may exist in minor degrees down to simple palpitation. Not infrequently the sleep is disturbed as a consequence of the patient's solicitude with regard to the possible consequences of these symptoms, and the result is another element in the vicious circle that gradually undermines the patient's physical condition. Insomnia itself in its varying forms, probably due more to disturbances of cerebral circulation than to any other single cause, comes under the same head and is often rendered persistent by the patient's anxiety as to whether or not he will be able to sleep, and his constant fear lest his loss of sleep should eventually lead to intellectual deterioration and perhaps to insanity.

Any physician of experience knows how difficult it is to treat such patients by any of the ordinary remedial measures. He is aware, also, how often such conditions are improved by the changed state of mind consequent on a series of interviews with a mental healer or the suggestive influence of some one who has insisted with authority that the condition can surely be cured. The deliberate use of persuasive suggestion in these cases is recommended by Ballet and DuBois as the most efficient remedy and one whose influence will persist longer than any other method of treatment. The suggestion

1. International Clinics, Fifteenth Series, vol. IV, 1906.

2. "The Psychic Treatment of Nervous Disorders," by Dr. Paul Dubois, translated and edited by Dr. Smith Ely Jelliffe, and Dr. William A. White, New York. Reviewed in THE JOURNAL, March 10, 1906.

may have to be repeated on a number of occasions, but if the physician can assure his patient that there is no organic lesion of heart or brain, either existent or impending, then improvement is usually a matter of only a short time. There seems to be no doubt that the deliberate use of this method of psychotherapy would add a new and efficient therapeutic agent in the treatment of what are usually very obstinate cases.

Its more general employment by the general practitioner would lessen the number of patients who now tire of the consumption of drugs from which no benefit is derived or from which only temporary relief is obtained, and who eventually find their way at the present time into the hands of quacks and charlatans of various kinds. All physicians employ suggestion to some degree, but there is room for its employment to a much greater extent and in a wider field with benefit to rational medicine, to physicians and to their patients.

DRINKING IN GREAT BRITAIN.

The drink bill of Great Britain is enormous, and drinking among women is reported to be more prevalent than ever, though statistics show that excessive consumption of alcoholic beverages is on the wane. In fact, it would seem that "a wave of sobriety" is at last passing over that country.

Dr. Dawson Burns, in a recent communication to the *London Times*, compares the expenditure on alcoholic liquors for 1905 and 1904, respectively, and finds a decrease of no less than \$24,050,000. This is a substantial decrease, but as the total amount expended on drink still reaches the immense sum of \$820,000,000, more or less, there is ample room for further improvement in this direction. Undoubtedly the drinking habits of the population at large of Great Britain, and especially of town dwellers, are responsible for much of the physical and mental degeneration which are now obvious features in the large centers of population throughout the United Kingdom. Efforts are made to minimize the significance of the conditions of urban life, but it seems to be acknowledged that insanity is on the increase and has been making rapid headway for the past thirty years, and that the race has deteriorated physically and mentally. Such decadence must be attributed, in great part at least, to the tendency of the population to desert the country for the towns, in consequence of which the towns are overcrowded and present in most respects conditions of life inimical to sound health. And of all the agencies prejudicial to health which beset the dwellers in cities, none has so deadly an effect on the body and mind as has strong drink.

It must be reassuring to our British cousins to find that their drink bill is showing a steady and continuous decrease. The total diminution in expenditure on drink in six years has been nearly \$110,000,000, or, allowing for increase of population, in the neighborhood of \$170,-

000,000. The reasons for this comparative and continuous tendency to more temperate habits among the British can not be stated off-hand. Perhaps "hard times" has had much to do with the "wave of sobriety," although it is asserted by many who are in a position to know whereof they speak that the somewhat altered situation is due to a diminished desire for alcoholic beverages. It is to be hoped that the latter explanation is the correct one, and that the people of Great Britain are beginning to recognize the folly of their ways and to appreciate the fact that drink has already sapped, in some degree, the vitality and energy of the race, and that unless the habit be checked matters will go from bad to worse. Dr. Burns calculates that the expenditure for drink per capita in England is nearly \$20, in Scotland slightly more than \$15 and in Ireland even less.

Without seeming to be pharisaical and thanking God that we are not as other men are, we may lay the flattering unction to our souls that as consumers of strong drink we are far behind our European brothers. These remarks, however, must apply to the country as a whole. In many of the cities, so far as the drink question is concerned, conditions approximate those that exist in European cities. Even in the cities we are greatly in advance of Great Britain in all that concerns the hygiene of saloons. The *Lancet* recently published articles dealing with the "public house" as a factor in the spread of disease, in which was pointed out the unsanitary state of affairs as regards the ordinary British saloon, and a contrast was drawn between this class of establishments there and here, which was greatly in favor of the American saloon. The employment of barmaids was also made the subject of a scathing editorial in a later issue of our *London contemporary*.

In this country we are at all times, perhaps, too ready to "pat ourselves on the back" with regard to the superiority of our institutions generally, but when a conservative journal like the *Lancet* acknowledges that in the management of saloons, regarded from a sanitary standpoint, the United States easily leads, we may be allowed to plume ourselves on our progress without laying ourselves open to the charge of being unduly impressed with the manifold advantages of our own land and institutions. The drink problem is undoubtedly the most serious that confronts the inhabitants of Europe, leading, as it does, to the loss of physical and mental vigor. Here the question may be of lesser import, but it is one that can not be lightly regarded.

THE EFFECT OF ROENTGEN RAYS ON THE BLOOD-FORMING ORGANS.

At first there was a tendency to deny or to doubt that the Roentgen ray had any special effect on internal organs or processes, but two practically simultaneous yet independent events showed that this assumption was wholly without foundation. The first of these events

in point of time was the observation of the remarkable effect of Roentgen rays on the course of pseudoleukemia and leukemia (Pusey, Senn, Brown and others), to the treatment of which they were applied in a more or less empirical way. The second event was the demonstration by Heinecke (1903-4) of the elective destructive action of the rays on the lymphoid tissues in the spleen, lymph nodes and bone marrow.

In this country the effect of the Roentgen rays on the blood-forming organs has been studied especially by Warthin,¹ who combines experimental work with the study of material from leukemic patients treated with Roentgen irradiation. His experimental work shows that the rays cause nuclear disintegration and necrosis of lymphoid, myeloid and epithelioid cells in small animals after very short exposures and commonly most marked in the spleen. This destruction may be succeeded by regenerative processes that may pursue a protracted course. Exposures of five hours kill mice, rats, rabbits and guinea-pigs after a few days, the symptoms permitting the interpretation of an intoxication from disintegrative processes in cellular protein material.

The selective effects of the Roentgen rays demonstrated by Heinecke, Warthin and others explain the therapeutic action of the rays in leukemia—it is due to removal of leucocytes from the general circulation, the spleen, etc.—and to delay in the production of new cells. The final result to be obtained by this treatment is still a matter of some uncertainty, and it seems doubtful whether or not the underlying and essential causes can be totally removed. The leukemic state may be resolved into an aleukemic one (Warthin's Case 1) "or it may even assume the type of a sarcoma" (Warthin's Case 3). The destruction of enormous numbers of leucocytes by this treatment is in itself dangerous, because of the formation of neurotoxic and other poisons and because of grave changes in the kidneys, characterized especially by extensive calcification, due to excretion of poisonous substances, as shown well in Brown and Jack's original case (Warthin's Case 1). As put by Warthin, the problem resolves itself into this: "How much of the abnormal leucocyte-forming tissue in the bone marrow, spleen or lymph glands can be destroyed by Roentgen rays before the patient succumbs to the disease or to the treatment"? He suggests that in early cases a cure may be effected.

This situation calls for continued investigation in the hope that some means may be discovered that will render this at first so promising a treatment for so hopeless a disease as leukemia really effective and practicable. Thus the mechanism of x-ray destruction of leucocytes is yet wholly obscure. Investigation by Capps and Smith,² as well as others, shows that there develops a leucotoxic substance in the blood of leukemic patients treated with Roentgen irradiation, whose serum on in-

jection into other patients promptly reduces the number of leucocytes.

The data at hand concerning this substance are yet too few to permit of much speculation concerning its nature and other qualities. Suffice it to say that in the Roentgen ray we have an agent with special action on the leucocytes and blood-forming organs and that the continued study of this effect from various points of view certainly will yield important results as regards the diseases that affect these organs.

THE ARMY MEDICAL REORGANIZATION BILL

The leading editorial in the *Army and Navy Journal* for March 10 comments on the inexplicable action of Senator Hale of Maine in his opposition to Senate bill No. 1539, to increase the efficiency of the medical department of the United States Army, a bill the urgency of which is acknowledged not only by the medical corps, but by the line of the army. THE JOURNAL has repeatedly referred to the necessity of the passage of this bill which deals with a question of vital importance to the entire military service. In the editorial it is stated that "it is an amazing and disheartening thing . . . that a bill now pending in the Senate, which seeks to correct the admitted deficiencies in the Medical Department of the United States Army, should encounter an unreasonable and indefensible opposition at the hands of a distinguished Senator—Mr. Hale of Maine. . . . Ever since the anxious days immediately preceding the outbreak of the Spanish war he has maintained an attitude of obstruction toward nearly every important measure relating to the national defenses."

The bill was passed by the Senate February 5, but Senator Hale, who was not present at the time, later demanded that the bill be reconsidered, and, in conformity with senatorial courtesy, this was done and the bill was restored to the calendar. It came before the Senate again on March 6, where it met a most arbitrary and irrational opposition from Senator Hale, and the measure went over. Without seeking to fathom or to impugn the motives of the Senator for endeavoring to defeat this just and humane measure, it is evident that he is entirely in error in the attitude which he has taken and is engaged in an effort to inflict on the army, and indeed on the whole country, what would be, in the event of war, a stupendous calamity.

The present faulty condition of the medical department of the army has existed for more than five years, notwithstanding continuous efforts for its correction made by high officers of the government who have thoroughly studied the situation. Last year the Senate passed the bill and the House was in favor of it, but for some unknown reason it was blocked by the speaker. This year, in the House, the same bill is now before the Military Committee and a favorable report is anticipated.

1. International Clinics, 1906.

2. Trans. Chicago Path. Soc., 1905, vi, 371.

There are three vital defects in the organization of the medical corps: I. It is numerically inadequate to meet the needs of the army as it is now on a peace basis of 60,000 men. In other words, it lacks one-fourth the officers required during peace. In the event of war the army would be at once expanded to a strength of 100,000 men, when, it is obvious, the medical personnel would be entirely insufficient for the humane work required of it, and the country again would be obliged to witness the tragedy of pest-stricken camps and the ghastly spectacle of multitudes of deaths from preventable diseases. The question with any nation having world relations is not "Will war come?" but "How soon will it come?" When it does come—as come it will—we want a sanitary and medical service that will meet the needs of the time. The work of preparation must be done during peace. When the war cloud looms, it will be too late, and inadequate preparation is almost as bad as none. Inertia and delay to provide those safeguards which experience has so plainly pointed out as necessary to the efficiency of our army savor of barbarism. We have recently seen what a small nation just out of its swaddling clothes can do by enlightened action in the way of mitigating the havoc wrought by disease in war time. Are we who boast of being at the forefront of civilization to be outdone in this work of humanity by the baby of nations?

II. There is a glaring inadequacy of rank. There is less rank relatively in the medical corps to-day than in any other staff corps in the army, although the difficult and exacting duties of the department render such discrimination against it most unjust and prejudicial. To-day there are twenty-seven vacancies in the medical department, in spite of the utmost endeavors of the Surgeon-General to induce a sufficient number of candidates to take the examination. Until an appointment in the medical staff shall hold out greater inducements to the qualified young physician, it will be impossible to fill the medical corps.

III. The contract surgeon system, which Mr. Hale defends, has been an incubus on the medical department for fifty years, and is now without a single redeeming feature to justify its continuance. It has been at best but a makeshift, and under present conditions is archaic and unsatisfactory. It is true that excellent service has been rendered by many of the contract surgeons, but the system is absolutely out of place in the military service.

The bill proposed by the Surgeon-General aims to correct these defects. It is conservative, its provisions have been deeply considered and it barely meets the needs of the army. It has the hearty approval of the President, the Secretary of War, the Secretary of State, the General Staff, the press of the country in general, and the medical profession. Why has it not been passed?

It is most unfortunate that the body possessing the power to remedy the defects spoken of has in it no

specialists in any line affecting health. Perhaps for this reason it is not specially interested in the health of the army, nor is it so competent to judge of the needs of the medical department as it otherwise might be. It would seem, however, that it should be disposed to accept the earnest recommendations of those who are best informed and most capable of judging of those needs. He must, indeed, be obtuse who has not learned what these needs are; and, in the event of failure to grant the relief so earnestly sought and so palpably required, a heavy responsibility will rest on those who have shut their eyes and ears to the facts and who have opposed this beneficent legislation.

DISREPUTABLE ADVERTISERS AND THE MAILS.

When all other sources fail to check disreputable medical advertisers, the U. S. postal laws frequently intervene most efficiently. A postal inspector who had already done good work in Boston was recently ordered by the Postmaster-General to go to New York to investigate a certain class of advertisers in the newspapers of that city. He found many advertisements which showed their intent clearly and that the advertisers were illegally using the United States mails; the counsel of the County Medical Society was able to furnish what amounted in some instances to legal proof of the offense against the United States laws. A large number of the more prominent of these advertisers were called to account, and it is said that many of them will be compelled to leave their present fields of activity and to seek other locations—some of them, perhaps, under pretty rigid physical restrictions. A similar campaign could successfully be carried on in every large city, and it is a pity that the United States laws will not cover a wider field and take in the accomplices who print and publish these advertisements, as well as those that actually use the mails. We can hardly pick up a newspaper published in our large cities that does not contain some advertisements whose criminal intent is easily discerned. The publishers of these papers use the mails, as well as the advertisers, and in some extreme cases have also been reached by the United States laws. Here, as elsewhere, however, a little sinning is tolerated or overlooked.

INTERRUPTION OF CIRCULATION AS A THERAPEUTIC MEASURE.

There are a number of subacute or subchronic hyperplastic processes, especially involving the joints, that do not yield readily to ordinary therapeutic measures. For these Dr. William Ewart¹ has proposed a plan of treatment that, in his hands, has yielded encouraging results. The procedure has the merit of simplicity, requires no special apparatus, and has the added advantage of freedom from danger under proper conditions. The part to be treated must first be rendered anemic; the patient assumes the recumbent posture,

and the part is elevated and squeezed free of blood. An Esmarch tourniquet or a length of rubber tubing of suitable thickness is then applied. The tubing may be tightened around the member in single or in double loop over a slight protecting pad. The tube can either be drawn tight, the ends being held, or it may be coiled over itself to any degree of tightness. The constriction may be maintained for from 30 seconds to three minutes, in accordance with the nature of the conditions present in the individual case, and should be released suddenly at the conclusion of the treatment, the member having previously been lowered to the dependent position. The procedure is not applicable to inflamed or tender nerve trunks, nor to senile and calcified arteries. The application of the ligature is followed by pallor of the part, with emptying of the superficial veins, and a subjective sensation of pressure. Later numbness appears, passing into anesthesia. Pain and tenderness lessen and may even disappear, and there may be a feeling of recovery of some degree of power for active movement. The removal of the ligature is followed, after a varying interval, by a visible, bright blush of the skin and nails and a sense of increased heat. The treatment has been applied to the following conditions: Subacute, subpyrexial synovitis, persistent or relapsing, in young subjects of rheumatic tendency; deforming, soft, puffy, nodular arthritis in women, with chronic, quiet, intra-articular and periarticular effusions and thickenings, and the late massive arthritic thickenings, with articular rigidity or with much stiffness. In view of the results reported and of the apparent harmlessness of the measure, it is entitled to fair and extensive trial. The method of treatment described is suggestive of that proposed and practiced by Bier. From this, however, it differs in the production of a primary anemia followed by a secondary arterial hyperemia. It is not improbable, on the other hand, that the good effects observed after the employment of both forms of procedure are, in reality, due to identical conditions.

THE FLY AND THE TUBERCLE BACILLUS.

The recent stress which has been laid on alimentary infection in tuberculosis should lead to a more careful consideration of the means by which tubercle bacilli may reach the alimentary canal. The recent studies of Lord¹ show that the ubiquitous fly may play an important part in alimentary transmission. The bacilli not only pass the alimentary canal of the fly unchanged, but undergo a marked proliferation there. Fly specks may contain as many as 5,000 bacilli, and, according to Lord's computations, thirty infected flies may deposit within three days from 6,000,000 to 10,000,000 tubercle bacilli. The danger does not seem to be from the liberation of tubercle bacilli in the air, but from the deposition of the fly specks on food. That this can and does occur under certain circumstances was abundantly demonstrated by our experience with typhoid fever during the Spanish-American war. We should bear in mind the possibility of infection by the fly and be much more

strict than we are at present in the disposition of sputum and in the protection of food stuffs, and this refers particularly to the summer months.

WHO PAYS THE BILLS?

A rather expensive and attractive reprint of an article that appeared in a St. Louis drug journal, entitled "A Legislative Scheme of the American Medical Association, a Conspiracy to Establish a Physicians' Trust," is being widely circulated. From the number of copies that have been sent us, with the envelopes in which they were originally mailed, we should imagine that it is being circulated to every newspaper in the country, and, of course, to all medical journals. According to a correspondent in Georgia, it is also being distributed through the mails by certain congressmen under their "franking" privilege. This is certainly an interesting development! The article itself, as will readily be appreciated by those who read it and who know the actual facts, is made up of misrepresentations and specious arguments. The animus that prompted the article is, of course, evident to those who know what the *National Druggist* represents. Evidently, the object in circulating this reprint in the manner above outlined is to create an antagonism toward the medical profession, because of its efforts in favor of the Pure Food Bill and of legislation against frauds in medicines. The question arises, "Who is paying for this?" for it is certainly costing some one considerable money, even if the free use of the mails is secured by some congressmen. Is it to be imagined that this St. Louis drug journal supplies the money? Are the individuals who are sending out their reprints attacking the Association and its work, with their "arguments" for the use of preservatives in foods, etc., paying their own printing and postage bills? Is it not extremely likely that those who are feeling the influence of the Association in its fight against nostrums have something to do with this attempt to disparage the medical profession, and especially the American Medical Association, in the eyes of the public? We have evidence that "patent medicine" men are mailing these pamphlets from Chicago; but they are also being mailed from other cities. At least one nostrum manufacturer, who has made a fortune out of our profession, is directly connected with the scheme.

Medical News

ILLINOIS.

Hospital Dedicated.—The Memorial Methodist Hospital, Mattoon, was formally dedicated and opened to the public, March 15.

Hospital Corps for Third Infantry.—Lieut. Robert C. Bourland, assistant surgeon, Third Infantry, I. N. G., Rockford, is organizing a hospital corps for that regiment.

Hospital for Oak Park.—A hospital to cost \$100,000 is to be erected at the northeast corner of Wisconsin Avenue and Monroe Street, Oak Park, for the Sisters of Misericordia.

Physicians Acquitted.—Drs. Harry B. Vanatta, Lerna, and P. M. Little, Janesville, charged with manslaughter, were acquitted in the Ellingham County Circuit Court, March 22.

St. Francis Hospital to Have New Building.—The increasing demands on St. Francis Hospital, Evanston, have necessitated the erection of a new building, which will have a frontage of 216 feet, will be five stories in height, will be equipped with all modern appliances and will cost \$100,000.

1. Publication of the Mass. Gen. Hospital, 1906, Vol. 1, p. 118.

New Medical Association.—Physicians and dentists of Waukegan and North Chicago met March 12 and organized the Waukegan Medical Association, with the following officers: President, Dr. Edward F. Gavin; vice-president, Dr. Jacob F. Roemer; secretary, Dr. Beatrice Pearce; treasurer, Dr. William S. Bellows, all of Waukegan, and executive committee, Drs. Leon H. Tombaugh and Charles E. Daniels, Waukegan, and Dr. Fuller, North Chicago.

Chicago.

A Narrow Escape.—Firemen and policemen saved the lives of the four children of Dr. William G. Willard, March 17, when his house caught fire and filled with smoke, preventing the escape of the children from their rooms.

Donation to Library.—Dr. Nicholas Senn has presented to the Newberry Library the working library of Professor Meissner on internal medicine and a botanical library of between 200 and 300 volumes, consisting mainly of old and classic works on herbs.

Buys Site for Hospital.—John P. Wilson has bid in, at judicial sale for about \$80,000 practically, the entire block of ground bounded by Fullerton and Lincoln Avenues and Orchard Street. The property is to be the site of the new Maurice Porter Hospital.

Personal.—Dr. Eugene S. Talbot has been unanimously elected an honorary member of the Stomatological Society of Hungary.—Dr. and Mrs. A. F. Henning have returned after nine months in Europe.—Dr. Edward G. Burgman was overcome by gas while searching for a leak under his house, March 22, and is seriously ill.

Tuberculosis Institute Incorporated.—The Chicago Tuberculosis Institute was incorporated March 19 by Dr. Arnold C. Klebs, Dr. Henry B. Favill and Edward B. Bicknell. The organization will rent a building, establish a free dispensary, collect statistics and carry on an active educational campaign. Dr. Frank Billings is president of the institute, and Dr. Henry B. Favill, chairman of the board of trustees.

Fined and Imprisoned.—Dr. N. News Wood of Christian Hospital notoriety was sentenced to imprisonment for ten days in the county jail and to pay a fine of \$100 for contempt of court, March 23. The offense consisted in the violation of an injunction obtained by Dr. John B. Murphy in December, 1904, restraining the defendants from using his name or photograph in their literature. The Christian Hospital was also fined \$250.

Mortality for the Week.—There were 533 deaths reported during the week ended March 24, equivalent to an annual death rate of 13.55 per 1,000. This compares favorably with the death rate of the preceding week, 14.10, and with that of the corresponding week of 1905, which was 15.21. Pneumonia still heads the list with 97 deaths; consumption caused 73 deaths; heart diseases, 52; acute intestinal diseases, 32; nervous diseases, 30; nephritis, 25, and violence including suicide, 21. The death rate for pneumonia is especially low as compared with last year, but there was an increase in the mortality from typhoid fever which it is hoped is only temporary, as the water supply of the city is apparently free from suspicion at present.

LOUISIANA.

At a meeting of the St. James Parish Medical Society, held Dec. 7, 1905, the following resolutions, offered by Dr. B. A. Colomb, were adopted:

We hereby protest against the practice of certain life insurance companies in paying less than five dollars for any medical examination. We see no reason why a smaller fee should be paid for one examination than for another since the work is always the same. We can not further understand why some life insurance companies have been able to maintain a minimum examination fee of five dollars while others have not.

We have noted with surprise that, while the examination fees were being cut down on the plea of economy, all other expenses were enormously increased, although the examining physician is the most important employé of any company, as its success or failure will depend on the quality of his work.

We demand that the Louisiana State Medical Society take some action on this question at its next meeting, and that it be brought before the American Medical Association in proper form.

MARYLAND.

Hospital Incorporation.—The Emergency Hospital of Easton was incorporated March 19. A site will be procured and a building erected in the near future.

Jury Could Not Agree; Case Retried.—In the case of "Dr." J. Tompkins and F. William Norman, a druggist of Hagerstown, charged with being responsible for the death of Miss Jean Maxwell, who died as the result of a criminal operation, the jury disagreed and the defendants were released under bonds of \$10,000. The retrial was to be held March 20.

Want New Hospital.—A delegation from Somerset County appeared before the finance and ways and means committees of the legislature, March 13, asking for an appropriation of \$10,000 to build a general and marine hospital at Crisfield and \$2,500 a year for its maintenance.

Would Tax Professional Men.—Delegate Luckey of Frederick County has introduced a bill into the legislature authorizing the mayor and aldermen of Frederick to tax practitioners of law, medicine, surgery, dentistry and veterinary surgery in that city, and to impose a license tax on all lawyers, physicians, surgeons, dentists and veterinary surgeons in Frederick, and to require all such persons practicing in Frederick to procure a license.

Legislative Doings.—The bill amending the medical practice act, which was introduced into the house of delegates early in the session, was unfavorably reported by the hygienic committee, March 22. A delegation of Baltimore physicians appeared before the committee against it on that day. The amendment was designed to let in without examination all those practicing medicine up to June, 1906.—It is said the joint committee of the two houses of the legislature have prepared their report of appropriations and the same is published, from which it appears that the Johns Hopkins Hospital has been cut out entirely. The Johns Hopkins University receives \$50,000, and the University of Maryland (for University Hospital), \$60,000.—The governor has signed the bill passed by the legislature relating to vital statistics which has been mentioned in THE JOURNAL.

Baltimore.

Respiratory Diseases.—Pneumonia continues to lead in the causes of mortality, 39 deaths being attributed to it last week. Other similar diseases causing mortality were: Influenza, 7; bronchitis, 5, and whooping cough, 2.

Lectures.—Dr. Joseph Giehrer of the tuberculosis commission, lectured on tuberculosis at the Relay public school, and talks on the same subject were made at the same time by Drs. William Royal Stokes and William R. Eareckson.—Dr. Hiram Woods delivered a lecture by request before the Davis Medical Society of Jefferson Medical College on "Ophthalmia Neonatorum."

Personal.—Dr. Thomas Shearer will spend the summer in Europe.—Dr. Eugene Lee Crutchfield, who recently was operated on at St. Joseph's Hospital, is now convalescent.—Drs. John W. Chambers and Thomas S. Latimer have both been ill, but are reported as improving.—Dr. George Heller was thrown out of his carriage in a runaway, March 24, and badly lacerated about the head and face.—Dr. John A. Tompkins has been appointed resident physician at Warm Springs, Va.

MASSACHUSETTS.

Communicable Diseases.—There were reported to the State Board of Health in February, 411 cases of scarlet fever, 531 cases of diphtheria, 3,018 cases of measles, 80 cases of typhoid fever, and 19 cases of cerebrospinal meningitis.

Nervous Derangements.—Dr. James Jackson Putnam, professor of neurology at Harvard University Medical School, has attracted very large audiences to the series of popular lectures on "Certain Prevalent Nervous Derangements and the Outlook for Their Prevention," which he has been giving at the Lowell Institute.

Hospital for Incurable Consumptives.—In supporting an appeal for an appropriation of \$150,000 to establish a hospital for incurable consumptives, ex-Representative Gogins offered to give the state a site of 53 acres in Walpole, about 20 miles from Boston. There are said to be 14,000 incurable tuberculous patients in Massachusetts.

Impure Food Convictions.—The State Board of Health continues to push adulteration investigations and secured in January, 25 convictions for the sale of impure milk, butter, lard, gluten, maple syrup, catsup, hamburger steak, lamb's tongues, sausages, malt liquors, early chlorata, cora flava, extractum glycyrrhizæ, extractum zinciferis fluidum, oleum olive, spiritus camphore and tinctura iodi. Three hundred and thirty-seven dairies were inspected, in 104 of which no fault was found.

No Medical Legislation.—There seems little likelihood of any important medical legislation by Massachusetts this year. The committees have reported against osteopathic registration, the restriction of the practice of medicine and even the definition of what shall constitute "a practitioner of medicine," asked for by the State Board of Registration. Antivivisection, however, has received a quietus for another year. The petition for protection of articles of food from contamination meets with little favor.

MINNESOTA.

Abortionist Sentenced.—Dr. Theron H. Bly, Minneapolis, has been sentenced to imprisonment for three and one-half years in the state penitentiary for performing a criminal operation.

Hospital Burned.—The Bray Hospital, Biwabik, was totally destroyed by fire, February 25, the inmates and patients narrowly escaping with their lives. The loss is estimated at \$15,000, with insurance of \$6,000.

Hospital Notes.—A contract has been let for the construction of the Evangelical Lutheran Hospital at Mankato. The building is to cost about \$35,000.—A sanitarium is to be erected at Mounds Park, Dayton's Bluffs, St. Paul, to cost about \$76,000.—The Warren Hospital has been completed and is now in active operation.

Ask for Malchow's Pardon.—The medical men of Hennepin County and the faculty of Hamline University are taking up the cause of Prof. C. M. Malchow, sentenced to imprisonment for a year for violation of the United States law by sending an obscene book through the mails, and within a few days a petition will be presented to the President, asking that Dr. Malchow be pardoned.

Verdict Against Physician Set Aside.—In the case of Anna Moore against Dr. Cornelius Williams, St. Paul, for \$20,000 damages for an operation alleged to have been performed on the right ear of the plaintiff when the left ear was the one affected, in which the jury found a verdict for the plaintiff of \$14,322.50, and at a second trial a verdict for \$3,500, the district court has set aside the verdict and has ordered judgment entered in favor of the defendant.

Personal.—Dr. Winfield S. Laton, Minneapolis, has sailed from Honolulu for China.—Dr. Frederick A. Dunsmoor and daughters, Minneapolis, have sailed from Liverpool on the *Carmania*.—Dr. Henry C. Stuhr and wife, Argyle, sailed for Europe, March 15.—Dr. Harry E. Burdette, St. Paul, was picked up on the street, February 15, and is seriously ill.—Dr. Frederick E. Walker, Worthington, has gone to Hot Springs, S. D., where he will take charge of the surgical department of the Sisters' Hospital.

Banquets.—Dr. Burton J. Merrill, Stillwater, gave a banquet to the Washington County Medical Association, March 13, at which a number of physicians from St. Paul and Minneapolis were present. Dr. Thomas C. Clark officiated as toastmaster.—Dr. John Charles Adams, Lake City, was tendered a banquet, March 10, by the Wabasha County Medical Society, of which he had been a member for many years, on the occasion of his seventy-fifth birthday. Dr. William F. Wilson officiated as toastmaster, and in behalf of the association Dr. Emery H. Bailey presented to Dr. Adams a gold-headed cane suitably inscribed.

MISSISSIPPI.

Personal.—Dr. Samuel A. Gassaway, New Albany, is seriously ill with pneumonia.—Dr. William R. McKinley, Columbus, has resigned as a member of the State Board of Health and Dr. Robert S. Curry, Columbus, has been appointed to the position.

State Laboratory Needed.—A bill has been introduced in the lower house authorizing the establishment of a pathologic and chemical laboratory for the State Board of Health, appropriating \$2,500 for its establishment and providing for its self-sustenance by a fixed fee table.

Dr. Hunter Fined.—Dr. John F. Hunter, Jackson, was fined \$200 January 26, at New Albany, for contempt of court, the offense of which he was adjudged guilty being his non-appearance as a witness against Dr. R. A. Holcombe, Hickory Flat, who was indicted for practicing medicine without a license.

Cost of Yellow Fever.—Dr. John F. Hunter, Jackson, secretary of the State Board of Health, has submitted a supplementary report to the legislature on the yellow fever of last summer and the expense of the fight to control it. The disease made its appearance in 15 different localities and there were 837 cases, with 61 deaths. The total expense incurred on this account was \$43,220.28.

Uniform Quarantine Recommended.—The State Board of Health in a supplementary report to the legislature regarding the yellow-fever epidemic of last year, advises a uniform quarantine system for the entire state. It recommends that a sufficient appropriation be made by the legislature to the State Board of Health to provide for carrying out such a system. It also provides a heavy penalty against practitioners in the state who willfully fail to report contagious and infectious

diseases to the State Board of Health. It requests also the establishment of a bureau of vital and mortuary statistics and that the secretary of the State Board of Health should be paid a salary sufficient to enable him to devote his entire time to the health interests of the state.

Warren County Meeting.—At a recent meeting of the Warren County Medical Society the following officers were elected: President, Dr. John A. K. Birchett; vice-president, Dr. John P. O'Leary; secretary, Dr. Sydney W. Johnston; treasurer, Dr. B. I. Hicks; censor, Dr. Hollie B. Wilson, and delegate to the state association, Dr. Hugh H. Haralson, all of Vicksburg. The society adopted the following resolutions:

Resolved, That it is the sense of the Warren County Medical Society that the legislature of the state of Mississippi should pass a law requiring every proprietary or patent medicine or food for the sick offered for sale in the state of Mississippi to have its formula printed in plain English on its label, and where any drug usually considered poisonous enters into the formula, then the word *POISON* in prominent letters also be inscribed thereon. It is further

Resolved, That each member of this society should make it his business to urge our representatives in the legislature to do all in their power to have such a law passed.

WHEREAS, The Public Health and Marine-Hospital Service saw fit to station Dr. G. M. Guteras in charge of the yellow fever epidemic at Vicksburg; and

WHEREAS, Dr. Guteras so ably and successfully controlled the situation by his high executive and professional ability, demonstrating so conclusively that he was eminently fitted to fill this position; therefore, be it

Resolved: 1. That we, the members of the Warren County Medical Association, tender our thanks to the president of the United States and to Dr. Wyman, surgeon-general, U. S. A., for so considering the interests of the people of Vicksburg by sending to us Dr. Guteras; and 2. That we extend our thanks to Dr. Guteras for his generous treatment of the members of this association and for his faithful services; and 3. That the secretary be instructed to mail a copy of these resolutions to President Roosevelt, Dr. Wyman, Dr. Guteras, and that the same be published in the *Mississippi State Medical Journal*, *The Journal of the American Medical Association*, and the local newspapers.

MONTANA.

Laboratory Installed.—A bacteriologic laboratory has been installed in St. Ann's Hospital, Anaconda, which will be at the service of the physicians of the city.

January Deaths.—Dr. Thomas D. Tuttle, Helena, secretary of the State Board of Health, reports that during January there were 266 deaths in the state, equivalent to an annual death rate of less than 9 per 1,000.

Declared to be Murray's Property.—In the suit of Dr. Isadore D. Freund against Dr. Thomas J. Murray, both of Butte, in which the plaintiff claimed that he had certain rights in the business of the Murray Hospital in which he was a partner for twelve years, the restraining order was denied and the petition for an order to show cause was dismissed, March 9.

Society Election.—The Silver Bow County Medical Society held its annual meeting in Butte, March 15, and elected the following officers: Dr. R. C. Monahan, president; Dr. Frederick W. McCrimmon, vice-president; Dr. Grace W. Cahoon, secretary; Dr. Creswell T. Pigot, treasurer; Drs. John Donovan, Thomas J. Sullivan, E. F. Maginn, John W. Scanland and R. C. Monahan, trustees, and Dr. Donald Campbell, delegate to the state association, all of Butte. The society gave a banquet at the Thornton House, Butte, March 7, in honor of Dr. Robert L. Gillespie, formerly of Butte, but now of Portland, Ore.

NEW JERSEY.

Camden Health Report.—The report of the Camden board of health for February shows that only 28 cases of contagious disease were reported, as follows: Scarlet fever, 14; diphtheria, 6; typhoid fever 5, and tuberculosis, 3.

New Seashore Hospital at Atlantic City.—The board of governors of the Atlantic City Hospital announced, March 19, that a new hospital building is soon to be erected at a cost of \$100,000. Subscriptions amounting to \$50,000 have already been made.

Train and Ferryboat Fumigated.—The Camden board of health, having been notified by the officials of the Atlantic City Railroad, March 20, that a train at Kaighn's Point terminal had on board a child ill with diphtheria, the train was immediately placed on a side track, and the train and ferryboat fumigated.

Personal.—Dr. Charles C. Phillips, Deerfield, who has practiced medicine in that place for 52 years, has retired and will remove to Pitman.—Dr. Harris Underwood, Woodbury, has been appointed to the house staff of Cooper Hospital, Camden.—Dr. O. A. Clark, Long Branch City, was chosen president of the Baltimore Medical Alumni Association.—Dr. James

Hoffman has been appointed health commissioner of Jersey City, vice Dr. Gordon K. Dickinson, resigned.—Drs. Samuel E. Ewing, Leesburg, and George Spence, Vineland, are ill with diphtheria.

Oppose Osteopathic Bill.—The West Jersey Homeopathic Medical Society, at its regular quarterly meeting held in Camden, February 21, discussed the proposed osteopathic bill which is to come up before the present session of the legislature. The society had already previously condemned the passage of the bill. It was the consensus of opinion of the society that if osteopaths practice in the state they should comply with the requirements now in force, viz., a certain standard of preliminary education, a four years' course in a medical college, and examination in the fundamental sciences of medicine. The members all pledged their influence to uphold the present standard of requirements, which though high, treats all applicants alike regardless of "ism" or "pathy."

NEW YORK.

Smallpox Scare.—It is reported that the smallpox situation is serious in Putnam. Many persons have been exposed.

Farm for Tuberculosis Plant.—Dr. Darlington, president of the New York board of health, has purchased a large farm at Otisville, Orange County, near the tract of land which New York City originally purchased for the establishment of a sanitarium for tuberculous patients.

Water Supply Bill Passed.—The bill permitting New York City to go into Ulster County for water has been passed. It permits the payment of direct and indirect damages to property owners as well as to mill hands who lose their work by reason of factories having to shut down.

Pollution of New York Bay.—Representatives from New York City recently held a conference with Governor Higgins to urge him to take a vigorous stand against the pollution of the waters of New York Bay by sewage deposits from New York and New Jersey. The report of Dr. Daniel Lewis, state commissioner of health, which was made several years ago, was reviewed and it was urged that a bill providing for the further investigation of this matter be passed at the present session of the legislature.

The Labeling of Colored Foods.—Attorney-General Mayer, in construing the food law, has rendered the opinion that where goods are artificially colored they must be so labeled that the constituents and character of all preservatives are clearly set forth. He holds that compounds not injurious to health may be sold under their own names, provided that they are not displayed, advertised or sold in such a manner as to deceive the public. He calls attention to the fact that the statute prohibits imitation and substitution, and also prohibits mixing and coloring substances in such a way as to conceal inferiority.

New York City.

More Spitters Caught.—Twelve spitters were arrested by a sanitary squad in Brooklyn, and each was compelled to pay a fine of \$1.

Hospital for Westchester.—As a result of a meeting held March 6 in the interest of a hospital for northern Westchester \$4,000 has already been pledged. When \$12,500 has been raised the hospital will be begun.

Jury Censures Hospital.—A coroner's jury under direction of Coroner Harburg has brought a verdict censuring the authorities of Fordham Hospital for removing a patient who was in no condition to be moved to Bellevue Hospital. The coroner declared that he was going to put a stop to the practice of making a dumping ground of Bellevue.

Dormitory for City Hospital.—Plans have been filed for a new three-story dormitory for the nurses of the City Hospital on Blackwell's Island. The building will cost \$42,000. Plans were also filed for the enlargement of the male dormitory of the city workhouse on Randall's Island by the addition of a three-story annex at a cost of \$22,000.

Garbage Disposal.—The Brooklyn Rapid Transit Company has reclaimed 200 acres of waste land in the last ten months by filling with incinerated garbage. Incinerators, in addition to burning the material put into them, create a large amount of steam power which can be utilized with profit. This company runs and heats its car shops at East New York with steam from one of its incinerators. It will soon run dynamos with steam generated at another plant.

Patent-Medicine Evils.—Fifteen hundred members of the West Side Branch of the Young Men's Christian Association adopted resolutions, after hearing Norman Hargood of *Collier's Weekly* talk on the evils of patent medicines, petitioning the

senate and assembly to pass the bill known as the Stevens-Wainwright bill for the proper labeling of medicinal preparations containing alcohol or narcotic or other potent drugs so as to show the presence and percentage of such ingredients.

Physicians Must Pay Physicians.—The suit of Dr. Thomas E. Satterthwaite to recover from the estate of the late Dr. Egbert Guernsey \$450 for professional services was tried on March 23 before Justice McCarthy and a jury in the City Court. The jury returned a verdict for the plaintiff for the full amount. The right of one physician to charge another was discussed, and the chief point brought out by the testimony of a number of physicians was that specialists consider it right, and that it is customary to charge other members of the profession.

"Magic Boot" Man Held.—A manufacturer of "magic boots" for cripples, Matthew Hilgert, was held on trial for grand larceny on March 18. Hilgert's special manager was held for practicing medicine without a license. The defendants were arrested at the instance of the County Medical Society. At the hearing the court room was lined with cripples who had appeared to testify that they had paid prices ranging as high as \$1,500 for a pair of magic boots. Some of the cripples declared that their cases had become hopeless since using the shoes. Hilgert was held in \$1,000 bail and Whitehouse in \$500.

A New Milk Ordinance.—In order to prevent milk from spoiling, preservatives of various kinds have been employed with increasing frequency. Sometimes the milk has been sterilized, and some large dealers have taken it on themselves to pasteurize their milk. The health department wishes to be sure that the milk comes into the city absolutely pure and sweet, and as many dealers are installing pasteurizing plants the following ordinance has been submitted: "No milk which has been heated, pasteurized, sterilized or subjected to heat in any manner, with the purpose of preservation, shall be received, prepared, held or kept for sale or delivered in the city of New York, unless it bears a label stating plainly the process to which the milk has been subjected."

Try to Find Work for the Handicapped.—At the monthly conference of local charity workers, held under the auspices of the Charity Organization Society, the topic discussed was how to find employment for the physically and socially handicapped so as to render them self-supporting. Dr. Theodore C. Janeway told of the large number of patients who, when discharged from the hospitals, would live many years if they could only change their employment and secure lighter work. There were many deaths among laboring men due to diseases of the heart, but it was almost impossible to get these people to change their work. A large number of discharged tuberculosis patients relapsed because they insisted on returning to their old environments and employments. These persons should be sent to the country to work.

Subway Conditions.—Trials have been made with the vacuum cleaning process in the subway, and this process seemed to remove the greasy dirt easily and quickly from the girders as well as from the tiling and woodwork. It has not been decided as yet whether this method of cleaning will be adopted or not. Dr. George A. Soner reported the results of his investigations of subway conditions during the past six months to the Academy of Medicine on March 15. From a large number of analyses he concluded that the air was not deficient in oxygen, differed very little from the air of the street in the quantity of carbon dioxide and contained only about one-half as many bacteria as the air of the streets. Some of the unpleasant odors were due to oils used on machinery, disinfectants used in the toilets and the slate used in the roadbed, which emits a peculiar odor when wet. He considered that the only menace to health was the lack of proper care in regard to cleanliness of the stations, toilets, roadbeds near the stations, etc. He recommended certain regulations as to methods of cleaning and a rigid enforcement of the law regarding sniffling. The dangers were only those due to overcrowding in other localities.

OKLAHOMA.

Destroyed by Fire.—The house of Dr. John E. Standifer, Chevenne, was entirely destroyed by fire, February 27. The loss was \$2,200, with \$1,700 insurance.

Smallpox.—Five cases of smallpox are reported near Cement, Caddo County, and three cases at Keebi. Several district schools have been closed and quarantine is being rigidly enforced.

Sanitarium Report.—The report of the Oklahoma Sanitarium for the Insane for the month of February showed 489 patients at the institution, an increase of about 20 over the previous month.

Fined for Operating Hospital in City.—Dr. W. M. Turner, Lawton, was recently arrested for maintaining a hospital within the residence portion of the city for private gain, and fined \$25 and costs.

Personal.—Dr. John Threadgill, Oklahoma City, has been appointed a member of the board of regents of the territorial normal schools.—Dr. J. K. Julian, Covington, has been appointed coroner of Garfield County, vice Dr. John J. Barber, Hunter, resigned.

New Hospitals.—Dr. Joseph B. Rolater has opened a new private hospital with accommodation for about 25 patients at Oklahoma City.—Lawton Sanitarium has been incorporated with a capital of \$10,000 by Drs. Charles S. Meridith, James L. Lewis, W. M. Turner, David A. Myers, Lewis T. Gooch, Edwin D. Meeker and Alexander N. Campbell.

Medical Societies.—The Kingfisher County Medical Society at its annual meeting elected Dr. Joseph A. Overstreet, Kingfisher, president; Dr. Charles O. Gose, Hennessey, vice-president, and Dr. Charles W. Fisk, Kingfisher, secretary and treasurer.—Southwestern Oklahoma Medical Society was organized in Hobart recently by physicians of Greer, Washita, Custer and Kiowa counties. The following officers were elected: Dr. W. L. York, Hobart, president; Dr. Alfred H. Bungardt, Cordell, secretary-treasurer; Drs. A. W. Holland, Hobart, and Walter E. Hempstead, Arapahoe, vice-presidents; and Drs. T. J. Dodson, Mangum; W. J. Curley, Cordell; W. W. Miller, Gotebo; William Tidball, Barton; Walter E. Hempstead, Arapahoe, and James M. Bonham, Hobart, censors.

OREGON.

New Building Completed.—The new building for the medical department of the Willamette University, Salem, is now practically completed and ready for occupancy.

Law Is Mandatory.—The attorney-general has decided that the law requiring each county to establish a county board of health and to appoint a physician as secretary of the board, is mandatory.

Non-payment of Occupation Taxes.—Warrants for the arrest of nearly 100 physicians and lawyers, who, it is alleged, have failed to pay the occupation tax, were issued in Portland, February 15.

Insane from Drugs.—Dr. Donald C. Lazier, Condon, has been adjudged insane and committed to the Oregon State Insane Asylum, Salem. His case is one of mental aberration due to the use of opium and cocaine.

Personal.—Dr. Charles J. Smith, Pendleton, has been elected president; Dr. Edward A. Pierce, Salem, vice-president, and Dr. Robert C. Yennev, Portland, secretary, of the State Board of Health.—Dr. James P. Wallace, Albany, has been elected mayor of the city.—Dr. Eugene Du Gas, Roseburg, has been forced temporarily to suspend practice on account of ill health.

New Hospitals.—New Providence Hospital, West Roseburg, is now under construction and will be completed during the year.—A new Catholic hospital is to be established in Albany in the residence of a former priest at that place, to be conducted by the Sisters of Mercy.—A new general hospital has been opened at Grant's Pass, with accommodations for 16 patients.

PENNSYLVANIA.

Disastrous Fire.—The house of Dr. Lucius A. Warren, Lancaster, was destroyed by fire March 13, the family narrowly escaping with their lives. The loss is total, as no insurance was carried.

Sent to the Penitentiary.—"Dr." Edwin Hooper was sentenced, March 24, to 15 months in the penitentiary after two convictions for conspiracy to perform a criminal operation on a young woman of Johnstown, who died four years ago as a result of the operation.

Anniversaries.—The Newcastle Medical Society celebrated its semi-centennial March 7.—In honor of the twenty-fifth anniversary of his entrance into medical practice, Dr. John T. Howell was given a banquet by his associates and the staff of the Wilkesbarre Hospital. Dr. Howell was also presented with a pearl stick-pin.

Personal.—Dr. Willoughby H. Reed, Norristown, sailed for Jamaica, March 1.—Dr. Thomas P. Cole has been elected president of the council of Greensburg.—Dr. Edward L. Davis has been elected vice-president of the Berwick board of health, and Dr. Alexander B. McRea has resigned as a member of the board.—Dr. George M. Brubaker has been appointed health officer of Mercersburg.—Dr. Mase S. Davis, Pittsburg, returned March 7 after four months abroad.—Dr. John K. Far-

rar, Audenreid, has gone to his home in Newburgh, N. Y., to recuperate from the effects of a recent accident.—Dr. E. Justin Butler, Wilkesbarre, was operated on for appendicitis, March 19.—Dr. George Hemminger has been elected president, and Dr. Samuel L. Diven, secretary, of the medical staff of Carlisle Hospital.

Philadelphia.

Bacteriologic Laboratory Report.—The report of the bacteriologic laboratory of the health bureau for February shows that 1,180 diphtheria cultures were examined and that 2,951,500 units of antitoxin were supplied.

Violation of Pure Food Laws.—Three dealers were held for court, March 22, charged with violating one of the recently enacted pure food laws in not labeling grains. The defendants were held in \$500 bail for each charge against them.

Bequests.—The following bequests have been approved by the Orphans' Court in the distribution of the estate of Charles Hart: Children's Seaside Home for Invalids, Sanitarium Association, Philadelphia Home for Incurables and Children's Hospital, \$5,917.43 each.

To Relieve Hospital Overflow.—The finance committee of councils, on March 22, at a special meeting, appropriated \$45,000 to fit up additional quarters in the Philadelphia Museums building to relieve the overcrowded condition in the Philadelphia Hospital.

Emergency Corps Disbanded.—Director Potter of the department of public safety has issued an order calling in the badges distributed among the members of the medical emergency corps organized during the previous administration, on the ground that there is no further need for the services of the corps.

Patients at Widener Home.—More than 200 patients have applied for admission to the Widener Home, although only 100 can be accommodated. The first examination was made on March 22. No children will be received except those crippled by disease and those who can be benefited or cured. The age limits for admission are 4 and 10 years.

Suits to Remedy Eyesight Defects.—The committee on elementary schools, together with Captain Thorton of the compulsory education department, having been obliged to exclude from school a great many children on account of defects of eyesight which the parents refused to have remedied, on March 21 decided to bring suit against parents who persist in their refusal.

Organizing a Northwest Branch.—A number of physicians residing west of old York road and north of Hunting Parkway convened March 15 to organize the Northwest Branch of the Philadelphia County Medical Society. The requisite number of signatures was obtained to a petition for a new branch. Dr. Morris J. Karples was chosen temporary chairman, and Dr. Howard D. Geisler, temporary clerk.

Dixon Scores Quacks.—Dr. Samuel G. Dixon, state health commissioner, at a meeting of the college physicians, in discussing Champe S. Andrews' paper on quackery, March 19, advocated revoking the state medical license of the "quack" doctor the moment it was proved that the man was carrying on a business in such a manner as to bring disgrace on the medical profession and harm to the victim of his charlatanism. He suggested the preparation of a bill empowering the state medical board to revoke licenses in certain contingencies.

Health Report.—The total number of deaths reported for the week ended March 24 numbered 586. This is a decrease of 5 from the number reported last week and an increase of 55 over the number reported in the corresponding period of last year. The principal causes of death were: Typhoid fever, 27; pertussis, 3; consumption, 60; apoplexy, 22; acute respiratory disease, 122; enteritis, 25; appendicitis, 7; Bright's disease, 56; marasmus, 4; measles, 18; diphtheria, 7; cancer, 13; heart disease, 50; suicides, 3, and accidents, 10. There were 332 cases of contagious disease, with 34 deaths, as compared with 448 cases and 48 deaths reported in the preceding week.

Personal.—Dr. Montgomery Biggs, chief resident physician of Philadelphia Hospital, has resigned.—Drs. Ralph O. Clock, Thomas Mendenhall and Robert Pavne resigned from the resident staff of St. Agnes' Hospital, March 21.—Dr. Carl Vischer is ill at his home with nervous prostration.—Dr. John Marshall, professor of chemistry in the university, sustained a fracture of the leg in a fall, March 23.—Dr. Edward E. Montgomery, who has been confined to his home with bronchial pneumonia, has completely recovered.—Dr. Theodore Fassitt and wife sailed for Genoa, March 24.—Dr. Walter J. Cathall has been committed to the Philadelphia Hospital for the insane.

Food Preservation by Chemicals.—Dr. Harvey W. Wiley, head of the government chemistry bureau, made an address at the Philadelphia College of Pharmacy, March 20. He said that the use of chemicals in the preservation of foods is not only harmful, but unnecessary. "Manufacturers only use formaldehyd, etc., because this method is cheaper than sterilization or freezing. Food need not be impure, and I insist that if a manufacturer doctors his wares he should be compelled to admit the fact by the use of a proper label." Dr. Wiley then showed that the accumulative effect of preserved foods was harmful.

Home Treatment of Tuberculosis.—Dr. Thomas H. Mays, medical director of the Philadelphia Clinic for the Home Treatment of Consumption Among the Poor, announces the appointment of a staff of physicians consisting of Drs. John D. McLean, Ralph H. Spangler, J. P. Bethel, Andrew D. Carter and Arthur C. Wolf. Daily clinics will be held between 3 and 4 every afternoon excepting Sunday, for the treatment of chest troubles in patients who are able to walk. Those who are unable to walk and are not under medical care will be visited by physicians and nurses, if necessary, on giving notice at the clinic rooms. The medical service and nurses are free, but a nominal charge for medicine is made to those who are able to pay.

SOUTH CAROLINA.

Personal.—Dr. Francis L. Frost, health officer of Charleston, has resigned and Dr. Henry W. De Saussure has been appointed temporarily to the position, pending election.—Dr. C. Fred Williams, city physician of Columbia, was operated on for appendicitis at the Columbia Hospital, February 25, and is doing well.

New Hospitals.—The new building of the Columbia Hospital has been completed and is in active operation.—The formal opening of Roper Hospital, Charleston, occurred February 19. The new hospital is on the site of the former city hospital and is under the charge of the South Carolina Medical Association, which agrees to care for the pauper and emergency sick and injured of the city in consideration of an annual payment of \$28,000.

Unlicensed Practitioners Convicted.—The Greenville County Medical Association scored the first victory in its campaign against illegal practitioners January 29, when "Dr." C. P. Price was convicted of the unlawful practice of medicine. The prisoner is said to have fled the country. The law provides for a fine of not less than \$50 nor more than \$300, or imprisonment of not less than thirty nor more than ninety days, or both, at the discretion of the trial judge.

Examiners' Fees for Life Insurance.—As the result of the recent action of the Equitable Life Insurance Company in reducing its fee for examinations from \$5 to \$3, the Kershaw County Medical Society, at a called meeting in Lugoff, February 26, adopted the following resolution:

Resolved, That we revert to our previous fee for life insurance examinations, \$5.00 for old-line companies, that pay the fee, and \$3.00 for fraternal assessment companies where the applicant pays the fee, and that the secretary be requested to notify all the Societies in the state and its officers of the state medical association, requesting them to uphold us in this matter.

Tristate Medical Association of Virginia and the Carolinas.—The eighth annual session of this association was held February 27 and 28 at White Stone Lithia Springs, S. C. A large attendance of the leading medical men of the three component states were present and a program of unusual attractiveness was given. The great number of excellent papers provoked so much discussion as to practically preclude the reading, save by title, of fully one-half of the papers presented. It is predicted a three days' session will become a necessity another year. The following officers were elected: President, Dr. Rolfe E. Hughes, Laurens, S. C.; vice-presidents, Drs. Isaac M. Taylor, Morganton, N. C.; Wilson E. Driver, Norfolk, Va., and James A. Haynes, Blackstock, S. C., and secretary-treasurer, Dr. J. Howell Wray, Waynesville, N. C. The next session will be held in Norfolk, Va., in 1907, the date to be fixed by the executive committee.

TENNESSEE.

Election of Officers.—At the annual meeting of the Memphis and Shelby County Medical Society, March 6, the following officers were elected: President, Dr. James L. Barton; vice-president, Dr. Cummings Harris, and secretary, Dr. J. Wesley Price.

Personal.—Dr. John R. Rathmell, Chattanooga, has been appointed to succeed the late Dr. Edward A. Cobleigh as a member of the state anatomical commission.—Dr. William A. Shafer, Chattanooga, has been re-elected a member of the board of public safety.

Staff of City Hospital.—The mayor of Memphis has appointed Dr. James L. Andrews to the department of medicine; Dr. Frank D. Smythe to the department of gynecology; Dr. Max Henning to succeed Dr. John M. Maury in the department of surgery; Dr. Edward C. Ellett to the department of ophthalmology, and Dr. Alexander Erskine to the department of obstetrics in the City Hospital.

Refuse Low Schedule of Medical Fees.—At the meeting of the Memphis and Shelby County Medical Society, March 6, the following motion was adopted:

Motion.—That the acceptance of the absurdly low schedule of medical fees as proposed by the Maryland Casualty Company is derogatory to the dignity of the profession and that no member of this society should accept the same; also, the proposal of such a schedule of fees by this company is an insult to the medical profession.

Patent Medicines and Counter Prescribers.—The Memphis and Shelby County Medical Society, at its meeting March 20, adopted resolutions unqualifiedly condemning the action of certain druggists in assisting to defraud the public by means of guaranteeing cures by patent medicines, condemning the practice of counter prescribing by druggists, and notifying the druggists of the city that should they persist in these practices they will gain the antagonism of the members of the society.

Rutherford County Medical Society.—At its meeting in Murfreesboro, March 7, the society appointed a committee on public health and legislation, consisting of Drs. Enoch H. Jones, Murfreesboro; William E. Yurhee, Readyville, and Harry C. Rees, Murfreesboro. The delegate to the state medical association was instructed to vote for transactions in book form and not for a state journal. The president appointed a committee composed of Drs. Enoch H. Jones, William C. Bilbro and Rufus Pitts, all of Murfreesboro, to prepare for the coming of the organizer of the American Medical Association, Dr. J. N. McCormack, Bowling Green, Ky., who delivered an address at Citizens' Theater, March 13.

TEXAS.

Fire Loss.—Fire in Amarillo, March 11, destroyed the offices of Dr. John W. Pearson, with a loss of about \$4,500, on which there was no insurance.

District Association Meeting.—The Fifth District Medical Association at its meeting at Seguin, March 9, elected Dr. W. A. King, San Antonio, president; Dr. John T. Fitzsimons, Castroville, vice-president, and Dr. R. L. Knolle, Seguin, treasurer.

College Wants Railroad Hospital.—The Fort Worth Medical College has made a proposition to the chief surgeon of the Missouri, Kansas & Texas Railroad to add accommodation for 50 patients to the hospital department, provided the road will make use of the building as its hospital in Texas.

Must Not Advertise.—At its last meeting the Tarrant County Medical Association decided henceforth to oppose all forms of advertising by physicians in daily papers, hotel registers and the like; with the exception that when a physician moves his office, he is allowed to advertise the fact for ten days; that when a newcomer locates, he may advertise for ten days; and that a practitioner who has been away from town for two weeks or more is allowed to advertise his return for the same length of time.—The Fort Worth Medical Society, at its meeting, March 7, adopted similar resolutions.

Insurance Examination Fees.—The Hopkins County Medical Society, at its meeting, March 12, adopted the following resolutions relating to fees for examination for accident and indemnity insurance associations:

Resolved, That all fraternal or assessment insurance companies or societies shall pay not less than \$3 for each medical examination, and extra for additional work or secondary examinations of urine, etc.

Resolved, That all old line insurance companies shall pay a minimum fee of \$5 for each medical examination, and further,

Resolved, That we, as members of the Hopkins County Medical Society will not report on any accident for indemnity or sick benefit for any company or society that does not regard the moral character of its risks.

Practice of Medicine Bills.—The Smith County Medical Society at its meeting, March 13, approved, with modifications, the bill to regulate the practice of medicine in Texas, which prescribed more stringent regulation, more strict qualifications, more rigid examinations and a compulsory examination for practitioners from outside the state. It also approved the anatomic bill proposed by the state medical association, which permits medical colleges in the state to obtain bodies of paupers and unclaimed persons for anatomic material.—At a called meeting of the Galveston County Medical Society, March

16, the medical bill was discussed and approved, with amendments. The bill contemplates a state medical board to be made up of representatives from the regular, homeopathic and eclectic schools, and the osteopaths, the representation being apportioned according to the number of practitioners of each school in the state. The state board is to be the examining board, and all practitioners must be examined before this board before being granted license to practice medicine.

Personal.—Dr. V. E. H. Reed, Holland, suffered amputation of a finger on his right hand on March 3, on account of septicemia.—Dr. Pierre M. Kuykendall, Moody, was stricken with cerebral hemorrhage, February 28, and is critically ill.—Dr. E. Brazier Blalock, Woodlawn, has announced his candidacy for the Democratic nomination for lieutenant governor, one plank in his platform being that he will protect the people of Texas from medical quacks and incompetent practitioners.—State Health Officer Tabor is expected to return from Europe in time to attend the meeting of the state health officers of the gulf states, April 2.—Dr. William E. York, Giddings, was seriously injured about the head and shoulders in a runaway accident, March 14.—Dr. Richard H. Harrison, Bryan, has resigned as mayor, to take effect April 1.—Drs. Orlando Patton, Midway, and A. H. Spear, Madisonville, have been appointed inspectors for the United States Public Health and Marine-Hospital Service at Port Limon, Central America, and Colon, Panama, respectively, to inspect the sanitary condition of the cities and their methods of disinfection, etc.

UTAH.

Personal.—Dr. Edward A. Rich, Brigham City, has sailed for Germany.—Dr. Samuel G. Paul has been appointed assistant health commissioner of Salt Lake City.

Hospital's Debt Cleared.—Bishop Spaulding of the Episcopal diocese of Utah has succeeded in raising money to clear off the debt of \$40,000, which had been carried by St. Mark's Hospital for several years.

Medicine Hawkers Licensed.—The city council of Logan on March 7 passed a new license ordinance whereby medicine hawkers are required to pay a license of \$35 a month instead of \$3 per day as before.

Merger.—The *Utah Medical Journal* has been absorbed by the *Denver Medical Times*, which is now to be known as the *Denver Medical Times and the Utah Medical Journal*. The Utah edition will be prepared by local editors, of whom Dr. W. Brown Ewing is chief and Dr. Franklin H. Raley, associate.

County Society Takes Action.—The Salt Lake Medical Society, at its meeting March 13, extended its congratulations to the senators from Utah for their vote for the Pure Food bill and thanked them for their support.—At the meeting of the society, February 18, resolutions were adopted condemning the acquittal of Dr. E. S. Payne, charged with performing a criminal operation on Miss Alice Ferguson, who died from its effects.

WASHINGTON.

New Buildings Opened.—The two new ward buildings at the Western Washington Hospital for the Insane, Port Stellancom, have been completed and turned over to the board of control.

Personal.—Dr. Burt Thomas has been elected health officer of Walla Walla, vice Dr. J. W. Ingram, resigned.—Dr. W. James Howells has returned from Europe and resumed practice in Spokane.—Dr. Wilson Johnston has been elected president, and Dr. Robert J. Skaffe, secretary, of the Colfax Doctors' Club.

Vital Statistics.—The births in Spokane for 1905 were 1,101, or 418 more than the reported deaths.—Walla Walla reports in 1905 only 27 cases of communicable disease, distributed as follows: Diphtheria, 19; scarlet fever, 4; measles, 3, and smallpox, 1.—Chehalis, with only 26 deaths during the year, equivalent to about 6 per 1,000 of population, claims to be the healthiest city in Washington.

Unlicensed Practitioners Fined.—"Dr." Benjamin E. Hays, an optician, of Tacoma, charged with practicing medicine without a license, pleaded guilty, and was fined \$75.—Walter Reed, of Portland, Ore., arrested in Colfax, charged with practicing medicine without a license, paid the costs of the action, amounting to about \$25, and the case was dismissed on his promise to drop the title of doctor and to use the title of optician or refractionist.

WEST VIRGINIA.

Fire Damage.—In a fire at St. Albans, which caused a loss of \$900,000, the offices of Drs. William A. Heslop and Delafeld Hereford, and the residence of Dr. John H. Suntherland, were destroyed.

Personal.—Dr. Gus Capito, Charleston, sailed from New York for Germany, March 10.—Dr. John W. Ramsey, Clarksburg, is seriously ill.—Dr. J. E. McDonald, Logan, is in the Kessler Hospital, Huntington, seriously ill with typhoid fever.—Dr. Thomas F. Downing, superintendent of McKendree Hospital, has resigned, to take effect March 15.

Society Meetings.—The Fayette County Medical Society held its annual meeting at Thurmond, January 26, at which Dr. W. W. Hume, Quinnimont, was elected president; Dr. Lancy B. Rupert, Nuttallburg, vice-president; Dr. John W. Hopkins, Fayetteville, treasurer (re-elected), and Dr. Charles F. Mahood, Oakhill, secretary (re-elected).—The Ohio County Medical Association held its annual banquet in Wheeling, January 31. Dr. Samuel L. Jepson, Wheeling, presided as toastmaster.

WISCONSIN.

New Buildings for Sanitarium.—Dr. Richard Dewey, superintendent of the Milwaukee Sanitarium, announces that the two new buildings for the institution, namely, a fireproof ten-room hospital for psychopathic cases, with special provision for hydrotherapeutic treatment, and a convalescent cottage with twelve rooms arranged in suites, will be ready for occupancy April 1 and May 1, respectively.

Oppose Contract Work.—The physicians of Racine as a body, including practitioners of all schools, have pledged themselves not to take any more contract work, insurance, lodge or otherwise, during this year. The opposition raised by certain lodges, factories and insurance companies has now subsided, as the local press has made it clear to the public that the people will be the gainers by doing away with medical contracts.

Supreme Court Decides Against Student.—In the case of Robert A. Burg, a dental student, against the Dental Department of the Milwaukee Medical College, in which he asked a mandamus to compel the institution to grant him a diploma, the Supreme Court reversed the decision of the lower court and quashed the writ of mandamus. The college authorities claimed that the plaintiff was notified of the ruling of the State Board of Examiners that the custom of allowing entrance requirements to be completed during the first year had been abrogated, and that students deficient in entrance requirements were required to make them up before the close of the first semester.

Personal.—Dr. W. A. Gordon, Jr., Oshkosh, has been appointed assistant surgeon of the Wisconsin National Guard, with the rank of first lieutenant, and has been assigned to the Second Infantry.—At the meeting of the Brown County Medical Association in De Pere, March 15, Dr. Fred N. Brett, Green Bay, was elected delegate to the state medical society, and Dr. Alphonse M. Kersten, De Pere, censor.—Dr. Charles Schoenfeld, LaCrosse, sailed for Europe, March 28.—Dr. Albert P. Minshall, Viroqua, was seriously burned in the face and wrists by the explosion of a furnace in his house, February 27.—Dr. Louis Fuldner, Milwaukee, and Dr. Moses J. White, Wauwatosa, have returned after a two weeks' trip to Cuba.—Dr. Oscar Loehr, Milwaukee, has returned after a six months' visit in Europe.

GENERAL.

Medico-Psychological Association Meeting.—The sixty-second annual meeting of the American Medico-Psychological Association will be held in Boston, June 12 to 15, 1906. The chairman of the committee of arrangements is Dr. George T. Tuttle, Waverly, Mass. The secretary of the association is Dr. Charles W. Pilgrim, Poughkeepsie, N. Y.

Health Report of the Isthmus for February.—In his report of the health conditions on the Isthmus during February, Colonel Gorgas states that still another month has passed without a case of yellow fever, and that the Canal Zone is equally free from other quarantinable diseases. Among the 23,000 employees, on an average 472 were in hospital daily; a sick rate of 20 per mille. He believes that this is an excellent showing. During the month there were 56 deaths. Of these 7 were white and 49 were negroes. There were only 11 deaths from pneumonia. The sanitary work was carried on as usual.

FOREIGN.

Calendars as an Advertising Medium for Nostrums.—The governor of Minden, one of the German states, has ordered the various local authorities to pay particular attention to the advertising of nostrums, etc., on calendars and in pamphlets, and to prosecute in case they conflict with the regulations.

Jubilee of the Turkish Imperial Society of Medicine.—The jubilee meeting of this society was held during the first week in March.

The Soldiers' Teeth.—The British war office has announced that an additional dental surgeon is required for duty with troops in the United Kingdom from April 1 next. He will be required to devote his entire time to military duty and will receive a salary of £365 (\$1,825) per annum, and traveling expenses.

Pathologic Laboratory for the Women's Hospital in Melbourne.—At a recent meeting the hospital committee of the Women's Hospital of Melbourne, Australia, took under consideration the advisability of establishing a laboratory under the charge of a competent pathologist who would be required to attend the hospital on all operating days and at such other times as might be necessary.

To Feed Indigent School Children.—A bill has been introduced into the English house of commons, having for its object the feeding of poor school children. The bill met with a favorable reception at the hands of the minister for education. The principle of the bill will probably be embodied in the new education bill and the only remaining question is the source from which the money is to be drawn.

In Memory of Semmelweis.—The Medical Club of Budapest has voted to have an artistic tall drinking vessel made as a memorial to Semmelweis, to be used only on great occasions, when the "pokal" will be handed around with great ceremony. It will be used first at a banquet to the memory of Semmelweis, on his anniversary; and in the following years, only when some important medical or scientific question is to be discussed or tribute paid to some departed notability.

Out-Patients and Fees.—In order to check to some extent the abuse of the out-patient departments of the large London hospitals, it has been suggested that a small fee be charged each out-patient after the first visit. This suggestion, however, did not meet the approval of the members of the council of the Metropolitan Hospital Sunday Fund, who were of the opinion that any abuse that may already exist could be effectually met by an efficient system of investigation conducted by a competent staff engaged in visiting the homes of the patients.

Clinic Sued for Damages from Carelessness of Nurse.—A nurse at the University Clinic at Bonn gave a caustic powder by mistake to a patient who had entered the clinic for an operation the next day. The action of the caustic caused injuries which still persist to a certain extent, and the patient sued the university for \$3,000. The university claimed that it was a state institution and not individually responsible, but the local and supreme courts decided that the university was legally responsible for injury resulting from carelessness in its clinic and sustained the claim for damages.

Juvenile Smoking Bill.—A bill has just been introduced into the British parliament designed to carry out the unanimous recommendation of the physical deterioration bill: 1. To prohibit the sale of tobacco and cigarettes to children below a certain age; 2. to prohibit the sale of tobacco and cigarettes in candy or other shops frequented by children. The operative clause would enact that any person selling, giving or supplying tobacco in any form to or for the use of any person under the age of 16 would be liable to a fine on first conviction not exceeding \$5 and on further conviction not exceeding \$10.

The Organized Profession in Germany.—The semi-official societies that insure against sickness (Krankenkassen), of the city of Münster recently refused to grant the request of their medical officers for increased remuneration and introduction of "free choice" of physicians by patients. It was one of a few places where the old rates still prevailed. The medical officers resigned in a body, and the companies tried to attract outsiders to take their places. They were unable to procure enough medical attendants for their sick policy-holders, and the municipal authorities promptly interfered and closed a contract with the former medical officers on the latter's terms.

Protection of Nurses.—For some time the view has been gaining ground in Great Britain that nurses should be registered. Nursing calls for special skill, technical ability and a thorough training. The public, of course, is no judge of the qualifications, and in consequence the calling is greatly abused. Many women who pose as trained nurses are impostors and in some instances moral delinquents against whom protection is necessary. There can be no doubt but that registration would be of benefit to the public as well as to genuine nurses. A deputation holding these views recently waited on the president of the privy council, requesting that steps be taken to provide legislation to meet the case. The minister, without

binding himself to any definite promise, held out hopes that the government would consider the matter, and that ere long the registration of nurses would be secured.

Sixth International Congress of Applied Chemistry.—One of the eleven sections of this congress, which will be held at Rome, April 26, is to be devoted to medicine. The medical section is in charge of Prof. E. Paterno of Rome. It is to be divided into subsections for medical hygiene and chemistry, pharmaceutical chemistry and bromatology or the science of alimentation. The five preceding congresses were held at Vienna, Berlin and twice at Paris since the first congress at Brussels in 1894. The Italian state railroads and navigation companies allow a reduction of 40 or 60 per cent. to members of the congress.

A New Morgue for Sidney.—It is reported that Sidney, Australia, is at last to have a new morgue. The *Australasian Medical Gazette* states that ever since the South Sidney morgue was destroyed because the site was required for the new railway station, the only available morgue has been the old North Sidney morgue, and that the building is not only ridiculously inadequate, but that it is also out of date as an institution for the important medicolegal work which must be done there. Plans have been prepared for the erection of a coroner's court-house and offices and a morgue, but only the latter is to be completed at present.

Dentists for Public Schools.—The city of Ulm, Germany, has decided to install a school dentist, who will examine and treat the children's teeth as occasion demands, giving up private practice. Investigation showed that only 2 per cent. of all the boys in the high schools and none in the primary schools had ever had their teeth examined by a dentist. Among the girls the findings were more favorable, over 36 per cent. in the high schools and a few in the primary schools having been examined. Fillings were found in from 3.3 to 16 per cent. The question as to what proportion of the dental work shall be done free of charge is not yet decided. The experiment of school dentistry has proved successful at Strassburg. It is said that only 160 children with sound teeth were found among 2,103 between the ages of 6 and 8, while the number was only twice this in a corresponding number of children between 3 and 6. Headache, earache, stomacheache, as well as toothache, have nearly vanished from the schools since this system of compulsory dentistry was established.

Inspection Under the New Aliens Act.—The new aliens act which came into force in England in January has already had the effect of excluding many "undesirables." Since this act has been law immigration to Great Britain has been greatly curtailed, a significant feature being that scarcely one case of trachoma has been seen among immigrants in London. The act, too, has had the result of drawing attention to the disgraceful way in which some of the immigrants are brought to London. Dr. H. Williams, medical officer of health for the port of London, recently gave extracts from the report of the sanitary authorities with regard to the accommodation provided for aliens on some ships. One ship in particular, which came from St. Petersburg, carrying 305 alien steerage passengers, was in a filthy and offensive condition. The available air space per capita was only 60 cubic feet and floor space 8 square feet. No provision was made for the separation of the sexes. Ventilation and lighting were unsatisfactory, provisions insufficient, and in the event of bad weather the passengers had to be confined to the quarters, as the after-deck was wholly occupied by horses.

Abortionists' Advertising in Spain and Belgium.—At a recent session of the Spanish Senate, Dr. A. Pulido, now prime minister, formerly chief of the National Sanitary Service, and one of the editors of the *Siglo Medico*, called the attention of the legislators to a crime which he said is being committed constantly in the most cynical and scandalous manner. As an instance of the class of crimes to which he referred, he read an advertisement from a daily paper as follows: "Menstruation appears after taking three times the Dr. Paris prescription, whatever may be the cause of its suppression. In short," he continued, "the crime is that of abortion, against which four special laws have been enacted. This crime is practiced with such frequency that if it were possible to ascertain the number of victims, society would be horrified. I am certain that I am not exaggerating when I state that there are persons who have committed this crime forty, fifty and up to sixty times. There is no way to prosecute them, when such advertisements as this are allowed to be published in the papers. The daily press publishes them without giving thought to their contents; they are merely one among a certain number of ads. The penalties provided

evidently do not fit the case, as such advertisements are constantly recurring, some of them announcing hours for consultation at which what is left unsaid in the advertisements is realized." He called on the highest authorities in the cabinet to take up the matter officially, and it was formally referred to them. His address is given in full in the *Siglo Medico* for March 3, 1906.

Relief for London Hospitals.—A new proposal has been made for relieving the expenditure in London hospitals. Mr. Sidney Holland, secretary of the London Hospital, in Whitechapel, explains that much of the burden is due to the great expense of modern surgery, and to the lower middle classes having neither money nor the house room for serious operations. Many people who could afford to pay a certain sum can not bear the expense of going to a satisfactory nursing home and are compelled to enter a hospital when they need surgical care. Mr. Holland proposes that a large hospital be built where accommodation may be obtained, either expensive or cheap, but where the patient is to deal directly with his surgeon on a professional and not on a charitable footing. The argument is made that the carrying out of such a plan would free the charity hospitals from liabilities which do not rightly belong to them, and at the same time give many people a real alternative to charitable treatment. It must be borne in mind that unlike the hospitals of America, nearly all hospitals in Great Britain are free, and that only a few admit paying patients. There are in London itself only two hospitals in which are private wards; of these St. Thomas' is the best known. The really serious criticism which has been raised with regard to the scheme has to do with the financial arrangement. It is doubted whether the best surgeons would feel inclined to meet the proposal by a reduction of their fees in proportion to the purse of the patient with a limited amount of money to spare. It has been suggested that a public meeting should be called to consider the proposal either in the city of London or in the city of Westminster.

Passive Resistance in Lower Austria.—Representatives of all the medical organizations in lower Austria held a mass meeting at Vienna, March 3, to manifest their sympathy with the united stand recently taken by the country practitioners in protest against the absurdly low remuneration allowed by the national authorities for certain medical duties. The organized stand taken by the profession in Austria was mentioned recently in these columns, page 736. At the mass meeting funds were raised and the representatives of the various medical councils pledged their influence to insure the organized backing of the profession at large. Appeals have been made to the central authorities on behalf of the physicians by the various communities, several uniting in a petition which comments appreciatively on the fact that the physicians have held high the standard of humanity during their dispute with the authorities, not stinting their services to the sick, the poor or to the communities at large. Their "passive resistance" merely affected certain of their functions, and although their procedure caused the state officials and the district boards of hygiene a vast amount of trouble, yet suffering humanity was not affected by it. The plan of "passive resistance" is merely to report to the authorities every case of suspicious disease, without stating the diagnosis, as "suspicion of sepsis or diphtheria" or "suspicion of scarlet fever or measles." The district board is compelled by law to send the district physician to every case of infectious disease in which the attending physician is not sure as to the diagnosis. The petition further states that the efforts of the physicians in question (the "Gemeindeärzten") have the deepest sympathy of the subscribing communities. They appeal to the central authorities to hasten to put an end to the present unbearable condition of the physicians by revising the present laws on the subject to harmonize with the frequently expressed wishes of the medical profession, and to inform the medical profession of this intention so that the passive resistance may be brought to an end before the country loses all its country practitioners. The *Leinzeiger Verband* of Germany has given \$5,000 to help the cause, and our Vienna exchanges comment on this gift as not only a generous and welcome material aid, but as inserting a leaf of gold in the history of the medical profession. It adds that a brilliant example is given to all the members of the profession by this act of medical solidarity.

LONDON LETTER.

The Institute of Medical Sciences.

The project of the University of London to centralize the preliminary teaching of medical students, which is now carried

out, often under difficulties at the various hospitals, is progressing. The university has decided to establish, as soon as funds are available, a school of preliminary medical science, including anatomy and physiology, at South Kensington. Toward the building fund the Goldsmiths Company has given the sum of \$50,000, which raises the amount now obtained to more than one-half of that required to begin building operations.

The Royal Institute of Public Health.

This institution was formed recently for the purpose of instructing all persons interested in the subject of public health. It consists of a library, museum and laboratories. Arrangements are made for the delivery of a series of lectures by well-known authorities. A number of mayors and the principal officials of London boroughs as well as some from outlying districts were invited to inspect the chemical and bacteriologic laboratories. These laboratories were instituted about a year ago with the view of enabling physicians and others (such as sanitary inspectors) desirous of securing a public-health qualification to receive suitable training, and also as a place where municipal authorities and others would have the opportunity of obtaining reliable chemical and bacteriologic reports and advice. So far, the advantages of the laboratories have been sought to a considerable extent, and it was with a view to make their utility better known that this inspection took place. A number of experiments by which adulteration is detected were shown also, and an address on the objects of the institute was delivered by Prof. W. R. Smith, the president.

The Administrative Control of Phthisis.

The local government board of Scotland has issued an important circular which is the first official statement that local authorities have serious responsibilities and powers in regard to the control of pulmonary tuberculosis. As the disease is recognized as infectious, it is pointed out that the provisions of the public health act regarding infectious diseases apply to it. These include the arrangement of proper premises and apparatus, and attendance for the disinfection of bed clothing, etc., and the disinfection of rooms or houses, with powers of entry, when necessary, to disinfect and to destroy infected articles. When patients with phthisis are treated at home the board recommends that the local authorities insist on the disinfection of the house at frequent intervals. The importance of thorough disinfection is emphasized and it is insisted that it should not be left to the friends of the patient or fellow-workmen, but should be carried out by skilled officers. Disinfection is also recommended in connection with all places of public resort (schools, churches, halls, theaters, markets, railway stations and public conveyances). Special attention is directed to the suppression of spitting and the disinfection of sputum. Local authorities are assured that they have power to prevent infected persons from exposing themselves in streets or public places without proper precautions against spreading the disease. The establishment of tuberculosis dispensaries, hospitals for early cases (sanatoriums), reception houses or hospitals for patients in an advanced or dying condition, and colonies and homes for convalescent patients able to work but requiring medical supervision, are sanctioned.

The Purity of Potable Spirits.

Largely because of its persistent advocacy by the *Lancet*, a most important reform has been introduced in regard to the purity of potable spirits. For years brandy and whisky have been sold mixed with cheaper spirits of other kinds and no question was ever raised as to adulteration. In 1902, in a report of a special commission on brandy, the *Lancet* expressed the hope that the chemical analysis of spirits would be conducted with greater attention to detail than had been given to it by public analysts. Numerous prosecutions were then instituted against persons who sold under the name of brandy concoctions containing cheap spirits made from grain and other substances, and convictions were obtained. Attention was then directed to whisky. The health authorities of the borough of Islington have just prosecuted vendors for selling, in one case Scotch and in the other case Irish whisky, which contained a large percentage of patent-still (otherwise silent or neutral) spirit. The case was very protracted and an enormous amount of evidence was given on both sides. The witnesses comprised physicians, chemists, distillers and various trade representatives. The analyst for the prosecution fixed as the result of examination of a great number of genuine whiskies the minimum coefficient of secondary products at 330 parts per 100,000 of absolute alcohol. In the disputed example of Scotch whisky the coefficient was 110.5 and in that of Irish whisky 174.5. The inference was that each sample consisted

of patent-still, silent or neutral spirit. This agreed with evidence of a witness called for the defense who supplied the spirit. He stated that the sample was practically young patent spirit with a "dash" of pot-still malt spirit. In the opinion of the judge, spirit produced in a patent still from a mash consisting to a large extent of maize to which a "dash" of true whisky made from barley malt in a pot still had been added is not whisky. Notwithstanding that much evidence was given to show that the public preferred a blend made in this way to true whisky the defendants were convicted. The sale of such a spirit is not illegal, but it must not be termed whisky; its nature must be stated on the label.

Vagrancy and Disease.

The departmental committee on vagrancy has just issued a valuable report which deals exhaustively with the whole subject. It includes a historical survey of the attempts to deal with vagrants from 1495 to the present day. At the periods of trade depression there are in England and Wales from 70,000 to 80,000 vagrants, and in good times as many as 30,000. Like many other of our methods of government, the mode of treating vagrants is inconsistent and illogical. "Between the poor law and the police the vagrant has flourished. The police treat him as a criminal, but do not punish him, and the poor law authorities treat him as a pauper, but do not relieve him." It is now decided that vagrants are to be handed over to the police authorities. The bona-fide seeker after work will be helped to find occupation and each police station will become an office of information as to the work of the district. On the other hand, the professional tramp will be sent to a labor colony for six months or even three years in order that he may learn to work and be cured of his habit of vagrancy. The tramp has long been recognized as a spreader of infectious disease. Dr. Armstrong, health officer of Newcastle-on-Tyne, has shown the great part played by tramps in the diffusion of smallpox. In 1893 smallpox was first introduced by vagrants into 58 per cent. of 63 large towns and was carried sooner or later into 72 per cent. on an average about five times to each town. In this way the disease was taken to 30 workhouses and to 70 common lodging houses. The dissemination of the disease was mainly due to tramps suffering from it in the modified form. In the workhouse the bath and the disinfection of clothing are a protection against the conveyance of disease by the tramp, but many more tramps come from common lodging houses where these protections do not exist. The report endorses Dr. Armstrong's suggestion that by-laws should be adopted for common lodging houses, and that they should be watched by sanitary inspectors. Another interesting point in the report is the dietary for casual wards and labor colonies. In investigating this subject valuable assistance has been received from Professor Foster and Dr. Hopkins of Cambridge. Guided by them, the committee has taken 70 gm. of proteid and 3,000 calories as the standard of diet for the casual wards and labor colonies. This reduced standard is due to the results of the recent investigations of Professor Chittenden and others. A considerable economy will be effected by adopting this standard. It is calculated that the diet need cost only 40 cents a week. Under the old standard the cost was \$1 or \$1.25.

Action Against Physician for Conveying Scarlet Fever to a Puerperal Woman.

A remarkable case has just been decided in the courts which, in consequence of its widespread importance to the profession, has attracted much attention. A physician was called to a case of scarlet fever, after seeing which he went home and disinfected his hands. Two hours later he was summoned to a case of labor. On the fifth day the woman developed scarlet fever. The woman's husband alleged that the doctor conveyed the disease to her and claimed damages for negligence. For the plaintiff it was urged that a puerperal woman was specially liable to infection with scarlet fever in a specially malignant form and that more complete precautions against conveying infection should have been taken. Counsel supported this view by reading extracts from the writings of Dr. Galabin and Dr. Boxall, but as he did not call these authorities, the judge ruled that this was not evidence. On the other hand, Drs. Herman and Hunter were called for the defense and stated that a puerperal woman is neither more nor less liable to scarlet fever than other people; that puerperal scarlet fever is rare and that it is not more dangerous than scarlet fever apart from the puerperal state. The next point in the plaintiff's case was inspired by the writings of Dr. Boxall, who stated that the following precautions should be taken after visiting a case of scarlet fever before going to a case of labor: "1. A disinfect-

ant bath; the whole body should be immersed, the head above all, for the hair is a veritable network to entangle the poison; 2. a complete change of clothing; 3. active outdoor exercise." The physician, according to his evidence, after seeing the case of scarlet fever, walked home, a distance which occupied about five minutes. He found a message to go to the case of labor. He disinfected his hands and arms with izar and changed his coat. He visited another patient, walking about a quarter of a mile, and took a cab and drove a distance of two and one-half miles to the patient's house. He went in and shook hands with her. Then he retired to an ante-room, took off his coat, scrubbed his hands and arms with soap and water and repeated the process in a solution of corrosive sublimate, and finally rinsed them in a solution of izar. After putting on rubber sleeves, which he had previously disinfected, he examined the woman. Two physicians were called for the plaintiff and stated that a physician should transfer a case of labor to another if he was called to attend it within two hours of visiting an infectious case. This would be their own course. They considered that in order to disinfect himself a physician should change all his clothes and take a bath. For the defendant a large amount of medical evidence was called, including Dr. Herman (London Hospital), Dr. Hunter (London Fever Hospital), and Professor Spencer (University College Hospital). They all agreed that the precautions taken were the ordinary ones and quite sufficient, though there were more complete ones, such as those described, but that these were impracticable in general practice. None of these witnesses agreed with the opinions quoted from Dr. Boxall of the special susceptibility of the parturient woman to scarlet fever. The jury gave a verdict for the plaintiff.

Medical Legislation

New York Practice of Medicine.

The position taken by the Educational Department of New York state regarding osteopathy is shown in the following extract from a communication sent to the members of the legislature by Mr. H. J. Rogers, first assistant commissioner of education: In our opinion the state should not recognize any school of practice in medicine any more than any special creed or cult. Medicine is so rapidly developing into an exact science and depends so completely on the latest discoveries in biology and kindred sciences that the only logical position which it seems to us the state can assume concerning those who are to practice the healing art in any form on their fellow-men is that they shall, first, receive a thorough preliminary education; second, a thorough professional education—the requirements of both to be fixed by the state; third, to be licensed to practice medicine. They will be thus fitted and left free to choose any form of practice which may appeal to their judgment.

The Medical Society of Erie County has also sent a protest against the osteopathic bill to every assemblyman and senator in the state. The society denounces the bill as a pernicious measure, believing that its passage would lead to evils so great as to be criminal in character. It recognizes that the main object of the bill is to legalize the practice of the thousands of osteopaths now practicing in New York rather than to provide for the education of others in the future. The bill is also considered objectionable because it provides for a multiplication of examining boards and for three separate standards or requirements for the practice of osteopathy.

Blister Sign of Death.—Dr. Ott of Lillebonne has found the "explosive blister" a valuable means by which to distinguish between real and apparent death. He has simplified Marteno's technic and has found the test practicable and reliable. The forearm is drawn out horizontally, allowing sufficient space between it and the ground for a candle. The flame of the candle or of a taper or match is then held beneath it, allowing the flame to touch the skin on the anterior aspect of the forearm. In a few seconds an air blister forms and bursts, but there is no fluid. If the person is still alive, an ordinary blister inclosing serum forms instead of the dry, explosive-gas blister.—*Gaz. Med. Belge*, Feb. 22.

Correspondence

Pauper Fees by Wealthy Corporations.

MARYLAND CASUALTY COMPANY.
Office of the President.

BALTIMORE, March 10, 1906.

To the Editor:—Your issue of March 3 contains a letter from Dr. C. H. Emery regarding the schedule of fees this company is paying physicians for immediate surgical attention to injured persons for whom we agree, under our policies, to obtain such service. You have appended to Dr. Emery's letter certain comments. The letter and the comments are of such a nature that they may possibly work some injury to this company, if allowed to go without reply. You will, of course, as a fair journalist, give to this reply equal prominence to that which you gave to Dr. Emery's letter and your own comments.

I am at a loss to understand why a matter of this kind should be thought by any one a proper subject for newspaper publication. It is purely a matter of agreement or disagreement between two parties. If one of the parties (the company, for instance) finds that the other party (the doctor) does not see his way clear to work at the fees offered, it would be a foolish and unbusiness like proceeding to rush into print with a tirade against the doctor as an extortioner. And it is equally so for the doctor and the editor to indulge in heroics because they think the fees offered are too small. If the time and skill of Dr. Emery are worth, in his judgement, taking all the features of the question into account, more than the company offers, he has an unquestioned right to decline the offer. If another doctor believes it is to his advantage to accept the offer, all things considered (although probably he would be entitled under ordinary circumstances to larger fees), it would be a piece of impertinence for any one to criticize him for doing so. The attitude of the good Dr. Emery and of your esteemed editorial self is in its essence the attitude of the trade unionist and walking delegate who assume to say that no man shall work for a figure other than is fixed by "the union." It is un-American and unreasonable.

This is the way the matter is viewed by the very large number of doctors who have agreed to the fee schedule which our good friend, Dr. Emery, and yourself criticize so unmercifully.

JNO. T. STONE, President.

[We are glad to give Mr. Stone's letter a place in our columns, as it is a fair example of the policy of insolence and greed governing many of those holding high positions in the insurance world in their dealings with medical men. It is strange, however, that our correspondent can not understand why he and his company are not left unmolested to deal as they please with the helpless individual doctor, or why an organ representing the physicians of this country should comment on the injustice which they are perpetrating on the profession and advise its readers to resent it.

It is notable that none of the deserved criticism and disgrace which insurance officials recently have brought on themselves has attached to their medical departments. Even in the home offices the medical men have been poorly compensated as compared with the lay officers, and yet, on false and specious pleas, the medical examiners have been asked to bear a disproportionately large share of the first steps in economy. Without the courtesy of a conference or the opportunity for protest, medical men who had spent years of time and much money in preparation for their duties and who had always been poorly paid, were cut 40 per cent. in their fees by a stroke of the pen.

One of these same institutions has recently employed a man as president at a salary of \$80,000 a year, who has had no training for the position, and who had been serving his country for \$8,000 a year. As his predecessor's salary had been \$100,000 a year, he at once announced that he had generously cut his own salary 20 per cent. and that other salaries in the home office would be scaled at the same rate, but the medical examiners, who appear to have had no friends at court, were to be sliced 40 per cent. At least this is what the Maryland Casualty Company has done.

In justification, the plea is made that assessment and co-operative companies and lodges, heretofore condemned as unworthy of confidence and discussion, have never paid decent fees to physicians. In the face of this record we confess that the talk about trade unions and walking delegates only make the impression on us of an impertinence.

There was a time when the medical men had no organization and hardly dared to make even a protest. It is very different now. We now have approximately 50,000 members in our county societies reaching into 2,400 of the 2,830 counties in the United States, and by concert of action can control the situation over a large part of the country.

It should not be difficult to see that cheap doctors, which usually spells "uneducated doctors," are as dangerous as insurance examiners as they are as family physicians. We therefore suggest that physicians make no reply to such communications from any source regarding cut-rate fees for their services. Proper dressings could hardly be furnished for the fees proposed in the schedule of the Maryland Casualty Company, and no self-respecting physician ought to sell his services to such a corporation at wholesale and have them retailed to the people of his own community at prices which have enabled these companies to amass a fortune and until recently to defy public opinion.

It is hardly necessary for us to say that we heartily favor legitimate insurance, both accident and life, but it is a public business and a fair subject of criticism, and Dr. Emery did both the profession and the people a service in bringing this great mistake in policy to our attention.—Ed.]

Race Suicide (Criminal Abortion).

FORT COLLINS, COLO., Feb. 24, 1906.

To the Editor:—For some time there have been many criminal abortions performed in our city, and the thought occurred to me that by getting the physicians and ministers together and formulating a statement as to the gravity of this crime we might do something to check it. A meeting was called and the statement I send you was formulated and signed by the persons whose names are appended.

The intention was to have a lot of these printed so that each physician could have a supply and distribute them where he thought they would do the most good. While we have not yet carried out this last part of our plan, I believe our action has had an excellent effect on physicians who had been doing or might be induced to do that kind of work.

E. STUVER.

STATEMENT.

Human life is the most sacred thing in the world. So deeply is this fact grounded in our very being or nature that all civilized nations have enacted stringent laws protecting human life and prescribing severe punishments for those who destroy it. In spite of these facts there is a misapprehension on the part of some and an evasion on the part of others, as to the time in the development of the human being when these legal enactments and moral obligations become operative and of binding force. Human life with all the potentialities of the fully developed human being begins just as soon as there is a vital union of the male and female generative elements, and the destruction of this life, no matter how lowly the form or early the stage of development, is just as much the destruction of a human life as it is to kill an infant, a child or an adult.

Believing it to be the duty of all intelligent and progressive men and women to do everything in their power to encourage and to promote good, to lessen evil and to transmit unimpaired to their descendants the heritage they have received from the past, we desire to call attention to one phase of the race-suicide problem which has permeated the whole fabric of our society and is causing more suffering and death than all the wars of the world put together. Operating as it does by secrecy and stealth, it is undermining the very foundations of morality and religion, and is becoming a serious menace to the health and perpetuity of the race.

We further believe that many women, who do not fully understand the gravity of the crime nor the dangers that attend its performance, suggest or insist on it themselves or allow

themselves to be persuaded to have it done by the cowardly, conscienceless criminals who do this kind of work. It is almost needless to say that we refer to criminal abortion. Abortion is the destruction or expulsion of the fetus or child at any stage, from the very beginning of its existence to the age of viability or the time when it can be born alive and survive, and every abortion deliberately produced, unless absolutely necessary to save the life of the mother, is criminal. Even in those desperate cases where such an operation is necessary, it should only be done after a careful investigation and consultation between two or more regularly licensed physicians.

All civilized nations brand this as a most serious, unnatural and revolting crime, and their laws provide for the punishment of the offenders. It is an outrage against God, man and Nature, and leaves a broad trail of death, suffering and moral degradation in its track. Every year thousands of mothers yield up their lives, victims to this dread Moloch and thousands more who do not die at once, drag out a miserable, invalid, childless existence, tortured by remorse and unavailing regrets for what has been done. Doubtless, in the darkness of the night, the forms of their murdered children rise up before their terrified souls, and like the guilty stain of Lady Macbeth, will not disappear, making their lives one long, dark tragedy unilluminated by hope.

We, the physicians and clergymen of Fort Collins, occupying as we do, positions of responsibility because of our peculiar relations with the people, feel that we are in duty bound to express ourselves on this subject.

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| E. STUVER, M.D. | C. M. HAVLAND, M.D. |
| L. W. FEE, M.D. | S. T. QUICK, M.D. |
| G. R. GILBERT, M.D. | A. W. KILLGORE, M.D. |
| B. F. RELIGIOLLE, M.D. | GEO. L. HOEL, M.D. |
| A. W. ROTH, M.D. | REV. J. W. SKINNER. |
| J. J. HAYLEY, M.D. | REV. GEO. P. AVERY. |
| S. C. HAYLEY, M.D. | REV. I. N. MONROE. |
| J. D. KERLIN, M.D. | REV. SAMUEL R. WILLSON. |
| P. J. MCHUGG, M.D. | REV. J. THOMA CROW. |
| W. A. KICKLAND, M.D. | REV. L. C. WOODFORD. |
| J. E. DALE, M.D. | REV. PAUL BURKHARDT. |
| E. L. SADLER, M.D. | |

The Climate of Egypt.

CAIRO, Egypt, March 7, 1906.

To the Editor:—One is much amused at hearing tourists', and especially invalids' criticisms of this climate. Of course, if one comes here with the idea that the sun shines continually, that the air is always dry and warm—neither too warm nor too cool—and that he or she can wear summer clothing during the day and evening, the idea will soon be dissipated.

There are cold days on which the temperature drops to 30° at times, and there are cloudy days with sometimes rain. On the whole, however, one can not growl at this climate. I find the main trouble to be that when the air is cold the indoor life is almost intolerable because there are no heating facilities. In America the houses are always very warm. Small petroleum stoves are really sufficient to make the rooms here quite cosy on the coldest days.

During the summer the days are hot, but generally the evenings are cool. In the beginning of the summer, during the American spring, we have the (Khamseens) "fifty days," in which time the hot sand storms occur. When physicians send patients to Egypt they should advise them to go to Asswan during the months of December, January and February, and to spend the other month of November or March in Cairo—or rather Helwan. Of course this arrangement is very expensive, but to send patients here and allow them to go to upper or lower Egypt as they please is harmful to the patients as well as to Egypt's reputation.

An American rheumatic patient came out this winter and at once went to Asswan, stayed a few weeks, and came back to Cairo in February, stopped at a hotel in the business part of the city, and had rooms on the ground floor looking out on the well watered garden. Of course his rheumatism was benefited!

Visitors to Cairo should be prepared to find no garden of Eden, but they can be much benefited by this beautiful farm-

ing country with the desert its near neighbor. Fresh vegetables and fresh fruits are always obtainable. The people are picturesque and can teach us patience by their "Praise God!", "If God wills!" and "Tomorrow" expressions.

The history of the ancient Egyptians, Greeks and Romans is vividly portrayed by the temples, tombs, forts, etc., and there are also the picturesque Arabic architecture and the museums, rich with the finds of Egyptologists. I add this table of the mean maximum shade temperatures of Cairo (recorded for 18 years), Alexandria (recorded for 21 years), and Asswan (recorded for 4 years). This will show how one can find the warmth and escape the heat and coolness.

| | Cairo. | Alexandria. | Asswan. |
|-----------------|----------|-------------|-----------|
| January | 66-64 F. | cooler | 78-70 F. |
| February | 68-71 F. | cooler | 80-84 F. |
| March | 72-78 F. | cooler | 84-91 F. |
| April | 82-86 F. | cooler | 92-103 F. |
| May | 88-94 F. | | hotter |
| June | 94-96 F. | 81-83 F. | hotter |
| July | 97-98 F. | 84-86 F. | hotter |
| August | 96-93 F. | 87-89 F. | hotter |
| September | 92-88 F. | 86-84 F. | hotter |
| October | 88-84 F. | 83-80 F. | hotter |
| November | 80-73 F. | 77-73 F. | hotter |
| December | 70-67 F. | 70-67 F. | 82-78 F. |

This shows that the climate of Cairo is not bad in March, April, October and November. Asswan is agreeable in January, February and December; and during the summer months Alexandria is quite pleasant. Of course Alexandria is not so dry as Cairo and Asswan.

J. M. KEICHLINE, M.D.

Marriages

REBA LLOYD, M.D., and Charles E. Kump, both of Bridgeton, N. J., March 22.

JAMES RUSSELL BASS, M.D., to Miss Sue Virginia Tilton, both of New Orleans, February 24.

RUSSELL B. CHACHIERE, M.D., to Miss Ethel Ellen Edwards, both of Opelousas, La., March 15.

WILLIAM B. McCASKILL, M.D., Idabel, I. T., to Miss Kitty Adams of Argo, Texas, March 19.

D. F. REEDER, M.D., Paducah, Ky., to Miss Minnie Sargent of Sharp, Ky., at Cairo, Ill., March 17.

WILLIAM H. KIRK, M.D., Amory, Miss., to Miss Nellie Douglass Thomas of Memphis, Tenn., March 8.

WILLIAM TRAY BIVINGS, M.D., Atlanta, Ga., to Miss Helen Earl Randall of New York City, March 15.

TOM B. TODD, M.D., Richards, Mo., to Miss Nell Welborn of Sweet Springs, Mo., at Nevada, Mo., March 15.

LEROY R. STODDARD, M.D., New York City, to Miss Caroline E. Williams of Detroit, Mich., in New York City, March 14.

Deaths

William Turner Bacon, M.D. College of Physicians and Surgeons in the City of New York, 1871; a member of the American Medical Association, American Ophthalmological Society, Connecticut Medical Society, Hartford County Medical Society; formerly president of the Hartford Medical Society; formerly assistant in physiology in the College of Physicians and Surgeons, and curator to the Charity Hospital, New York City; ophthalmic and aural surgeon to the Hartford Hospital; consulting surgeon to St. Francis Hospital; one of the most eminent specialists in diseases of the eye and ear of New England, died at his home in Hartford, Conn., March 16, from kidney disease, after an illness of several years, aged 59.

Robert Ogden Doremus, M.D. New York University, New York City, 1851; a member of the American Medical Association; eminent as a chemist for more than 50 years; assistant to Dr. John W. Draper from 1843 to 1850; professor of chemistry and physics for many years in the College of the City of New York; a frequent contributor to the medical and scientific press; a member of the advisory commission of the department of health of New York City; since 1861 professor of chemistry in Bellevue Hospital Medical College; an expert on poisons; inventor of the system for disinfecting ships which has been in use in New York harbor for 40 years, died at his home in New York, March 22, from arteriosclerosis, after an illness of ten days, aged 81.

Frederick W. Achilles, M.D. University of Iowa, Medical Department, Iowa City, 1874; a member of the American Medical Association; formerly professor of chemistry and secretary of the faculty of the Medical College of Evansville, Ind.; a member of the Indiana State Medical Society, Ohio Valley Medical Society and Vanderburg County Medical Society; a member of the staff of the Protestant Deaconess Hospital; for many years professor of chemistry at the State University, Bloomington, Ind.; for several years assistant United States consul at Marseilles, France, died at his home in Evansville, March 18, a few hours after a fall down a long staircase at his house, aged 65.

Charles Louis Fincke, M.D. Long Island College Hospital, Brooklyn, N. Y., 1899; a member of the American Medical Association; one of the most brilliant young practitioners of Brooklyn; valedictorian of his class; clinical assistant and later associate physician in the Brooklyn Hospital; assistant to the chair of pathology in Long Island College Hospital, and secretary of the Brooklyn Pathological Society, died at his home in Brooklyn, March 19, from septicaemia, after an illness of two weeks, aged 32.

Samuel H. Freeman, M.D. Albany (N. Y.) Medical College, 1846; one of the original members of the old Albany Hospital staff, and for many years president of the board of curators of Albany Medical College; vice-president of the Albany County Medical Society, and a life member of the Medical Society of the State of New York; one of the oldest practitioners of Albany, died at his home in that city, March 15, aged 85, after a long illness.

John Powell Henrv, M.D. College of Physicians and Surgeons in the City of New York, 1881; formerly health commissioner and a member of the board of health of Jersey City, N. J.; a member of the Hudson District Medical Society and the Academy of Medicine, Jersey City, died in a sanitarium near Paterson, N. J., from neurasthenia after a long illness, March 16, aged 48.

A. W. Jones, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1883; a member of the American Medical Association; formerly vice-president of the Louisiana State Medical Society and of the Morehouse Parish Medical Society; a member of the board of health of Morehouse Parish, died in Jones, La., March 16, after an illness of ten days, aged 50.

Alonzo H. Boyer, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1868; for 35 years a resident of Bridesburg, Philadelphia; assistant surgeon of the Two Hundredth Pennsylvania Volunteer Infantry in the Civil War; a member of the Medical Society of the State of Pennsylvania and of the Philadelphia County Medical Society; for many years a member of the local school board, died at his home, March 18, aged 60.

John L. Cleveland, M.D. Medical College of Ohio, Cincinnati, 1868; a member of the American Medical Association; resident physician in the Cincinnati Hospital in 1868 and 1869; for several years a lecturer and professor in the Medical College of Ohio, and a member of the attending staff of St. Mary's Hospital, died at his home in Cincinnati, March 18, from malignant disease, after an illness of two months, aged 64.

Ebenezer J. Tidd, M.D. University of Michigan, College of Medicine and Surgery, Ann Arbor, 1870, of Clarksville, Pa.; a member of the American Medical Association and one of the most prominent physicians of Mercer County; a veteran of the Civil War, died suddenly while in attendance on a patient at Transfer, Pa., March 17, from valvular heart disease, aged 61.

Rolland C. Hodges, M.D. Detroit Medical College, 1878; a fellow of the American Laryngological, Rhinological and Otolological Association; a member of the American Academy of Ophthalmology and Oto-Laryngologic, State Medical Association of Texas and Houston District Medical Society; formerly of Houston, Texas, died at Del Rio, Texas, March 14.

Thomas Farrar Richardson, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1897; passed assistant surgeon in the United States Public Health and Marine-Hospital Service, of New Orleans; an expert in yellow fever, died at the New Orleans Sanitarium, March 19, from typhoid fever, after an illness of two months, aged 34.

Samuel Kent Falls, M.D. McGill University, Medical Department, Montreal, 1878; a member of the American Medical Association; from 1885 to 1892 a member of the faculty of Rush Medical College, Chicago, died suddenly in a street car in Chicago, from cerebral hemorrhage, March 22, aged 55.

Samuel J. Cooper, M.D. Memphis (Tenn.) Medical College, 1871; a Confederate veteran; a member of the Colbert County

Medical Society, and health officer of Colbert County, committed suicide by gunshot at his home in Tusculum, Ala., while suffering from melancholia, March 15, aged 60.

Abner C. Calvin, M.D. Jefferson Medical College, Philadelphia, 1878, of Meadville, Pa., died at the City Hospital in that city, February 24, after an illness of three days, from pulmonary edema due to injuries received in an accident in which he was thrown from his carriage, aged 51.

Taylor M. Snow, M.D. Cooper Medical College, San Francisco, 1876; a pioneer physician of Eastern Oregon; coroner of Baker County, and local physician of the Oregon Railway and Navigation Company for 20 years, died at his home in Baker City, March 6, aged 71.

Everitt Hasbrouck, M.D. New York Homeopathic Medical College and Hospital, New York City, 1865; some-time member of the State Board of Medical Examiners in New York, died at his home in Brooklyn, March 16, from nephritis, after a long illness, aged 66.

Francis Brick, M.D. Cleveland University of Medicine and Surgery, 1861; once vice-president of the Massachusetts Surgical and Gynecological Society, died at his home in Worcester, Mass., March 14, from cerebral hemorrhage, after a short illness, aged 67.

H. B. Smith, M.D. Medical College of Indiana, Indianapolis, 1885, a member of the Indiana State Medical Society and Hamilton County Medical Society, died at his home near Ohio, March 15, after an illness of several weeks, aged 59.

Dennis K. Smith, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1895, formerly of Altoona, Pa., died at his home in Colorado Springs, Colo., March 14, from tuberculosis, after a long illness, aged 40.

Brown A. Bigelow, M.D. Jefferson Medical College, Philadelphia, 1874, a member of the Medical Society of the State of Pennsylvania and the Mifflin County Medical Society, died March 16, at his home in Belleville, Pa., aged 44.

James Grant Gilchrist, M.D. Hahnemann Medical College or Pennsylvania, Philadelphia, 1863, professor of surgery in the College of Homeopathic Medicine of the State University of Iowa, Iowa City, died in that city, March 22.

Arthur H. Davis, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1865, of Philadelphia, a member of the legislature in 1890 and 1891, died in the German Hospital, Philadelphia, March 21, aged 63.

Christian B. Diebold, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1887, of New Orleans, died at his home, March 15, after an illness of three months, aged 42.

Austin M. Cowan, M.D. Eclectic Medical Institute, Cincinnati, 1852, of Valley Falls, Kan., died suddenly at the home of his son-in-law at Topeka, Kan., March 15, from heart disease, aged 77.

Nathaniel F. Hallman, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1862, died at his home in Slatington, Pa., March 18, after an illness of one week, aged 66.

C. E. Bernhardt, M.D. Kansas Medical College, Topeka, a member of the Tulare County Medical Society, died in Deer Creek, Cal., March 10, from pneumonia, after an illness of ten days.

Robert E. Lee Tadlock, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1896, died at his home in La Crosse, Ill., March 15, from typhoid fever, after a long illness, aged 38.

G. E. Sparhawk, M.D. Hahnemann Medical College, Philadelphia, 1853, died at his home in Burlington, Vt., March 14, from senile debility, after an illness of one year, aged 77.

Robert Evans Bromwell, M.D. University of Maryland, School of Medicine, Baltimore, 1850, died at his home in Port Deposit, Md., March 21, after a protracted illness, aged 79.

Thomas L. Catherwood, M.D. Miami Medical College, Cincinnati, 1870, died at his home in Shelbyville, Ill., March 18, from cerebral hemorrhage after an illness of two weeks.

Wylie See Athey, M.D. University of Louisville, Medical Department, 1893, died in San Francisco, December 17, and was buried in Holly Springs, Miss., December 25.

William N. Riley, M.D. Harvard University Medical School, Boston, 1901, died suddenly at his home in Malden, Mass., March 16, from heart disease, aged 26.

Marshall V. Wilson, M.D. (County license, Jackson County, Ind.), 1897, died at his home in Medora, Ind., March 18, after an illness of several weeks, aged 71.

James H. Johnson, M.D. University of Louisville. Medical Department, 1880, died at his home in Round Rock, Texas, March 15, from neurasthenia.

Francis J. Wennerberg, M.D. Harvard University Medical School, Boston, 1893, died from pneumonia, at his home in Boston, March 17, aged 37.

A. A. Chapman, M.D. Long Island College Hospital, Brooklyn, N. Y., 1872, formerly of Lawrenceville, Ga., died recently at his home in Brevard, N. C.

William Eckels, M.D. Jefferson Medical College, Philadelphia, 1837, died at his home in Mechanicsburg, Pa., March 8, from cerebral hemorrhage, aged 73.

W. H. K. King, M.D. Rush Medical College, 1878, died at his home in Carthage, Mo., March 20, from pneumonia, after an illness of one week, aged 61.

Leopold Hirschmann, M.D. Cornell University Medical College, New York City, 1899, died at his home in New York City, March 15, aged 35.

Darius Z. Bowman, M.D. College of Physicians and Surgeons of Baltimore, 1880, died at his home in Reading, Pa., March 18, from erysipelas, aged 51.

Frederick B. McKenney, M.D. University of Buffalo (N. Y.) Medical Department, 1898, died at his home in Varysburg, N. Y., March 17, aged 33.

Herbert Thomson, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1872, died recently at his home in Booneville, Cal.

Miscellany

Quack Advertisements in Great Britain.—The English periodical *Truth* has made a practice of excluding objectionable advertisements from its columns, and the *Medical Press and Circular*, in a recent issue, in referring to a particularly fraudulent case, advises the daily papers to follow the good example. The advertisement in question is that of a charlatan who advertises in the London *Daily News* that he can cure asthma, consumption, chest and stomachic complaints, and claims that he is a specialist of twenty-five years' standing in Brighton, though he offers free advice at an address in London. In commenting on this, the *Medical Press* states that the issue of so costly an advertisement indicates the large sums which are secured thereby. The insertion of such an advertisement in the columns of a daily paper, says the *Medical Press*, makes the editor of the paper *particeps criminis* in the attempt to obtain money under false pretenses, and asks the editor of the paper in question what he has to say in defence of the advertisement. The *Medical Press* also suggests that editors of newspapers exclude from their advertising columns all advertisements which have been blacklisted by *Truth*.

The Journal of the Outdoor Life, which has just entered on its third year and which is the official organ of the National Association for the Study and Prevention of Tuberculosis, is an excellent advocate of fresh air and wholesome life in the prevention and treatment of tuberculosis and other diseases. It is intended for circulation among the laity, and certainly makes interesting reading and will aid greatly in the anti-tuberculosis propaganda. A distinct service which it is rendering is the pointing out of the more common errors into which the health seeker is apt to fall in the following of fads or irrational advice. It advocates competent medical supervision, fresh air, nourishing food and carefully regulated exercise. Among its contributors are the best men in the profession. We are always glad to look over this bright little periodical. It is published at the Adirondack Cottage Sanitarium, Trudeau, N. Y., at \$1 a year, and is not a money-making enterprise.

Research on Spinal Anesthesia.—P. Lazarus of Berlin contributes an article on "Lumbalanesthesia" to the *Med. Klinik* for Jan. 28, 1906. He has found spinal analgesia a welcome relief in a number of cases of intense pain from compression of the spinal cord by a cancer or in the crises of tabes. He thinks that it may also be indicated in spastic paralysis, in tetanus, in paramyoclonia, and similar contractures. Also

it might be found useful to differentiate and treat hysteric, organic, or simulated painful contracture of the legs. A further indication is as a preliminary to mobilization of stiff joints, and for bloodless stretching of nerves. One of his patients, with severe, rebellious sciatica, was completely cured after the sciatic nerve had been stretched three times in eight days under spinal analgesia. In another case a patient with extremely painful ankylosis of the knee after a gonorrheal affection was treated by mobilization of the joint under spinal analgesia, the patient looking on at the manipulations without the slightest pain, three minutes after the anesthetic had been injected into the spinal cavity. Spinal analgesia is particularly useful for this class of cases as the patient is able to make the first attempts to move the formerly painful limb, and thus learns to use it at once, instead of shrinking from using it for fear of possible pain. Neither advanced age nor cachexia contraindicate spinal analgesia. He follows Bier's technic, described in *THE JOURNAL* for May 7, 1904, page 1260. He has been studying on 64 rabbits whether it might not be possible to induce spinal analgesia with some substance less toxic than the standard anesthetics. He found that it was possible to arrest temporarily the sensory and motor conductivity of the spinal cord by inducing a focus of transient edematous infiltration of the spinal cord by dural infusion of saline solutions equivalent to an 8 per cent. salt solution, that is having the same osmotic tension. He found further that intradural introduction of large amounts of fluids is dangerous, and that intradural injection of air is fatal. Infusion of distilled water or of cold fluids causes great pain. Infusion of hypotonic or isotonic saline solutions or of a 25 per cent. solution of urea is indifferent. Infusion of a 10 per cent. salt solution is fatal. Infusion of an 8 per cent. solution of common salt or of magnesium sulphate has an anesthetic and paralyzing action. Spinal anesthesia with magnesium sulphate is more effectual than general anesthesia in case of strychnin tetanus, and is liable to prove a life-saving measure.

Fee Table System Injures the General Practitioner.—In former days professional fee tables were supposed to govern every member of the medical profession, but now, says Dr. D. W. Cathell in the *Medical Times*, owing to the work done by specialists and their consequent excellent reputation, as a body, the size of their fees is no longer controlled by these antiquated fee tables. Each specialist establishes for himself some more or less definite financial policy of his own, and puts his own value on his services, taking care, usually, to charge each patient enough to aid materially in giving him his and his dependents a comfortable support, with some addition for their needs when he is no longer able to work. To-day, therefore, this old fee-table method of computing fees by the visit governs only the general practitioners, and as far as the best interests of these are concerned, they govern them in the wrong direction. Dr. Cathell states that both specialists and general practitioners have cases among the worthy poor, and that they willingly give those who deserve it, "a poor man's bill," but they often get little or nothing, sometimes not even thanks, for very valuable services, occasionally for saving life itself; and that specialists and every general practitioners alike encounter transient, indefinite, chronic or minor cases in which they charge only a meagre pay-by-the-visit fee, whether by the house visit or for services at the office.

When it comes to important and well-marked cases, in which the patients are able to pay full prices, there exists a very wide and very deep chasm between the custom of the two professional bodies, for the specialist, says Dr. Cathell, then justly ignores all details and charges a bulk sum for his services, while the general practitioner, in calculating the amount of his fees for cases often equally or more important, many times involving life itself, unjustly limits himself to counting the number of visits made, with but little or no regard to anything else.

Dr. Cathell calls attention to the fact that the entire population is living under different financial conditions from those of the time when the fee bill was first established, and that

every practitioner should base his charges on professional ability and on the character of the demands made on it instead of on a chalk-mark account of the number of office calls or visits made. He advises every physician in America to make skill and services the basis of all his charges, taking care that the amount named shall be sufficient to cover silently all visits, detentions, distances, etc., because by so doing a physician will enhance his reputation for skill and at the same time get better returns for his work.

The Dust Menace.—For years, says Dr. H. S. Anders, in *Pennsylvania Medical Journal*, I have felt that in fighting the dust evil a most important branch of sanitary work was to be found, especially in the large cities and towns. Public adaptation in this matter is hardly more than a threshold recognition. Street dust, plush-cushion dust in trolley, regular passenger and Pullman cars, damp and dark corner and crack dust in houses, etc., is loaded with pus micrococci, and besides purulent nasopharyngeal, tonsillar, sinus, and bronchial inflammations, may be a threefold factor in pulmonary tuberculosis. First, it may act as a predisposing cause, as a direct physical irritant to the respiratory passages, thus inflaming the mucous membranes and weakening their resistance to bacillary invasion; second, it may carry infection directly by means of dried, fresh tubercular sputum that some ignorant or careless consumptive has recently expectorated; third, it may aggravate tuberculosis by converting an incipient and curable case into one of rapid and virulent destruction of lung tissue because of the addition of pus-producing germs. Pulverized poison added, a mixed infection engendered, and speedy dissolution follows. When will our municipal authorities see clearly, understand fully, and act humanely? How long must the people submit supinely to the present conditions of street dirt, insufficient sprinkling, and infantile methods of cleaning? For the fault is not entirely with rushing automobiles, grinding trolley cars, and unsophisticated Italian street sweepers. Were the dirt removed at night, and the comparatively slight remaining dust kept down during the day by sprinkling as a part of a city's duty to its citizens, these public utilities would incur less justifiable criticism.

The Cold Storage of Undrawn Poultry and Game.—Last year the New York legislature defeated a bill the substance of which was the prohibition of the cold storage of game or poultry in the undrawn state and its subsequent sale to the public. We learn that the authors of last year's defeated bill are about to introduce a similar measure again this year. The defeat of such a measure is only an instance of the strength of the so-called "beef trust." Not content with squeezing the last penny out of the public by their high charge for all the meat that is sold, they actually menace the health of communities by selling undrawn game and poultry which has been left in cold storage for an indefinite period. Undoubtedly a large percentage of the cases of toxin infection which have become so prevalent of late years are directly ascribable to cold-storage poultry.—*Medical Age.*

Source of Girault's Paper on the Bedbug.—In our editorial March 17, 1906, on the bedbug and disease possibilities, we spoke of a pamphlet by A. A. Girault as a publication of the United States Department of Agriculture. The reference we gave was wrong. The paper in question appeared in *Psyché*, Vol. XII, Nos. 3 and 4, June-August, 1905, pp. 61-74. This periodical is published by the Cambridge Entomological Club, which may be addressed in care of the Boston Society of Natural History, Boston.

Aselli.—The cluster of lymphatic glands lying in the mesentery is sometimes called the pancreas of Aselli, or lesser pancreas. These glands were described by Gaspar Aselli, an Italian anatomist, who was born in 1581 and died in 1626. His home was at Cremona. In the year 1622, while professor of anatomy at Pavia, he discovered the lacteals, and wrote a book on the subject.

Dr. Young of Glasgow.—In *THE JOURNAL*, Jan. 6, 1906, page 45, we referred editorially to the author of the article, "Gun-shot Wounds of Peripheral Nerves," as Archibald Young of London. Dr. Young calls attention to the fact that his address is Glasgow, not London.

Book Notices

THE ANIMAL PARASITES OF MAN. A Handbook for Students and Medical Men. By M. Braun. Third enlarged and improved edition, with 294 illustrations. Translated from the German by F. Falcet, brought up to date by L. W. Sambon, M.D., and F. V. Theobald, M.A. Cloth. Pp. 453. Price, \$5.00 net. New York: William Wood & Co.

This is the first English edition of this work, which contains 453 pages. The paper strikes one as rather inferior in quality. The book contains in convenient form an enormous amount of facts and authoritative information concerning the non-bacterial human parasites now of such growing importance not only to physicians living in warm climates, but also to those in temperate and even cold regions. Parasite carriers (mosquitoes, tsetse flies, ticks, etc.) are considered fully. The book is sure of appreciation. In the next edition the author no doubt will revise the section on trypanosoma so as to bring it in better harmony with the results of recent investigations.

PHARMACOLOGY AND THERAPEUTICS. By R. W. Wilcox, M.A., M.D., LL.D. Sixth Edition. Based on the Fifth Edition of White and Wilcox's "Materia Medica and Therapeutics." Cloth. Pp. 1010. Price, \$3.50. Philadelphia: P. Blakiston's Son & Co., 1906.

This is a companion book to White's *Materia Medica and Therapeutics*, but it has less to commend it. On page 10 we find the following: "It is also equally true that the details of the chemical behavior of such substance can be ascertained only by performing the necessary reactions, and the point has therefore been well taken that as there is no prospect at the present time of explaining the latter from its constitution, there is still less hope that much advance will be made in the near future in formulating the laws governing the details of its pharmacological effects." To this we can not agree. Just as the chemical behavior of many substances can be stated with reasonable accuracy from a knowledge of their constitution and relationship, so much advance is being made in the study of the relation between chemical constitution and pharmacologic effect. Another criticism that may be made is that in a book intended as a text-book for use in American schools and colleges there are too many preparations of the British Pharmacopœia—to say nothing of the amount of space devoted to certain proprietary remedies, of which little is known beyond the statements of the manufacturers. On page 33, in speaking of ether, the author has used the practically obsolete term "sulphuric ether." He may be severely criticised for using obsolete or unusual terms, *sal alchembroth*, for example, which tend to confuse the reader. It is to be regretted that so few books designed to be used as text-books for students of medicine possess so little educational value.

SURGICAL TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR AND MASTOID. By S. Oppenheimer, M.D. Illustrated by 46 half-tone Plates, containing 64 figures and 27 key plates, etc. Cloth. Pp. 425. Price, \$6.00. Philadelphia: P. Blakiston's Son & Co., 1906.

This is one of the most important books that has appeared on this subject in the English language. It must, of course be compared with McEwen's classical work and with Whiting's recent publication, but it does not suffer in the comparison, as it is more generally and practically useful than either. McEwen's book is more authoritative and learned, and in reality forms a ground work or foundation for scientific mastoid surgery, and will remain a classic to which we must always turn for counsel, but it does not touch on middle-ear surgery nor on that subject which is of enormous interest to modern otologists, the radical mastoid operation. Therefore, as a practical every-day working book Oppenheimer's production will be more frequently useful to the busy surgeon.

Whiting's artistic book on "The Mastoid Operation," while excellent as far as it goes, makes no mention of the radical operation and proved disappointing to those readers who expected a complete dissertation on the subject from one of Whiting's erudition, skill and experience. We, therefore, reaffirm that Oppenheimer's book, containing, as it does, the necessary anatomy of the temporal bone, the treatment and operative interference of the tympanum, a comprehensive chapter on "Anatomic and Surgical Landmarks," directions for the simple mastoid operations and its complications, minute instructions as to the radical mastoid operation, including most comprehensive descriptions concerning the vari-

ous plastic procedures, together with a wealth of beautiful and plain pictures that clarify the entire subject, will at once assume a position of first importance in the working library of the aural surgeon. The mechanical part of the volume is excellent, and the illustrations can not be too highly commended and they will be appreciated by those who are not well up on their anatomy. An interesting feature of the book is its plain and comprehensive chapters on suppurating middle-ear diseases and their treatment, surgical and otherwise; indeed, the only criticism that can be made on this section of the work is the feeling that the author has devoted a preponderating amount of space to these subjects; still, in these days of tendencies toward radical surgery of all kinds, it is gratifying to note the words of warning and a leaning toward conservatism. The author himself, however, is evidently "torn with conflicting emotions," for quite frequently throughout the book, while dwelling on middle-ear treatment for supuration, and going into minute details concerning ossiculectomy and curettage and emphasizing its importance at great length, he lapses into the prevailing opinion that, after all, intractable middle-ear suppurations are best treated by the radical operation. In this view he will be upheld by the best and most progressive surgeons, for, while conscientious surgeons never desire to rush unnecessarily into operative procedures, yet, considering the mortality of unchecked tympanic suppurations and the inaccessible location in the antrum and cells of most of these diseases, the radical operation is the only logical treatment in a large proportion of such cases. Nevertheless, conscientious and proper middle-ear treatment, followed perhaps by ossiculectomy, etc., should, of course, as recommended by Oppenheimer, be given a faithful and painstaking trial before so serious an operation as a radical mastoidectomy is advised. Success, however, can only be expected in those cases in which the seat of disease is limited to the tympanic cavity, and not to those instances in which necrosis, granulation, etc., have extended backward to the antrum or to the cells, and, as Oppenheimer says on page 9, it should never be forgotten "that the purulent discharge should be looked on as a symptom of the pathologic conditions present and not as the actual disease itself." The author also calls attention to the fact on page 9 that "the order of the discharge can easily be relied on as an indication of necrosed bone unless it is unusually persistent, following careful local cleansing of the tympanic cavity." It may, as he says, be due to "the presence of a retained irritating secretion or of a mass of desquamated epithelium undergoing fatty transformation." On page 185 the very interesting statement is given by Birmingham that the antrum was absent in one skull among one hundred which he examined. This observation can not fail to be of interest to all who frequently perform some form of mastoid operation, as many authors affirm positively that the antrum, though sometimes misplaced, is invariably present. Another interesting statement by Burkner is given on page 186, to the effect that he found congenital dehiscences of the tegmen antri present 167 times in 705 cases. These studies also disclosed the fact that, irrespective of age, the antrum can always be found (when present) inferior to the linea temporalis and superior and anterior to the squamo-mastoid suture.

On page 189 attention is directed to the well-known close contiguity existing between the osseous Eustachian tube and the internal carotid artery, which are separated by a thin shell of bone, which fact is instructive when the surgeon undertakes to curette the tube mouth in the radical operation with either the sharp spoon or bur, and argues in favor of pressing these instruments forward instead of backward toward the artery. On page 239 Oppenheimer states that the radical mastoid operation is not necessary in all cases of chronic purulent otorrhea, as necrotic and other changes in the antrum and cells are not always of sufficient extent to warrant this procedure. In this statement, of course, he will not be contradicted, the only problem to be solved being the existence and extent of the pathological changes of serious character within these chambers. This can easily be done in those cases accompanied by mastoid symptoms, such as pain, tenderness, swelling, temperature, etc., but what of those cases in which the mastoid is quiescent, and in which the only in-

dication is a persistent intractable discharge, which does not yield to suitable middle-ear treatment nor even to an ossiculectomy, and in which the existence of intra-mastoid disease is reasonably certain? Some light may perhaps be thrown on this perplexing question by referring to the opinions of some otologic leaders as quoted by Oppenheimer. Milligan says: "When the suppurative has persisted for twelve months, with careful local treatment for three months without avail, the mastoid should be opened." Luc advises a mastoid operation "for the cure of aural suppurative after operation by way of the meatus has failed." Schwartz operates "as a prophylactic operation to facilitate drainage in incurable fetid suppurative even with no evidence of retention." McEwan advises a radical operation to prevent the danger of future complications in cases where "pyogenic lesions exist in the middle ear or its adnexa which are either not accessible or can not be eradicated through the canal." Kfister advises the radical operation in intractable otorrhea "on the general surgical principle that when a collection of pus is confined within a bony cavity the focus of infection should be freely opened in order that the morbid changes present can be seen and the pathologic tissue thoroughly eradicated." And so these opinions might be repeated and indorsed by otologic leaders throughout the world, the only question being as to when and under what circumstances an aural discharge shall be regarded as intractable, in order to announce the advent of operative mastoid advice. It is hoped that some reasonably accurate data will some day be thrown on this as yet unsettled problem, and that meanwhile the mortality reports of septic intra-cranial lesions may not be allowed to become over large.

On page 254 the rather strange advice is given to commence opening the mastoid cortex over the antrum with a gouge or drill, and then to complete the work with the chisel. On the same page the statement is made that so well-known a surgeon as Blake uses a long broad-bladed drill with which to commence the opening in the cortex. One would suppose that in this day of advanced mastoid surgery such dangerous and inadequate weapons as drills would have been relegated to the receptacle for discarded instruments. No instrument should be used for this operation whose cutting edge cannot be kept under constant observation, as in a bony shell, where the anatomic landmarks are so shifty in their location as is the case in the mastoid bone, there is no telling what the deadly and unseen end of a drill may encounter. This surgical warning is so well understood as to make it seem quite unnecessary and yet the suggestions on page 254 appear to render its utterance quite essential. Oppenheimer himself, on the same page, remarks that "the drill and the trephine are not so safe as the chisel;" if this is true (and it undoubtedly is) then the reviewer would beg to inquire why should we go backward ten or fifteen years and use them? On page 257 the advice is given to use a lead-filled or compressed rawhide mallet for driving the chisels. Of course each surgeon must select his own instruments, but the reviewer would beg to suggest that a lignum vitæ mallet of ample size encased in a partial overcoat of steel is superior to either a lead or a rawhide mallet. A lead mallet is too heavy if large, and too small for convenience if of the proper weight. A rawhide mallet does not strike a firm enough blow, and soon becomes soft and pulpy if boiled a few times. A large steel covered, hardwood mallet strikes a good, firm blow, and is practically indestructible.

On page 264 the author advises (in the simple mastoid operation) that the sure location of the antrum and tympanum be ascertained by passing one probe into the tympanum by way of the meatus, and another probe into the tympanum by way of the mastoid and antral cavities, and making them touch. The reviewer is of the impression that this is a questionable procedure in acute mastoid operation, as he believes it better to leave the tympanic cavity untouched in such operations for fear of injuring the ossicles, which should usually be left alone (except in the radical operation) as they are, of course, important factors in good audition, which we always expect to preserve after the simple operation.

On page 271 the author refers to the valuable qualities of the dental or electric bur in mastoid work. The reviewer believes that there can be no question of the truth of this state-

ment, the only difficulty being in securing a good, strong reliable, ever-ready machine that can be sold at a reasonable price. Jansen of Berlin uses such a machine and certainly no one can witness his operations without being impressed with their great technical beauty. As Oppenheimer says, the round bur is an extremely safe instrument in case the facial nerve, dura or sinus is encountered as its spheroidal form "pushes the tissues ahead without cutting or wounding them."

On page 273 Oppenheimer recommends the complete closure of the post-auricular wound by sutures in the acute mastoid operation, provided the operator is sure that all diseased tissue has been removed. In the first place how can one be sure that all diseased tissue has been removed, and in the second place the reviewer feels quite confident that but few experienced operators believe it wise to suture entirely an acute mastoid wound, as it is tolerably certain that such openings should be gradually healed by drainage and granulation.

Commencing on page 287 and continuing for several pages thereafter will be found a most comprehensive description of the pure mastoid operation as devised by Stacke. While this operation is now but little used, having been justly superseded by the more useful procedure called after the joint name of both Stacke and Schwartz, or usually denominated by the shorter cognomen of the "radical operation," yet a clear description of Stacke's operation as given by Oppenheimer, is not only interesting and rather unusual, but also useful, as it may, in rare cases of extreme forward displacement of the sigmoid sinus, become necessary to transpose what was intended to be a Stacke-Schwartz operation into a Stacke operation, and for this emergency the surgeon should always be prepared. The reviewer is convinced that the consensus of opinion at the present time is strongly against the performance of the pure Stacke operation, as a primary procedure for the radical cure of purulent otitis. The operation should be commenced as the well-known Stacke-Schwartz procedure and finished as such unless an extreme forward displacement of the sinus is found rendering such an operation impossible. The Stacke-Schwartz operation should then be abandoned and the antrum entered by way of the meatus and tympanum as suggested by Stacke.

On page 290 the author advises that after the posterior and superior walls of the cartilaginous meatus have been separated from their osseous attachments by a narrow periosteotomy, that the inner portion of the cartilaginous meatal tube be cut across close to the tympanum by a small knife. It has been the reviewer's experience and observation that this is never necessary as the cartilaginous meatus can be thoroughly and completely loosened by a narrow periosteotomy, and then easily released from its osseous bed by a little firm traction without the use of the knife at all.

On page 297 reference is made to a method of loosening the cartilaginous meatus, which should certainly be condemned. The author says that an incision may be made "in the upper posterior wall of the meatus, commencing at the annulus tympanicus, and from within outward; a like incision is then made along the lower part of the meatal wall, parallel and opposite to the first incision, and the flap of tissue thus included between these two incisions is separated from the osseous wall and removed with scissors, so that the posterior and superior walls of the canal are thus exposed." The author himself admits in the next line that "this method may, however, seriously interfere with any plastic operation that may be desired." This objection is certainly valid and should be a sufficient reason for not even mentioning the method as the plastic procedure following the radical operation is certainly of the utmost importance for its success, and the amputated meatal tissue thus wasted by the plan referred to by the author is the very essential tissue that will subsequently be imperatively demanded.

On page 309 will be found a timely note of warning on too great freedom in the production of unnecessary traumatism of the auricular cartilage for fear of producing perichondritis, and with it the dreadful deformity which follows. To one who has never produced this deformity this warning may seem superfluous, but to one who has met it in his own practice precautions of this character will appeal with peculiar directness.

Commencing on page 310 will be found plain and minute descriptions of the primary skin grafting methods at the time of the mastoid operation, as practiced by Dench and others; and commencing on page 333 will be found equally comprehensive directness as to the methods of the secondary grafting procedures of Ballance and others performed in from seven days to three weeks after the original operation by opening the wound, placing the grafts and reclosing the incision. As grafts applied either at the mastoid operation or later, are unquestionably necessary in some cases, these lucid descriptions of Oppenheimer are both timely and useful and should be carefully considered.

On page 330 is mentioned the method of using the Gelle saw in removing the upper, posterior wall of the osseous meatus, for the purpose of avoiding the facial nerve and horizontal semicircular canal. This fine, flexible saw is introduced by a small wire which passes through the antrum into the tympanum and is drawn out through the meatus. The two ends of the saw are then held by the two hands of the surgeon, and by a to and fro movement the bridge is cut away. This method has never been witnessed by the reviewer, but it appeals to him as being a procedure that is at least worthy of a trial. The reviewer can not refrain from rather enthusiastically praising the printed descriptions and beautiful pictures of the various plastic and flap operations so well described and depicted in the latter portion of this volume. They certainly are most excellent and unusual, and should be carefully studied by all who do mastoid surgery. The same praise may be given unreservedly to the last chapter of the book on the "After Treatment of Mastoid Operations," which is a most important subject and one which is frequently neglected by authors, and yet one that is absolutely essential to the surgeon who is looking for the best ultimate results.

On page 394 will be found some very interesting and encouraging statistical figures on the result of the radical operation on hearing, about which much uncertainty prevails in the minds not only of general practitioners but of aural surgeons as well. It seems that Grossman has compiled the records of the after history of 216 cases of radical mastoid operations, and has found that with an intact labyrinth about 48 per cent. of the patients showed an improvement of hearing, in about 20 per cent. there was no change, and in about 31 per cent the hearing power was diminished. This shows, therefore, that in about 68 per cent. of the cases the function of audition is either improved or unimpaired. This is certainly most encouraging to the operator and to the patient, especially when it is considered that the operation is indicated in cases of intractable aural suppuration in order to eliminate a vital menace and that the hearing power must take second rank as a prognosticating consideration.

The reviewer again begs heartily to indorse Dr. Oppenheimer's timely and excellent work and to recommend it not only to all otologic surgeons but to general practitioners as well, believing that the book can be advantageously and profitably read and studied by both.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

ATTENDING CHILDREN AFTER ATTENDING ERTSIPELAS.
ORLANDO, OKLA., March 17, 1906.

To the Editor:—Is it safe to go at once into a case of labor, after discharging a case of erysipelas, provided the accoucheur thoroughly sterilizes himself and his clothing, or should one wait a few days? I practice in the country, and have just been in two cases of erysipelas for the past two weeks, discharging the last one to-day. I am expecting several confinements that may come off any time after this writing, and I wish to know if I take a bichlorid bath, including my hair, and change my underclothing and expose my outer clothing to sulphur fumes for six or eight hours in a closed room will I be safe in going into these labor cases immediately thereafter, or should I wait a few days, and if so, how long?

Wm. H. WALKER, M.D.

ANSWER:—When a physician has charge of a case of erysipelas, superficial fever, pyemic abscess or other infection the degree of contamination of his body and clothes depends much on his method of

handling the case of infection. He may contaminate his clothing by bringing it in direct contact with the diseased body or its secretions or indirectly by contaminating his hands and then handling his clothes. If he carefully avoids contaminating his clothes by protecting them with a large apron and by disinfecting his hands immediately after contamination before touching any part of his clothing he will avoid a good share of the danger from infectious cases. Likewise the contamination of the body of the physician may be avoided to a considerable extent. He should not remain in close proximity to the patient longer than is necessary. He should especially avoid getting his hair or beard contaminated. He should protect his hands while dressing abscesses, etc., with rubber gloves. In case he does contaminate his hands he should disinfect them at once, and not leave the contamination material long in contact with the skin. If these precautions have not been taken he may assume a thorough contamination of himself and his clothes. Will such a thorough cleaning as our correspondent specifies be sufficient to remove all pathologic germs? There is no question that the clothes can be rendered safe. The great danger is in the hands, which have been especially contaminated. Probably no combination of mechanical and chemical disinfection can be devised that in the course of 10 to 20 minutes can certainly effectively sterilize the badly contaminated fingers. Here three or more efforts at disinfection separated by an interval of several hours is desirable just as "fractional sterilization" in the laboratory is necessary. In cases of great emergency a thorough change of clothes and a hot bath, including a head bath and the most careful possible cleaning of the hands, with the use of rubber gloves, are justifiable. The danger occurs in the failure to carry out these rules with an "aseptic conscience."

FORMULA FOR NOBLE'S ENEMA.

S. C. asks for "Noble's formula for enema." This was published by Dr. C. P. Noble of Philadelphia, several years ago, and was called a purgative enema. Originally, it consisted of magnesium sulphate, 2 ounces, glycerin 2 ounces, turpentine $\frac{1}{2}$ ounce, and water enough to make 4 ounces. This enema was recommended for use when there was difficulty in securing a movement of the bowels after abdominal sections. Now, as a rule, more water is used; at present, enough to make half a pint, or even a pint, and it is given through a high rectal tube. Dr. Noble states that this formula and enemas of a solution of alum are the two which have given him the most positive results in cases of parietic bowel.

THE DOCTOR'S THREE FACES.

NORTH YAKIMA, Wash., March 17, 1906.

To the Editor:—Please send me a copy of the Latin verse referring to the doctor as a god, an angel and a devil; also the translation. I think that this appeared in THE JOURNAL about two years ago, but I have no copy of THE JOURNAL of that time.

CHARLES E. KEELER, M.D.

ANSWER.—Our correspondent evidently refers to an answer to a similar query published in this department, April 16, 1904, p. 1033. The epigram in question is credited to Enrius Cordus, a physician of the early part of the sixteenth century. It is as follows.

Tres medicus facies habet; nam quando rogarit
Angelem mox est, cum juvet, ipse Deus.
Post ulcitrato, poscit sua premia, morbo
Horridus apparet; terribilisque Satan.

This may be very freely translated to read:

Three faces has the doctor; when first sought
An angel's—and a God's, the cure half wrought;
But when the cure complete he seeks his fee
The devil looks less terrible than he.

QUININ AS A SPECIFIC IN PNEUMONIA.

ORANGE, N. J., March 18, 1906.

To the Editor:—I was interested in reading your editorial in THE JOURNAL, March 17, concerning quinia as a specific in pneumonia. I wonder if it is generally known among American physicians that in the last few years digitalis has been largely used in Europe for the same purpose. Traube and Rebol studied the power of this drug to render the lung tissue anemic, when given in large doses, but a practical application was lacking till Petresco and Maragliano in Italy began to use digitalis on an extensive scale with excellent results. Experiments showed a decidedly deleterious effect on pneumonia toxins; and in cultures *in vitro* the development of Fränkel's diplococcus was totally prevented. The average dose of digitalis is from 8 to 12 grams in three or four days, the treatment being then suspended owing to the cumulative properties of the drug. An improvement in the patient's condition generally begins on the second day, the pulse becoming less rapid. In rare cases, intolerance is manifested by irregularities of the pulse, nausea, vomiting and persistent diarrhea. Prescriptions generally include infusion of digitalis, aromatics, and a syrup. I should be very glad to hear whether or not any of your readers have had any experience in this line. C. D. MARTINETTI, M.D.

ANSWER.—In the editorial referred to, we made specific mention of Petresco and his use of digitalis. Numerous articles on the treatment of pneumonia with digitalis can be found if one takes the trouble to go back over the literature of the last fifteen years,

for Petresco wrote as far back as 1891 (*Therapeutische Monatshefte*, February, 1891). The treatment has been tried by many clinicians in many lands, and the results have not proved Petresco's claim for large doses of digitalis as a routine and nearly specific plan of medication in pneumonia. By consulting the *Index Medicus* or our own Index of Current Medical Literature one may learn that the digitalis treatment is old and that the remarkable claims made for it can not be substantiated.

OPPOSITION TO THE SECURING OF PURE FOOD LAWS.

CAVE-IN-ROCK, ILL., March 23, 1906.

To the Editor:—I hand you herewith a lost sheep which has wandered back close to home and jumped into my premises this morning. As you will see by the envelope, it traveled incognito, and it makes no difference where it goes just so it goes somewhere, so I refer to you for identification. I call it a "What Is It."

ANSWER.—The "What Is It?" enclosed by Dr. W. J. J. Paris is a reprint of an article entitled "The Wholesale Poisoning Scare," by R. G. Eccles, M.D., of New York City. It is a reply to an excellent paper which appeared in the *Medical Fortnightly* last October, written by Dr. C. F. Wahner, Ft. Madison, Iowa. Evidently, something has been broken loose in regard to this and several other matters that relate to preservatives, etc., for Eccles' paper appeared last November and is now reprinted and is evidently very widely circulated, for we are receiving copies of it from all parts of the country. The question arises: "Who pays the freight?"

State Boards of Registration

COMING EXAMINATIONS.

UTAH State Board of Medical Examiners, Salt Lake City, April 2. Secretary, R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, April 2-3. Secretary, Ancel Martin, Phoenix.

CALIFORNIA Board of Medical Examiners, San Francisco, April 2-3. Secretary, Charles L. Tisdale, San Francisco.

IDAHO State Board of Medical Examiners, Pocatello, April 3. Secretary, J. D. Conant, Jr., Genesee.

MONTANA Board of Medical Examiners, Senate Chamber, the Capitol, Helena, April 3. Secretary, William C. Riddell, Helena.

NORTH DAKOTA State Medical Examining Board, Grand Forks, April 3. Secretary, H. M. Wheeler, Grand Forks.

OHIO Board of Registration and Examination, State House, Columbus, April 3. Secretary, D. N. Kinsman, Columbus.

MINNESOTA State Board of Medical Examiners, State Capitol Building, St. Paul, April 3-5. Secretary, O. E. Linjer, Minneapolis.

RHODE ISLAND State Board of Health, State House, Providence, April 5. Secretary, Gardner T. Swarts, Providence.

GEORGIA Medical Examining Board (Regular), the Capitol, Atlanta, first week in April. Secretary, E. R. Anthony, Griffin.

ARKANSAS State Board Medical Society, Little Rock, April 10. Secretary, J. P. Runyan, Little Rock.

MISSOURI State Board of Health, Barnes Medical College, St. Louis, April 10-12. Secretary, J. A. B. Adcock, Warrensburg.

WEST VIRGINIA State Board of Health, Parkersburg, April 10-12. Secretary, H. A. Barbee, Point Pleasant.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, D. C. April 12. Secretary, William C. Woodward, Washington, D. C.

MISSOURI State Board of Health, University Medical College, Kansas City, April 16-18. Secretary, J. A. B. Adcock, Warrensburg.

ILLINOIS STATE BOARD OF HEALTH, Northwestern University Building, Chicago, April 18-20. Secretary, J. A. Egan, Springfield.

Oklahoma December Report.—Dr. J. W. Baker, secretary of the Territorial Board of Medical Examiners, reports the written examinations held at Guthrie, Dec. 27, 1905. The number of subjects examined in was 10; total number of questions asked, 90; percentage required to pass, 66.6 in each branch. The total number of candidates examined was 17, of whom 8 passed and 9 failed. The following colleges were represented:

| | PASSED. | Year Grad. | Per Cent. |
|--|---------|------------|-----------|
| Eclectic Med. Univ., Kansas City..... | (1905) | | 68 |
| University of Missouri..... | (1905) | | 76 |
| Rush Med. Coll..... | (1904) | | 76.5 |
| University of Iowa..... | (1903) | | 72.6 |
| Denver & Gross Coll. of Med..... | (1903) | | 74.8 |
| University of Nashville..... | (1896) | | 78.8 |
| Medico-Chirurgical Coll., Kansas City..... | (1903) | | 74.3 |
| Columbian University..... | (1902) | | 92.7 |
| | FAILED. | Year Grad. | Per Cent. |
| Keokuk Coll. of P. & S..... | (1904) | | 60.8 |
| Rush Med. Coll..... | (1889) | | 70.1 |
| Vanderbilt University..... | (1905) | | 67.6 |
| Keokuk Med. Coll.*..... | (1898) | | |
| College of P. & S., St. Joseph, Mo..... | (1884) | | 59.8 |
| Physio-Med. Coll., Illinois..... | (1897) | | 50 |
| College of P. & S., St. Joseph..... | (1882) | | 65 |
| University Med. Coll., Kansas City..... | (1905) | | 64 |
| University of Iowa..... | (1881) | | 70 |

* Dropped out before finishing last two subjects.

Rhode Island January Report.—In the report of the examination held at Providence in January, 1906, published in THE JOURNAL, Feb. 10, 1906, page 455, among the failures was one candidate stated to be a graduate of the Medico-Chirurgical College, Pennsylvania. Later reports show that this man was an undergraduate.

Washington January Report.—Dr. C. W. Sharples, secretary of the State Medical Examining Board of Washington, reports the examination held at Spokane, Jan. 2-4, 1906. The number of subjects examined in was 15; total number of questions asked, 100; percentage required to pass, 75; graduates over 10 years, 70. The total number of candidates examined was 73, of whom 53 passed and 20 failed. The following colleges were represented:

| | PASSED. | Year Grad. | Per Cent. |
|--|----------------------------------|------------|-----------|
| University Coll. of Med., Virginia..... | (1905) | 84 | 82 |
| Alexander University, Helsinki, Finland..... | (1897) | 82 | 80 |
| University of Virginia..... | (1900) | 84 | 82 |
| Barnes Med. Coll..... | (1903) | 79, 81 | 82 |
| University of Michigan..... | (1902) | 78, 83, 85 | 82 |
| Howard University..... | (1902) | 85 | 82 |
| Rice and Coll..... | (1896) 85; (1900) 82; (1901) 85; | (1905) 81 | 82 |
| College of P. and S., San Francisco..... | (1905) | 84 | 82 |
| Johns Hopkins University..... | (1903) | 85 | 80 |
| College of P. and S., New York..... | (1897) 75, 80; | (1904) 80 | 80 |
| McClint University..... | (1897) 75; | (1905) 80 | 80 |
| University of Pennsylvania..... | (1897) 75; | (1905) 80 | 80 |
| University School of Med., Boston..... | (1902) | 75 | 75 |
| Illinois Med. Coll..... | (1903) 90; | (1904) 86; | (1905) 76 |
| Northwestern University..... | (1904) 75, 87; | (1905) 76 | 76 |
| University of Toronto..... | (1903) | 77 | 75 |
| Chicago Homeo. Med. Coll..... | (1902) | 85 | 85 |
| Jefferson Med. Coll..... | (1894) | 81 | 81 |
| Marion-Sims Beumont Med. Coll..... | (1900) | 75 | 75 |
| Georgetown University..... | (1898) | 80 | 80 |
| College of P. and S., Keokuk..... | (1881) 70; | (1905) 75 | 75 |
| Missouri Med. Coll..... | (1897) 81; | (1900) 81 | 81 |
| University of Minnesota..... | (1905) | 85 | 85 |
| Milwaukee Med. Coll..... | (1897) 81; | (1900) 81 | 81 |
| Washington University..... | (1904) | 82 | 82 |
| University of Southern California..... | (1900) | 80 | 80 |
| Western Pennsylvania Med. Coll..... | (1905) | 91 | 91 |
| Cornell University..... | (1899) | 79 | 79 |
| American Med. Miss. Coll..... | (1897) | 75 | 75 |
| Kentucky School of Med..... | (1897) | 80, 90 | 80, 90 |
| College of P. and S., Chicago..... | (1904) | 75 | 75 |
| Hospital College of Med., Leipzig..... | (1896) | 79 | 79 |
| University of Strasbourg..... | (1896) | 79 | 79 |
| Medico-Chirurgical Coll., Kansas City..... | (1905) | 81 | 81 |

| | FAILED. | |
|---|---------|------|
| Bennett Med. Coll..... | (1874) | 59 |
| Dallas Medical College..... | (1903) | 41 |
| Marland Med. Coll..... | (1904) | 70** |
| Omaha Med. Coll..... | (1882) | 62** |
| University of Buffalo..... | (1901) | 75 |
| Medical School of Maine..... | (1887) | 65 |
| Rush Med. Coll..... | (1871) | 53 |
| College of P. and S., Indianapolis..... | (1897) | 68 |
| College of P. and S., Cleveland..... | (1900) | 66 |
| Detroit Coll. of Med..... | (1898) | 66 |
| Boston Univ. School of Med..... | (1882) | 61† |
| University of Michigan..... | (1898) | 72† |
| Kansas Med. Coll..... | (1901) | 72† |
| University of Illinois..... | (1904) | 72† |
| Trinity Med. Coll., Toronto..... | (1898) | 72 |
| Marion-Sims Beumont Med. Coll..... | (1886) | 66 |
| Grass Med. Coll..... | (1873) | 51† |
| University of Louisville..... | (1905) | 65 |
| Meharry Med. College..... | (1904) | 72† |
| College of P. and S., Cleveland..... | (1885) | 66 |
| University of Iowa..... | (1885) | 66 |

*Part of examination papers lost and exact grade not assignable.

†Second failure.

**Third failure.

††Fourth failure.

†††Fifth failure.

The following questions were asked:

MEDICAL JURISPRUDENCE AND PREVENTIVE MEDICINE.

1. Name one or more conditions in which a doctor could be held liable on account of errors in (a) diagnosis, (b) surgery, (c) obstetrics. 2. Give the signs of corrosive poisons before and after death. 3. In case of a homicidal maniac, what evidence can be obtained from blood? Give the method of examination and findings. 4. Suppose a new-born baby were found dead and infantile death had not been named. 5. What is understood in the law by the term "negligence"? 6. What means should be used to prevent poisoning among workers in lead? 7. Name the manner of dissemination and "infection" of Asiatic cholera. 8. Name the cause and means of prevention of tuberculosis. 8. Name the cause and means of dissemination of Asiatic cholera in the prophylaxis of infectious disease, specifying two chemical and two physical means. 10. What means should be taken to secure a pure milk supply? Name the essential requirements in the preparation of this product that amount of solid material and the presence of these bacteria per c.c. that indicates danger and impurities. Name the dangers of an impure supply.

GYNECOLOGY AND OBSTETRICS.

1. Give the sequelae of gonorrhea in the female. 2. Give in a concise statement your method of examining the female pelvic organs. 3. Enumerate the different uterine displacements. Give the cause of each and a method of correcting one of them. 4. Define ectopic pregnancy. Show how it is indicated and give method of performing same. 5. What is atresia vaginae? Give causes and treatment.

6. Draw a diagram of the female pelvis at the superior straight, showing the diameters and giving the measurements. 7. Give your method of applying forceps. State when indicated. 8. How do you treat a retained placenta? Give the dangers arising from the same. 9. What changes in the symptoms of pregnancy occur on the death of the fetus? 10. Describe the influence of pregnancy on cardiac lesions.

ANATOMY AND PHYSIOLOGY.

1. Name the muscles which move the shoulder joint, giving their origin, insertion and nerve supply. 2. Describe the peritoneum and its folds and the abdominal organs. 3. What vessels unite to form the portal vein? Into what does it divide? How does blood from portal vein reach the heart? 4. Give the distribution and function of the fascia lata. 5. Give the origin, course and distribution of the sciatic nerve. 6. Give the origin, course and distribution of the leg? 7. Name the bones of the ankle and give their articulations. 8. Give the elimination and distribution of the brachial plexus. 9. Describe the elimination of urine. 10. Give the physiology of the perception of light. 11. Describe in detail the difference between inspired and expired air. 12. Describe in detail the condition of the blood before and after passing through the lungs, and give the physiology of the alteration. 13. Give the physiology of reflex action. 14. Describe the digestion of fat. 15. Describe the development of a red blood-cell.

CHEMISTRY AND TOXICOLOGY.

1. Define acids, bases, salts and metals. 2. State the composition of atmospheric air. What is understood by humidity and property? 3. Compare common with oxygen as to occurrence and property. 4. What is marsh gas? Where is it found in nature? Give its chemical formula. 5. Give the chemical formula for (a) plaster of Paris, (b) copperas, (c) Epsom salts, (d) Glauber's salt. 6. What are the symptoms of strychnine poisoning? 7. Give the symptoms of poisoning by chloral hydrate poisoning. 8. What is one physiological action of arsenic? Give the symptoms of poisoning by arsenic. 9. Give the symptoms of poisoning by methyl alcohol? 10. Give the symptoms of poisoning by morphine poisoning. 11. Give the symptoms of poisoning by opium poisoning.

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

1. (a) What are the four cardinal indications of inflammation? (b) Give process of and termination of simple inflammation. 2. Describe through its various stages the structural changes of the spinal cord in typhoid fever. 3. Differentiate: Fatty infiltration and fatty degeneration. 5. Name and describe two varieties of cancer found in the stomach. 6. Give the microscopic structure of the parotid gland. 7. Define a Malpighian corpuscle. Give a description of the same. Name and briefly describe as to growth and function of the same. Name five varieties of bacteria known to be pathogenic to man, and name disease or diseases with which each kind is associated. 9. Describe step by step a satisfactory method of staining suspected bacilli for tubercle bacilli. 10. What is Widal reaction? Give the method of applying and its diagnostic value.

PRACTICE OF MEDICINE AND DISEASES OF CHILDREN.

1. Give symptoms, diagnosis and prognosis of bubonic plague. 2. Give etiology, diagnosis and prognosis of common lochia. 3. Give diagnosis of pneumonia. 4. Give treatment of hydropneumothorax and pyopneumothorax. 5. Give symptoms, diagnosis and prognosis of acute cholangitis (non-surgical). 6. Give etiology, symptoms and treatment of exophthalmic goiter. 7. Give etiology, symptoms and treatment of acute tonsillitis. 8. Give symptoms, diagnosis and treatment of acute tonsillitis. 9. Give symptoms, diagnosis and treatment of hereditary pernicious anemia. 10. Give diagnosis and treatment of syphilis. 11. Give capacity of stomach (food) of a child's stomach at birth, two, three, six months, six months and eighteen months. 12. Give symptoms, diagnosis, prognosis and treatment of acute eczema. 13. Give symptoms, diagnosis, prognosis and treatment of acute eczema of face in infants. 14. Give diagnosis and treatment of acute eczema of face in infants. 15. Give etiology and treatment of acute vulvitis in children.

MATERIA MEDICA AND THERAPEUTICS.

1. How do straphanthus and digitalis differ in physiologic action? Name the dose of each. 2. What are the physiologic actions of opium? Name its incompatibles and its antidote. 3. Give the official preparations of rhubarb and their doses. 4. Give the active principal of scammony. 5. What are the preparations of opium and their doses? (b) Of what is nuxvomica composed of opium and its dose? 6. Give the action of belladonna, and what are its preparations? 7. Explain the action of belladonna, and what are its preparations? 8. What is the action of belladonna, and what are its preparations? 9. What are counter-irritants? Explain (b) Fowler's and the rationale of their use in disease. Enumerate four in the order of efficiency. 10. Give the method of elimination and the end product of (a) ether, (b) salol, (c) loid of potash, (d) methylene blue, (e) cells.

NERVOUS DISEASES AND DISEASES OF THE EYE AND EAR.

1. Name two organic diseases of which Argyll-Robertson pupil is a frequent and important diagnostic symptom. 2. Name three forms of strabismus. 3. Give the conditions of the lower extremities. 4. Name the conditions of the lower extremities. 5. If a patient complains of a pain in his head, dizziness and vomiting, all of which symptoms had existed for two or three months, what condition is the tongue directed when protruding, and explain why. 5. Give the prognosis of (a) brain tumor, (b) facial paralysis, (c) acute chorea, (d) acute anterior poliomyelitis, (e) cerebral palsy of infancy, (f) acute meningitis, (g) acute encephalitis, (h) acute encephalitis, (i) acute encephalitis. 6. By what lesion of the eye can a diagnosis of chronic nephritis be made? 7. Give the etiology, symptomatology and diagnosis of trachoma, and give the method of treatment. 8. (a) What is chalazion and give its treatment? 9. Name three diseases of the eye and auditory canal and their respective treatment. 10. Enumerate the instruments that the general practitioner should have for examining the ear, and describe the method of examination and the appearance of the parts in health.

SURGERY.

1. What method would you employ in the treatment of talipes in an infant? At what age would you begin? 2. Give symptoms and diagnosis of an impacted fracture of the neck of the femur, including in detail all the landmarks employed in the differential diagnosis. 3. Give etiology and treatment of an ununited fracture of a long bone. 4. Name types of fistula in ano, and describe the various methods of treating the same. 5. Give symptoms, diagnosis, prognosis and treatment of fracture of the base of the skull. 6. What are the more common accidents of anesthesia, and how would you combat them? 7. Name three types of sarcoma. Give the more common location of each and the general characteristics of one only. 8. Give in detail the treatment of strabismic keratitis. 9. Give the etiology, pathology and treatment of varicose ulcers. 10. (a) Give the differential diagnosis between chancre, chancroid and herpes preputialis. (b) Give in detail the proper treatment of syphilis.

HOMOEOPATHIC MEDICAL MATERIA.

1. Define polychrest, potency, dilution, trituration. 2. Differentiate between phytolacca and kalmi bich. In angina faucium. 3. Select three remedies useful in cholera infantum. Give symptoms calling for each. 4. Give prominent symptoms of baptisia, rhus, bryonia, and gelsemium in typhoid fever. 5. Differentiate the heart symptoms of digitalis, cactus grand, spigella, and kalmia lat. 6. Differentiate the gastric symptoms of ipecac, antimoniom tart., and arsenicum. 7. Give mental symptoms of each of the following remedies: Stramonium, hyoscyamus, ignatia, aurum, calcarea carb. 8. Select three remedies useful in dysmenorrhoea. Give symptoms calling for each remedy. 9. Differentiate the rheumatic symptoms of rhus, bryonia, colchicum. 10. Differentiate the skin symptoms of apis, rhus and silica.

ECLECTIC MEDICAL MATERIA AND THERAPEUTICS.

1. Classify the agents acting on the respiratory tract, and name three of each class. 2. Name five agents to act on the stomach, and give the properties of each agent named and the indication for its use. 3. Name three agents that influence the pancreas, liver and intestines, specifying a stimulant and a relaxant for each. 4. What agents influence the character of the blood? Name at least six. 5. What remedies would you use in treating a case of spermatorrhoea and nocturnal emission? What remedies would you use in chlorosis? 6. Name the agents you would use in expelling oxyurias vermicularis to obtain their ultimate extinction. 7. Give the treatment for an aggravated case of bronchitis with profuse expectoration, and also for one in which there is a dry and irritable cough. Give in detail the treatment of cerebrospinal meningitis. 9. What means and agents would you employ in treating a case of chronic articular rheumatism? What results would you expect? 10. Give a brief synopsis of treatment of lobar pneumonia, naming all the agents you would use.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending March 24, 1906:

Hall, John D., asst.-surgeon, retired from active service, March 17, 1906.

Chamberlain, W. P., asst.-surgeon, having reported arrival at San Francisco, Cal., will proceed to and take station at Jackson Barracks, Va., for duty.

Little, Wm. L., asst.-surg., relieved from duty at Jackson Barracks, La., and ordered to Fort Sam Houston, Texas, for duty.

Carswell, R. L., asst.-surgeon, having reported his arrival at San Francisco, Cal., will proceed to and take station at Depot of Recruits and Casuals, Fort McDowell, Angel Island, Cal.

Gapen, Nelson, asst.-surgeon, relieved from duty at Depot of Recruits and Casuals, Angel Island, Cal., and ordered to Columbus Barracks, Ohio, for duty.

Carswell, R. L., asst.-surgeon, granted 30 days' leave of absence. Carroll, James, asst.-surgeon, detailed to represent the Medical Department of the Army at the annual meeting of the Louisiana State Medical Society, New Orleans, La., from May 8 to 10, 1906.

Gandy, Charles M., surgeon, retired from duty at Fort Wayne, Mich., and ordered to West Point, N. Y., for duty, to relieve Lieut.-Colonel H. O. Farley, deputy surgeon-general.

Farley, H. O., deputy surgeon-general, relieved from duty at U. S. Military Academy, West Point, N. Y., and ordered to the Philippine Islands, where, on arrival, he will report to commanding general, Philippine Division, for assignment to duty.

Hammond, William G., dental surgeon, relieved from duty in the Philippine Division and ordered to the United States on the first transport after July 1, 1906.

Long, Stephen M., contract surgeon, left San Francisco, Cal., on leave of absence for one month.

McNulty, Wm. W., contract surgeon, ordered from Fort Trumbull, Conn., to Fort Terry, N. Y., for temporary duty.

Suzes, Frank, contract surgeon, granted leave of absence for two months.

Wright, William H., contract surgeon, granted an extension of seven days to his leave of absence.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending March 24, 1906:

Zalesky, W. J., asst.-surgeon, detached from the *Yankee* and ordered to the *New York*.

Campbell, P. E., asst.-surgeon, detached from the *Newport*, and ordered home to wait orders.

Proven, E. M., P. A. surgeon, orders of March 5 revoked; detached from the Naval Medical School, Washington, D. C., and ordered home to wait orders.

Grieve, C. C., asst.-surgeon, detached from the *Fralie* and ordered to the *Winifred*.

Flint, J., asst.-surgeon, ordered to the *Franklin*.

Cohn, I. F., asst.-surgeon, ordered to the Naval Hospital, Norfolk, Va.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending March 21, 1906.

Austin, H. W., surgeon, granted four months' leave of absence, from March 28, 1906, with permission to go beyond sea.

Young, G. B., P. A. surgeon, directed to report to Asst.-Surgeon General W. J. Pettus, chairman of board of examiners, April 2, 1906, at Washington, D. C., to determine his fitness for promotion to grade of surgeon.

Jickes, H. W., P. A. surgeon, leave of absence granted for two days from March 16, 1906, revoked.

Lavinder, C. H., P. A. surgeon, relieved from duty at Stapleton, N. Y., and directed to proceed to Detroit, Mich., and assume temporary command of service during the absence of Surgeon H. W. Austin.

Bogges, J. S., asst.-surgeon, relieved from duty at Cape Charles Quarantine Station and directed to proceed to Stapleton, N. Y., reporting to the medical officer in command for duty and assignment to quarters.

Collins, Geo. L., asst.-surgeon, relieved from duty at Reedy Island Quarantine Station and directed to proceed to Cape Charles Quarantine Station and assume command of the service.

Long, H. D., asst.-surgeon, granted leave of absence for seven days from March 10, 1906, under paragraph 191 of the regulations.

de Valin, Hugh, asst.-surgeon, relieved from duty at Baltimore, Md., and directed to proceed to Reedy Island Quarantine Station, reporting to the medical officer in command for duty and assignment to quarters.

Primrose, R. S., acting asst.-surgeon, granted leave of absence for 30 days, from March 18, 1906.

McKay, Malcolm, pharmacist, granted one day's leave of absence.

BOARD CONVENE.

A board of medical officers was convened to meet in Baltimore, Md., March 21, 1906, for the physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon L. L. Williams, chairman; Asst.-Surgeon W. H. Frost, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the surgeon-general, Public Health and Marine-Hospital Service, during the week ended March 23, 1906:

SMALLPOX—UNITED STATES.

California: San Francisco, March 3-10, 7 cases.

Delaware: Wilmington, March 10-17, 3 cases.

Florida: Jacksonville, March 10-17, 3 cases.

Georgia: Augusta, March 12-19, 2 cases.

Indiana: Indianapolis, March 11-18, 1 case.

Louisiana: New Orleans, March 10-17, 12 cases; Shreveport, 1 case.

Maine: Biddeford, March 10-17, 6 cases.

Maryland: Baltimore, March 10-17, 5 cases.

Missouri: St. Louis, March 10-17, 3 cases, 1 death.

Montana: Broadwater County, Feb. 1-28, 2 cases; Lewis and Clark County, 1 case; Missoula County, 2 cases; Silver Bow County, 1 case.

New York: Buffalo, 1 case.

North Carolina: Nineteen counties, Dec. 1-31, 374; 23 counties, Jan. 1-31, 438 cases.

Ohio: Cincinnati, March 9-16, 3 cases; Hamilton, Feb. 10-17, 1 case.

Tennessee: Knoxville, March 10-17, 1 case; Memphis, March 3-17, 5 cases.

West Virginia: Wheeling, March 10-17, 6 cases.

Wisconsin: Appleton, March 10-17, 2 cases; Beloit, March 3-10, 1 case; Milwaukee, March 3-17, 3 cases.

SMALLPOX—FOREIGN.

Africa: Capetown, Jan. 27-Feb. 10, 7 cases.

Brazil: Rio de Janeiro, Feb. 11-18, 3 cases.

Canada: Grand Falls, N. B., March 15, *18 cases; Winnipeg, March 3-10, 1 case.

Germany: Bremen, Feb. 24-March 3, 1 case.

Gibraltar: Feb. 25-March 4, 9 cases, 1 death.

Great Britain: Leeds, March 3-10, 1 case; London, Feb. 17-March 14, 4 cases.

Greece: Athens, Feb. 6-20, 5 deaths.

India: Calcutta, Feb. 3-10, 141 deaths; Karachi, Feb. 11-18, 23 cases, 8 deaths; Madras, Feb. 10-16, 36 deaths; Rangoon, Feb. 3-10, 56 deaths.

Malta: Feb. 18-24, 1 case.

Mexico: Tuxpam, Feb. 27-March 6, 5 deaths.

The Netherlands: Rotterdam, Feb. 25-March 3, 1 case, 1 death.

Russia: Moscow, Feb. 10-24, 22 cases, 5 deaths; Odessa, Feb. 17-March 3, 25 cases, 3 deaths; St. Petersburg, Feb. 17-24, 4 cases, 3 deaths.

Spain: Barcelona, Feb. 19-March 1, 6 deaths; Tarragona, Feb. 25-March 3, 1 death.

Turkey: Alexandria, Feb. 17-24, 15 cases; Constantinople, Feb. 18-25, 2 deaths; Idrugy: Montevideo, Dec. 1-31, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, Feb. 1-18, 9 cases, 3 deaths.

Mexico: Merida, Feb. 24-March 3, 2 cases.

CHOLERA—INSULAR.

Philippine Islands: Manila, Jan. 20-27, 3 cases, 2 deaths; Provincias, 348 cases, 247 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Feb. 3-10, 83 deaths; Rangoon, 3 deaths.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Feb. 11-18, 5 cases, 1 death.

India: General, Jan. 27-Feb. 10, 13,232 cases, 10,932 deaths; Calcutta, Feb. 3-10, 30 deaths; Karachi, Feb. 11-18, 6 cases, 8 deaths; Madras, Feb. 10-16, 9 deaths; Rangoon, Feb. 3-10, 20 deaths.

Medical Organization

Connecticut.

BRISTOL MEDICAL ASSOCIATION.—This association effected permanent organization February 13, adopted constitution and by-laws, and elected Dr. William W. Horton, president; Dr. George S. Hull, vice-president; Dr. Arthur S. Brackett, secretary and treasurer, and Drs. Herbert D. Brennan, Fred W. Deichman and William M. Curtiss, censors.

COLLINSVILLE MEDICAL SOCIETY.—This society was organized February 14, with the following officers: President, Dr. George F. Lewis, and secretary, Dr. E. A. Hotchkiss.

NORTH HARTFORD COUNTY MEDICAL SOCIETY.—Physicians of the northern part of Hartford County met at Thompsonville, February 16, in response to an invitation from Dr. Edward F. Parsons. Temporary officers were elected as follows: President, Dr. Edward F. Parsons, Thompsonville; secretary, Dr. Myron P. Robinson, Windsor Locks, and treasurer, Dr. John L. Bridge.

Georgia.

DECATUR COUNTY MEDICAL SOCIETY.—This society was recently organized at Bainbridge, on the standard plan. Dr. Vega Berry was elected president; Dr. Gordon Chason, vice-president, and Dr. Henry H. Cheatham, secretary and treasurer, all of Bainbridge.

HANCOCK COUNTY MEDICAL SOCIETY.—The physicians of Hancock County met February 27 with Dr. W. W. Pilcher, Warrenton, counselor for the tenth district, at Sparta, and organized this society on the standard plan. The following officers were elected: President, Dr. R. C. Wiley, Sparta; vice-president, Dr. R. G. Stone, Linton; secretary and treasurer, Dr. James G. Harrison, Sparta; censors, Dr. R. G. Pattillo, Culverton; Horace R. Darden, Sparta, and R. L. Ray, and delegate to the state association, Dr. Alexander F. Durham, Sparta.

Indiana.

TWELFTH DISTRICT MEDICAL SOCIETY.—The first annual meeting of this society was held in Fort Wayne, March 13, on call of Dr. A. E. Bulson, Jr., Fort Wayne, counselor for the twelfth district. The following officers were elected: President, Dr. William H. Myers, Fort Wayne; vice-presidents, Drs. Luzerne H. Cook, Bluffton, and Frank Broughton, Waterloo; secretary, Dr. Kent K. Wheelock, Fort Wayne, and treasurer, Dr. Walter F. Carver, Albion. The society adopted the following resolutions regarding the concentration of the medical colleges of the state into one large college at Indianapolis, to be operated under state auspices through Purdue University:

Resolved, That in view of the fact that the Indiana Medical college buildings and equipments have been donated to the state of Indiana through Purdue University, conditioned only on the maintenance of a complete medical school in Indianapolis under state control, we believe it the duty of the state to make its title to this property good by the remaining legal step, namely, legislative approval of a gift especially fitted for medical college purposes and worth over \$100,000.

Resolved, That this society will use its influence in every possible way to further the interest of this school and will view with disfavor any attempt to antagonize the action taken, and that we are unable to see any good reason for opposition or the accomplishment of this long-desired purpose, and can only recognize opposition as being the expression of disappointed individual ambition or a jealous rivalry founded on a false idea as to the effect on the interests of other institutions.

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Boston, JUNE 5-8.

Medical Association of the District of Columbia, Washington, April 3.

Tennessee State Medical Association, Memphis, April 10.

Medical Association of the State of Alabama, Birmingham, April 17.

Medical Society of the State of California, San Francisco, April 17-19.

Florida Medical Association, Gainesville, April 18.

Medical Association of Georgia, Augusta, April 18.

Mississippi State Medical Association, Jackson, April 18.

South Carolina Medical Association, Columbia, April 18.

State Medical Association of Texas, Fort Worth, April 24-26.

Arizona Medical Association, Phoenix, April 24-25.

Medical and Chirurgical Faculty of Maryland, Baltimore, April 24-26.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

Sixteenth Annual Meeting, held at Pittsburg, March 19, 1906.

The President, Dr. S. C. JAMES, in the Chair.

Officers Elected.

The following officers were elected to serve for the ensuing year: President, Dr. George M. Kober, Washington, D. C.; vice-presidents, Drs. F. C. Waite, Cleveland, and H. W. Loeb, St. Louis; secretary-treasurer (re-elected), Dr. Fred C. Zapffe, 1764 Lexington Street, Chicago; judicial council, Drs. W. J. Means (chairman), 715 North High Street, Columbus, Ohio; R. Winslow, Baltimore; T. H. Hawkins, Denver; H. B. Ward, Lincoln, Neb.; Eli H. Long, Buffalo; B. D. Myers, Bloomington, Ind.; J. M. Flint, San Francisco.

In his address as president, Dr. James urged the establishment of uniform requirements and curricula by all medical colleges, thus furthering the work now being done by state boards having in view interstate reciprocity.

Credit for Baccalaureate Degrees.

DR. CHARLES MCINTIRE, Easton, Pa., favored giving credit in the medical course for work done in the literary college.

Dr. FREDERICK S. LEE, Columbia University, is convinced that it is hardly possible for medical subjects to be taught efficiently in the literary school. The object of the training given by the college is fundamentally different from that given by the medical school, and this difference connotes a difference in method. The college gives the general development that is helpful in obtaining the special equipment and making proper use of it. That the ends of the medical training may be secured, it is above all things essential that the knowledge acquired by the student in the school of medicine be exact, specific, abundant, and always at the service of the individual. In these respects the training of the college is markedly inferior. The so-called medical subjects are taught in the literary college as pure sciences, while in the medical college they are taught as applied sciences. Many of the subjects contained in the medical curriculum are taught excellently in the literary college, but they can not serve a greater purpose than that of being introductory to the work taught in the medical school. Therefore, Dr. Lee believes that no credit shall be allowed by the medical schools for work done in strictly medical subjects in literary colleges, except in occasional specific instances and for unusually cogent reasons. If the literary colleges are able to give substantially the same courses as those given by the medical schools, there can be no objection to the substitution but, humanly speaking, that is an impossibility. Further more, it would be a mistake for the literary colleges to attempt to compete with the medical schools in the field of the latter. They are not equipped properly and from the nature of the case they can not be equipped properly with spirit, instructors or method for professional training and the latter, if under taken by them, can only be unsatisfactory and inadequate. The medical school is the proper place for medical instruction.

Dr. F. C. WAITE, Western Reserve University, is of the opinion that some of the courses given in the medical school can be taught fully as well, and in some instances better, by the literary college than by the medical college. He mentioned particularly osteology, elementary physiology, inorganic chemistry, bacteriologic technic and the bacteriology of non-pathogenic bacteria, and the principles of embryology, or about 700 hours of the first year of the medical course.

PROF. C. JUDSON HERRICK, Denison College, stated that few colleges are prepared to do any work in this direction, nor is there any evidence of an intention on their part to attempt to do this work until the medical colleges state specifically what they will accept as the equivalent of the work done by them.

Examining Boards and Medical Colleges.

DR. B. D. HARRISON, Detroit; Dr. B. F. BAILEY, Lincoln, Neb., and PROF. C. F. WHEELLOCK, Albany, discussed how medical colleges can be of service to registration and examining boards. As the result of this discussion the secretary of the association was appointed a committee to confer with the others named.

DR. M. M. HAMLIN, St. Louis, discussed interstate reciprocity and outlined the course pursued by the Missouri board.

Proposed Amendment.

Dr. J. R. GUTHRIE, Dean of the Medical Department of the University of Iowa, suggested that at the next annual meeting of the association the constitution be amended by striking out all reference to credits that may be allowed for work done in non-medical institutions, making attendance on four years of medical work in a medical college a requirement for graduation.

Amendments to Constitution.

By unanimous consent subsection (d) of Section 1, Article III, was amended to read as follows: Certificates from reputable instructors recognized by the State Board of Medical Examiners duly authorized by law, or by the superintendent of public instruction in states having no examining board, may be accepted in lieu of any part of this examination.

Section 2 of Article III was amended to conform with the above by inserting after the words "under the authority of," the following: "the Board of Examiners or."

The next meeting of the association will be held in Richmond, Va., March 18, 1907.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting Held Feb. 14, 1906.

The President, Dr. CHARLES K. MILLS, in the Chair.

Dr. JOHN B. ROBERTS exhibited a dilated Meckel's diverticulum of the ileum which had caused strangulation of the intestine and obstruction.

Prognosis in Tuberculosis of the Lungs.

Dr. JOSEPH WALSH said that prognosis must be viewed from two points: Absolute and practical cure. The latter viewpoint was especially considered. Primary factors in the prognosis of tuberculosis in regard to usefulness or practical cure are the amount of involvement, duration of disease, susceptibility to the toxin as manifested by rapid pulse, high temperature, and loss of weight, the dissemination and the association of complications. Secondary factors, which, however, in individual cases might become of prime importance, are age, sex, race, condition of life, intelligence, temperament, occupation or environment, and financial resources. Among the primary factors the amount of involvement is probably the least important. One patient with involvement of only one or two inches at the top of the lung, if other symptoms are severe, might die; while another patient with practically complete involvement of a whole lung, might recover as as to lead a useful life for an indefinite number of years. Marked toxic symptoms, such as rapid pulse, high temperature, and either rapid or considerable loss of weight, make the prognosis unfavorable. The reverse of this is likewise true. Under weight counts practically the same, or even a little more than loss of weight. Laryngeal tuberculosis has usually been considered of bad prognostic importance for the reason that laryngeal tuberculosis is a rare primary condition and usually occurs only in association with considerable lung involvement. Practically the same, Dr. Walsh thought, might be said of intestinal tuberculosis.

A previous history of tuberculosis of the cervical glands, tuberculosis of the lungs associated with fistula-in-ano, and a previous pleurisy gives a better prognosis. Complications on the part of the lungs themselves, the heart, the kidneys and the digestive tract rendered the prognosis less good.

The most critical age is the time between 15 and 25. The more remote the age on either side the better the prognosis. The better the environment in which the patient has been living, the worse the prognosis. The only remedy for the prevention or cure of tuberculosis is a regular life with sufficient rest, fresh air and good nourishment. If the patient has had these, and the tuberculosis has developed in spite of them, the susceptibility is so great that a cure is not likely. On the contrary a tuberculosis may have developed on account of bad environment and little nourishment, and such a patient's resistance may be good. If he is put under proper conditions, however, it usually happens that when a cure is

effected, for pecuniary reasons it is necessary to return to the old environment and the chances of a relapse are great. Consequently the worse the environment the better the prognosis, though the greater the likelihood of eventual relapse. The longer the patient has had the disease, other things being equal, the better the prognosis.

Roentgen Treatment of Some Non-Malignant Superficial Lesions.

Dr. CHARLES LESTER LEONARD said that definite indications for employing the Roentgen rays have been determined in the treatment of superficial lesions; and that a dosage that is sufficiently accurate for comparison and for efficient employment is known. The most valuable treatment by this method is the post-operative, that is, in combination with early operation. He included among the superficial lesions those glandular organs that lie beneath the surface and spoke of the remarkable results that had been produced in tubercular and simple adenitis and the sinuses that often follow operation.

He reported four cases of goiter in which the treatment had been applied for its alterative action, and because of the analogous character of their structures to fibrous malignant disease, in which beneficial results had often been seen. One patient had remained cured for three years. It was a case of chronic, simple goiter of twenty years' standing. A second had remained cured eighteen months since treatment was stopped, with entire absence of nervous symptoms. A third patient, a case of exophthalmic goiter, was much improved, but discontinued treatment. A fourth patient is improving under treatment.

The depilatory action of the ray has been found of great value in sycosis, favus, ringworm and hypertrichosis. The stimulant action due to modification in dosage was illustrated by the beneficial action in alopecia areata. Lupus illustrated the several lesions that yield rapidly to this treatment, with a remarkable restoration of the normal, and without breaking down the tissues. He also reported a number of severe and chronic cases of eczemas and psoriasis, varying from seven to twenty years in duration, that yielded to this method of treatment. Another group of difficult cases amenable to this treatment are the acnes. Here rapid results are obtained without scarring or disfigurement. Keloids, especially those that have taken on retrograde degeneration of a malignant type, are amenable to this method of treatment.

Exophthalmic Goiter Treated by the Roentgen Rays.

Dr. G. E. PFAHLER and Dr. M. C. THURSH reported the case of a young woman who had the nervous symptoms extending over a period of several months. Then the right lobe of the thyroid gland became enlarged. After the goiter had existed for two months x-ray treatment was begun. After twenty-two treatments extending over a period of two months she appeared to be well. Improvement was noticed after a month. She gained 25 pounds in weight, and the pulse fell from 120 to 72. The authors have collected thirty-one cases of goiter, including four of the exophthalmic type, treated by this method. Twenty-eight showed improvement.

Calomel in Eclampsia.

Dr. W. REYNOLDS WILSON said that irritation of the kidneys begins early in pregnancy and imposes a task on the renal epithelium which makes the balance between the production of toxin and the compensatory elimination extremely precarious. The function of the liver goes hand in hand with that of the kidneys, and when the toxic ingredients of the blood remain unaffected by the converting function of the liver, the burden on the kidneys becomes too great and eclampsia is the result. The action of the bile as a preventive of intestinal fermentation hangs also on the efficiency of the liver function. Calomel is, therefore, indicated in the therapeutics of eclampsia, first, on account of its diuretic effect; second, on account of its hydragogue action, which aids in elimination; and third, on account of its corrective effect in the presence of intestinal fermentation. Ten, fifteen and twenty grains, given in the convulsive stage, while opportunity for medication is present, seem to have the best effect. Morphia, as an adjunct, is very important, although it is regarded by Dr. Wilson as an un-

desirable sedative in the presence of an old nephritis. Its use, however, is strongly urged on account of its action in combating the undesirable effect of calomel, as shown in salivation and undue purgation, although the latter effect of calomel is never to be taken into consideration as a disadvantage.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Treatment of Cold in the Head.

In a case of ordinary cold in the head the best results are obtained, according to F. P. Atkinson in *British Med. Jour.*, by the following treatment:

| | | |
|--------------------------|-----|----|
| R. Spts. etheris nitrosi | | |
| Spts. ammon. arom., aa. | 3ss | 3 |
| Aque | 3i | 20 |

M. Sig.: To be taken at one dose and repeat in two hours, then once every four hours.

If there be a thick discharge from the nose the following is recommended as an insufflation:

| | | |
|------------------------|--------|------|
| R. Cocaine hydrochlor. | gr. i | 106 |
| Menthol | gr. ii | 12 |
| Acidi borici. | gr. C | 6/65 |

M. Sig.: A small amount to be used as an insufflation into the nares two or three times a day.

[Care should be taken to prevent the unauthorized refilling of this prescription.]

If the inflammation should extend to the trachea as shown by a tickling sensation in the throat when a deep breath is taken, Atkinson recommends the following combination:

| | | |
|------------------------|-------|----|
| R. Lij. ammon. acetat. | 3ii | 8 |
| Spts. etheris nitrosi. | gr. x | 65 |
| Aque | 3i | 30 |

M. Sig.: To be taken at one dose and repeat every four hours.

In the treatment of cold in the head or acute rhinitis, Ingals recommends daily sponging of the chest with cold water or salt water, bathing the feet every morning in cold water, as prophylactic measures, and the avoidance of sudden exposure, damp clothing and wet feet. In the beginning an attack may frequently be aborted by moderately large doses of opium, quinin or the ammonium salts. The following combination is recommended in the early stages of the disease:

| | | |
|---------------------|-----------|------|
| R. Morphine sulph. | gr. 1/8 | 008 |
| Atropine sulph. | gr. 1/120 | 0005 |
| Pulv. ipecac. comp. | gr. x | 65 |
| Quinine sulph. | gr. vi | 40 |

M. Ft. cap. No. i. Sig.: One such capsule at bedtime, followed by a hot drink.

Preparations containing ammonium carbonate or ammonium chlorid combined with liquor ammonii acetatis are recommended by Ingals. He speaks of the advisability of reducing the amount of liquids to a minimum during the active course of the disease. The attack may be cut short by the administration of the spirits of camphor in 10-drop doses, administered on a lump of sugar, or potassium nitrate in 5-grain (.30) doses, or spirits etheris nitrosi in 20-minim (1.30) doses, or solution of ammonium acetate in 2-dram (8.00) doses, repeated from time to time.

Inspiration through the nose of warm vapors or sprays of mild solutions similar to the following are recommended:

| | | |
|----------------------|--------|----|
| R. Ammonii chloridi. | gr. ii | 12 |
| Aque | 3i | 30 |

M. Sig.: As a spray for the nose. Or:

| | | |
|------------------|----------|----|
| R. Acidi borici. | gr. viii | 50 |
| Aque | 3i | 30 |

M. Sig.: To be used as a spray or wash to the nose.

Oil sprays should follow the use of these watery sprays as the oil is sedative in character.

Epilepsy.

In the treatment of epilepsy in a man 57 years of age who had suffered from the disease for fifty-two years, Matthew Woods, in *Med. Record*, recommended that the patient be placed on a vegetable diet, with a small amount of meat taken in the middle of the day. The supper consisted of tea or coffee, with bread and butter, avoiding such articles as cabbage, veal, pork, cooked tomatoes, pastry and other foods which were liable to undergo fermentation.

The following combination was ordered to be taken before each meal and at bedtime:

| | | |
|---------------------|----------|-----|
| R. Pulv. capsici. | gr. 1/10 | 006 |
| Strych. sulph. | gr. 1/30 | 002 |
| Ferri hydrocyanatis | gr. 1/2 | 03 |

M. Ft. pillula No. i. Sig.: One before each meal and at bedtime.

The following was also prescribed:

| | | |
|----------------------|------|----|
| R. Potassii bromidi. | 3iss | 6i |
|----------------------|------|----|

M. Ft. chart. No. iv. Sig.: One powder to be given at 8 a. m., 12 m., 4 p. m. and 8 p. m., well diluted with water.

The quantity of water was to be increased one ounce every week until each dose was taken in 12 ounces of water. When the attacks were nocturnal the last two doses were to be combined, taken at 9 o'clock in a pint of water.

Syphilis.

In the treatment of syphilis F. R. Sturgis, in his "Manual of Venereal Diseases," states that the initial lesion should not be cauterized unless it be attacked by phagedena when such a proceeding is admissible. When there are no complications, however, it may do harm. Mercury should not be used internally at this stage of the disease, as the appearance of the syphilide is retarded and the diagnosis rendered doubtful until several months have passed. Consequently no harm is done by withholding this treatment until ample time has been given for their appearance.

When the patient's appearance shows the presence of the syphilides, associated with mucus patches in the throat and on the tongue, alopecia, hemicrania and glandular induration, mercury is indicated, and there is no preparation, according to Sturgis, which can act as a suitable substitute. During this period of papular eruption, therefore, the following combination is recommended:

| | | |
|----------------------------|--------|----|
| R. Masse hydrargyri. | gr. ii | 12 |
| Ferri sulph. (exsiccated). | gr. i | 06 |

M. Ft. pillula No. i. Sig.: From three to six such pills a day.

It is best to begin with one pill three times a day after meals, and to increase the number to two, three times a day.

The bichlorid of mercury is recommended by some authorities, administered as follows:

| | | |
|---------------------------|------------------|----------|
| R. Hydrargyri bichloridi. | gr. 1/50 to 1/10 | 0012-006 |
| Saponis q. s. | | |

M. Sig.: One such pill after each meal.

If necessary to check the action of the mercury on the bowels, opium in doses of gr. 1/5 to 1/4 (.012-.015), may be added to each pill.

Mercury may be given in another form as follows:

| | | |
|----------------------------|-----------------|---------|
| R. Hydrargyri protoiodidi. | gr. 1/5 to 1/12 | 012-.03 |
| Ext. gentiane. | gr. i | 06 |

M. Ft. pillula No. i. Sig.: One such pill three times a day.

This author prefers blue mass and iron pill on account of its efficacy and tolerance by the system.

The mercury should be continued until all the symptoms have disappeared or toxic conditions have arisen, such as diarrhea, sponginess of the gums and salivation. The last symptom should be avoided, if possible, so that the administration of mercury will not have to be stopped. If salivation should arise all the treatment should be suspended and the following combination prescribed:

| | | |
|-----------------------|-----|-----|
| R. Potassii chloratis | 3i | 4i |
| Aque | 3vi | 180 |

M. Sig.: To be used locally as a mouth wash, and internally in teaspoonful doses, four times a day.

The foregoing checks the sponginess of the gums, the fetor of the breath and the flow of saliva. Other preparations which perform similar service are the following:

| | | |
|--|----------|------|
| R. Tinct. belladonnae..... | 3ii-iv | 8-15 |
| Aque..... | 3ii | 60 |
| M. Sig.: One teaspoonful four times a day in water. | | |
| Atropin may be used in preference to belladonna as follows: | | |
| R. Atropinae sulph..... | gr. 1/10 | 1006 |
| Alcoholis..... | 3ss | 15 |
| Aque q. s. ad..... | 3ii | 60 |
| M. Sig.: One teaspoonful three or four times a day. | | |
| The potassium chlorate should be used as a mouth wash along with the internal use of the belladonna preparation. | | |
| If the sponginess is excessive and dropping out of the teeta is threatened, nitric acid is recommended as follows: | | |
| R. Acidi nitrici dil..... | 3iv | 15 |
| Aque..... | 3ii | 60 |
| M. Sig.: One teaspoonful four times a day in water. | | |

As soon as the secondary symptoms have disappeared and no staining of the skin is left from the eruptions, the mercury should be discontinued in order not to create too great a tolerance by the system for the drug, and also to determine whether or not other lesions are about to follow. As the later stages of the disease are reached the mixed treatment should be substituted as follows, if it is decided to give the mercury internally:

| | | |
|--|----------|--------|
| R. Hydrargyri protoiodidi..... | gr. ss-i | 103-06 |
| Ext. gentianae..... | gr. i | 106 |
| M. Sig.: In one dose once daily, before lunch. And: | | |
| R. Potassii iodidi..... | 3ii | 8 |
| Tinct. cinchona comp | | |
| Tinct. gentianae, aa..... | 3ss | 15 |
| Aque q. s. ad..... | 3ii | 60 |
| M. Sig.: One teaspoonful well diluted in water, morning and evening, before meals. | | |

The iodides may be administered in the form of a saturated solution well diluted in water, milk or Vichy water.

The mercury and iodid may be combined and given in the same mixture as follows:

| | | |
|-----------------------------|-----------|--------|
| R. Hydrarg. bichloridi..... | gr. 1/4-i | 015-06 |
| Or | | |
| Hydrarg. biniodidi..... | gr. 1/4-i | 015-06 |
| Potass. iodidi..... | 3ii | 8 |
| Tinct. gentiane | | |
| Aque, aa..... | 3i | 30 |

M. Sig.: One teaspoonful well diluted in water twice a day, before meals.

The preparations are recommended, given before meals, to promote rapid absorption unless stomach and intestinal disturbances arise. If it is preferable for any reason to give mercury other than by the mouth it may be given in the form of an inunction or by means of mercurial vapor baths, or subcutaneously.

In order to avoid the dirty feeling produced by the greasy substances applied to the skin Sturgis recommends that the oleate of mercury be applied to the soles of the feet in from 10 to 20 per cent. strength. The patient should be directed to bathe the feet thoroughly in hot water on the night on which the first inunction is to be applied, then half a dram of the 20 per cent. oleate of mercury is rubbed briskly into the sole of the right foot, and this is repeated the following night on the left foot. The same stockings, which should be of wool, are worn night and day. The administration of iodid of potassium should be kept up continuously. If this preparation can not be borne the following combination is recommended:

| | | |
|-----------------------------|-----|-----|
| R. Tinct. iodi..... | 3ss | 15 |
| Syr. aurantii q. s. ad..... | 3iv | 120 |

M. Sig.: One teaspoonful well diluted in water, three times a day, before meals.

The foregoing dose should be increased in the same way as the potassium iodid.

The following statements are laid down by the author in considering the treatment of syphilis:

1. The average case of syphilis runs its course in from eighteen to twenty-four months.
2. Under proper and careful treatment the graver forms of syphilis seldom occur.
3. The patient should be observed occasionally for another eighteen months.

Why Mercury Is Contraindicated in Tuberculosis and Other Wasting Diseases.

PREScriber writes for information concerning the statement in the special article on "The Pharmacopœia and the Physician," in Chapter VIII, Feb. 17, 1906, page 507, to the effect that the mercurials are contraindicated in chronic conditions.

A satisfactory answer to this question necessitates a brief statement of the pharmacologic action and consequent therapeutic uses of mercurial preparations. For a long time mercurials have been employed by the medical profession, and it seems that after many years of extensive use, knowledge on this subject should begin to crystallize, and it has, in a way. The crystals are not perfect and recrystallization will doubtlessly be repeated from time to time, but our knowledge concerning the action and value of mercurials in the treatment of disease is much more positive and exact than our knowledge of the great majority of medicaments prescribed daily by the most intelligent members of the profession.

The therapeutic uses of mercurials apparently approved by professional experience are as follows:

1. As a cathartic. We have been repeatedly told by physiologists and pharmacologists, who have experimented on animals with artificially established biliary fistulas, that mercury is not a cholagogue. Indeed, these scientific men tell us that there is not a real cholagogue in our whole list of therapeutic agents, and by this they mean that there is nothing which in safe doses at least will increase measurably the quantity of bile formed by the liver within a given time. This is probably true, and it is well that it is so, because if we possessed such an agent it would be capable of doing great harm, and it is difficult to conceive of conditions in which it would be of great service. What the practitioner means by a "cholagogue" is an agent which aids in the expulsion of bile from the gall bladder and gall ducts into the intestines, and in certain conditions the practitioner, from thousands and tens of thousands of practical observations, is convinced that he has such an agent in calomel and other mercurials. On this point the findings of the laboratory men have been contradictory to one another, or at least not uniform, but the intelligent physician knows that he frequently meets a condition which after all is best described by the term "biliousness," in which the mercurial cathartic gives him better results than anything else. In the second place, experience in this case confirmed by more scientific evidence, shows that the mercurials furnish good, in some conditions the best, antifermentative cathartics. Our profession has learned, by its mistakes, that the continued administration of mercurial cathartics is not free from danger, but it has with equal certainty established the fact that in single large or in broken doses calomel in properly selected cases gives better results than any other purgative.

2. The specific action of the mercurial preparations in syphilis is as well established as that of quinin in malaria. The evidence on this point is overwhelmingly convincing. Mercury, in whatever form or by whatever avenue administered combines with proteids, and the inference from its specific action in syphilis is that it has a selective effect on the virus of syphilis and the proteids of cells that have been altered by this virus. In non-syphilitics the continued administration of mercury leads to cellular degenerations and disintegration. This is shown conclusively by the characteristic calcareous deposits in the kidneys in chronic mercurial poisoning. So frequently has this condition been observed and so carefully has it been studied that a diagnosis of mercurial poisoning may be made from this finding alone. It is pathognomonic.

It follows from what has been said that mercurials in other chronic diseases than syphilis are cell poisons. In tuberculosis and other wasting non-syphilitic diseases the chief object in the adoption of any therapeutic measures is to feed the cells of the body and not to destroy them. It follows, therefore, that these diseases mercurials, at least their continued or frequent administration, is contraindicated.

In cases of coexistent syphilis and tuberculosis, mercurials are not contraindicated. In cases of this kind the regular syphilitic treatment should be carried out. It will have a good

effect on the patient by relieving the cells from the necessity of contending with the syphilitic virus and will thus indirectly and for the time improve the tuberculous condition. Even tuberculous syphilitics, as well as the non-tuberculous, often gain markedly in flesh under mercurials.

Medicolegal

When Physician Can Not Testify as to Services.

The Supreme Court of Alabama says, in *Duggar vs. Pitts*, an action brought by the latter party against an executor to recover for professional services as a physician, where a rehearing was denied, that section 1794 of the Alabama Code of 1896 was intended to remove the ban of incompetency placed by the common law against parties of interest as witnesses, "except that no person having a pecuniary interest in the result of the suit or proceeding shall be allowed to testify against the party to whom his interest is opposed as to any transaction with or statement by the deceased person whose estate is interested in the result or proceeding." Can it be doubted for a moment that the testimony of the plaintiff as to the number of visits he made the deceased and what he did to relieve him, did not tend to fasten a liability on the estate of the deceased and to diminish the same, in view of the fact that the testimony of other witnesses as to the value of the plaintiff's services was hypothesized on the number of visits and character of the treatment? The court thinks not. It cites in support of its position the decision of the Texas Court of Civil Appeals under a similar statute, in the case of *Garwood vs. Schlichenmaier*, 25 Tex. Civ. App. 176, and the decision of the Supreme Court of New York in the case of *Ross vs. Ross*, 6 Hun, 182, which it says has been approvingly cited several times by said court. Nor does the court consider that the admission of the plaintiff's testimony was error without injury although there was much other evidence tending to establish his claim, and showing that he had treated the decedent faithfully and skillfully for a number of months. It says that, as above intimated, his was the only evidence fixing the number of visits, and while the evidence of other witnesses as to the value of services was partially based on facts independent of the plaintiff's testimony, yet the number of visits were considered in estimating the value of the plaintiff's services, which was not known to the witness whose evidence was partially hypothesized on the number of visits testified to by the plaintiff. And so it holds that the trial court erred in not sustaining the defendant's objections to questions to the plaintiff as to visits to the decedent, what he did for him, and how he relieved his suffering. It also holds that there was a failure to establish a predicate for the evidence of certain physicians as to the value of medical services in Selma, as each of them admitted that he did not know the customary charges in Selma and Dallas County.

Liability for Injury to Sick and Lame from Sidewalks.

The Supreme Court of Washington holds that in *Short vs. City of Spokane*, an action brought to recover damages for personal injuries on account of an alleged defective condition of a sidewalk, the following instruction should have been given the jury: The duty of caring and of abstaining from the unlawful injury of another applies to the sick, the weak, the infirm, as fully as to the strong and healthy; and when the duty is violated the measure of damages is for the injury done, even though injury might not have resulted but for the peculiar physical condition of the person injured, or may have been augmented thereby. The proximate cause of an injury is the efficient cause. The public streets and sidewalks in a city are not constructed and maintained for the sole use of the healthy and robust people, but for the use of the infirm, the sick and decrepit as well. They may be lawfully traveled by every citizen, without regard to age, sex or physical condition. If the city negligently permit the streets and sidewalks to remain out of repair, and any person (who is himself free from negligence) is injured, the city is liable for the injury. The city is chargeable with the knowledge that people

of different bodily conditions travel its streets, and that among these are the weak, the decrepit and those with organic predisposition to disease. The city is chargeable with knowledge that all classes of persons, including both the healthy, and diseased, and lame, constantly travel its streets and sidewalks, and that such disease or lameness might greatly aggravate a bodily injury. Hence the city has reasonable ground to expect that if one of that class, who are diseased or lame, is injured by reason of a defect in the sidewalk or street, the disease or lameness might develop and retard or prevent a cure.

Giving "Light Treatments," Etc., Practice of Medicine.

The Supreme Court of Tennessee says that the facts presented on the trial of the case of *O'Neil vs. State* were practically undisputed and embraced the following salient points: The first-named party, who was the defendant in the court below, charged with practicing medicine without a license, opened up an office with all the arrangements necessary for the treatment of his patients. According to the testimony, he would first subject his patients to a careful examination, including a microscopic test of a drop of blood taken from some part of the patient's body. He would then determine, from his diagnosis, the nature of the patient's ailment and whether or not it would require his treatment. It was shown in the record that the method of treatment was practically uniform in all cases. "The patient is denuded of clothing and placed in a closed cabinet, and his body is thereon subjected to the rays of two large electric arc lights, one being located in front of his body and one at the back. This treatment is continued for about thirty minutes at each sitting, and then the patient, who is by this time in a profuse perspiration, is taken into another room and rubbed off, after which he goes about his business. In addition to this general treatment a local application of the rays to the parts specially affected is made in some cases." In addition to prescribing the light treatment as the means of treatment for his patients, he gave medicines of various kinds, kept an account at a drug store where medicines were purchased, gave prescriptions in the form of orders on a certain store, advised several of his patients to take certain patent medicines as an auxiliary to his treatment, and was addressed and known as Dr. O'Neil. The record showed further that he was accustomed to make a uniform charge of \$100 in each case, for the application of the light treatment, but made no charge for medicines prescribed; hence he claimed that prescriptions were no part of his treatment.

The principal contentions of the defendant were: 1. That his professional business was not within the purview of the statute regulating the practice of medicine and surgery, for the reason that he was an optician within one of the two recognized definitions of that term, and was, therefore, expressly excepted from the operation of the statute. 2. Conceding that his business was comprehended by the statute, as applied to him, said statute was unconstitutional for two reasons: First, His method of practice was not such as it was within the power of the legislature to regulate, restrict or prohibit; second, the regulation and requirements of the act, as applied to his methods of practice, were arbitrary and unjust, because his business did not require the qualifications prescribed by the statute for those undertaking to practice medicine and surgery. But the Supreme Court is of the opinion that he was properly convicted of practicing medicine and surgery without having first procured a certificate of license from the State Board of Medical Examiners, as required by the act of 1901. It suggests that the definition of "optician" ordinarily understood should be given that word in the statute. Moreover, as the proof showed that the defendant made a microscopic examination of the blood in his diagnosis of disease, and also wrote prescriptions and prescribed remedies, although it must be admitted that his principal mode of treatment was by what he denominated the "functional ray," he could not claim exemption as an optician even under the very technical definition of the word which he invoked. But the determinative fact against him on the record was that he was holding himself out to the world as a practitioner of the healing arts and was soliciting patients afflicted with disease for treatment.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

March 17.

- 1 *Without Mosquitoes There Can Be No Yellow Fever. J. Carroll, Washington, D. C.
- 2 *Gonorrhea in Women. P. Findley, Omaha, Neb.
- 3 *Foreign Bodies in the Bronchi. T. A. Clayton, Washington, D. C.
- 4 *Actinomycosis Limited to the Urinary Tract. E. MacD. Stanton, Chicago.
- 5 Pyrexia, with the Report of Case in Which Autopsy Revealed Toxemia Rather than Pyemia. D. C. Peyton, Jeffersonville, Ind.
- 6 Hand Disinfection. C. P. Obendorf, New York.

1. **No Yellow Fever Without Mosquitoes.**—Carroll argues that the logical conclusion from the investigations which have been made would seem to be that the parasite of yellow fever belongs to the animal kingdom for the following reasons: 1. It is absolutely necessary for its continued existence that it pass alternately through man and the mosquito, and its parasitic existence in these hosts is obligatory. 2. The fact that a period of about two weeks must elapse before the contaminated mosquito is capable of infecting, points to a definite cycle of development in that insect. 3. The limitation of its development cycle to mosquitoes of a single genus and to a single vertebrate conforms to a natural zoologic law and does not agree with our present knowledge of the life history of bacteria. 4. The effects of climate and temperature on the stegomyia and on the rate of development of the yellow fever parasite within the body of the insect are exactly the same as the effects of the same conditions on the anopheles mosquito and the malarial parasite.

2. **Gonorrhea in Women.**—Findley says that the anatomic recognition of gonorrhea of the urogenital tract may be impossible, particularly in cases of long standing. For this reason the diagnosis must occasionally rest on the finding of an inflammatory lesion in one or more portions of the tract, and associating these lesions with a history of exposure to gonorrheal infection. A diagnosis that admits of no doubt can only be based on the finding of the gonococcus in the secretions or tissues. The small size of gonococci and their scarcity in the tissues in chronic cases may necessitate the microscopic examination of a large number of sections. Since the cure of gonorrhea is so unsatisfactory, and when deeply seated is usually only accomplished by a mutilating operation which too often unsexes the woman, prophylaxis becomes the paramount issue in the management of gonorrhea in women. Unfortunately, it is not alone the laity which is in need of education in this respect; the profession is often guilty of being too hasty in pronouncing a cure and in giving sanction to marriage or to the resumption of the marital relation. Untimely interference with uterine and urethral applications in the early stage of the disease too often causes an extension of the infection and makes a serious lesion of what might otherwise have been a self-limiting disease.

3. **Foreign Bodies in Bronchi.**—Clayton tabulates 50 cases not heretofore brought together. Among these 38 patients recovered and 12 died, a death rate of 24 per cent. Of 33 patients operated on 28 recovered and 5 died, while of 17 not operated on 10 recovered and 7 died.

4. **Actinomycosis Limited to Urinary Tract.**—Stanton records a case which was clinically one of cystitis and pyelonephritis, the actinomycotic character of the kidney lesions not being recognized during life or at the time of autopsy, but being discovered only on histologic examination of the kidney and bladder.

Medical Record, New York.

March 17.

- 7 The Border Line in Medicine and Surgery. E. G. Janeway, New York.
- 8 *Fever in Tertiary Syphilis. D. N. Carpenter, U. S. N.
- 9 *More Liberal Diet in Typhoid Fever. T. A. Clayton, Washington, D. C.

- 10 *Curability of Tuberculosis. H. P. Laughorst, Elmhorst, Ill.
- 11 *Conservative Treatment of Urethral Stricture. G. M. Muren, Brooklyn, N. Y.
- 12 Schwartz-Stucke Operation in Chronic Suppurative Otitis Media. J. J. Thomson, New York.
- 13 *Displacement of the Fallopian Tubes to Produce Sterility. A. E. Rockey, Portland, Ore.
- 14 Biographical Sketch of Michaelis, the Pioneer Worker on Nerve-Regeneration. L. P. Clark, New York.

8. **Fever in Tertiary Syphilis.**—Carpenter calls attention to the difficulty in the diagnosis of fever in tertiary syphilis. He illustrates this point by giving the histories of two cases recently observed, which show the necessity of administering mercury with caution. Both the patients whose histories are reported improved more rapidly when potassium iodid was used alone.

9. **Diet in Typhoid.**—Clayton's treatment of a case of typhoid fever, no matter on what day of the disease it may come under his care, is as follows: The regulation six ounces of milk are given every two hours, night and day, while the patient is awake. In place of milk, in order to vary the monotony for those who can take milk, and as a substitute for those who can not, animal broths are given. After the subsidence of the more acute symptoms the patient is asked if he is hungry, and if he applies in the affirmative a soft-boiled or poached egg is allowed, and if well borne the number is gradually increased to three or more a day. Jelly or blanc mange, custard, soft toast, the soft part of baked apple, and rice which has been boiled four hours, are the next additions. After this scraped beef or chop, very finely divided chicken, and baked potato are tried. Clayton does not advocate so full a diet in every case, for each patient must be carefully studied as an individual. He believes that most of the foods mentioned are quite as digestible, far more palatable, and rather less likely to cause perforation or hemorrhage by their local action, or gas production, than milk.

10. **Curability of Tuberculosis.**—Laughorst considers that the keynote of success is an early diagnosis, tonics and rest. Proper therapeutic and hygienic modalities directed against the disease will so reinforce Nature as to make the conquest an easy one.

11. **Treatment of Urethral Stricture.**—Muren advocates the treatment of stricture by gradual dilatation. In men beyond middle age the anterior urethra should be thoroughly flushed before any instrumentation. The best lubricant for urethral instruments is made from Irish moss, and contains a small percentage of formalin. Muren has been more successful in filling the urethra with a number of straight instruments, successively attempting the passage of each, than in the use of instruments with variously twisted ends. He instructs his stricture patients with healthy bladders to hold the urine for a couple of hours before treatment. Voided immediately after dilatation it irrigates the urethra without discomfort.

13. **Displacement of the Fallopian Tubes to Produce Sterility.**—Rockey mentions instances in which he considers an abortion justifiable as a necessity in saving life, and others in which the possible occurrence of pregnancy would expose the patient to danger which it is most desirable to avoid. His technic is as follows: When the cornu of the uterus is brought into the field of incision, the tube is seized near its uterine end with a pair of forceps. The sharp point of a pair of scissors is thrust into the cornu, and the uterine end of the tube is cut out by a V-shaped incision with two cuts of the scissors. The wedge-shaped point of the excised end of the tube is caught with the forceps, drawn out a little between the partly closed blades of the scissors and cut off. The severed end of the tube will then slip into the peritoneal sheath and be completely covered by it. One catgut suture is passed through this cuff, then through the fundus posterior to the inner end of the V-shaped incision from behind, forward, and tied, thus fastening the closed ends of the tube back of its original position. Two more sutures are passed around the tube and through the cornu to close the V, to control the bleeding, and to fasten the tube to the outside of the closed cornu.

New York Medical Journal.

March 17.

- 15 Surgical Intervention in Benign Gastric Lesions. A. J. Mc-Cosh, New York.
- 16 *Etiology of Acute Articular Rheumatism. R. I. Cole, Baltimore.
- 17 Causes and Cure of Cancer and Some Causes of Failure in Treating Malignant Growths by X-Rays and Electric Currents. R. Reburn, Washington, D. C.
- 18 Teaching the Deaf Child to Hear. G. Hudson-Maknen, Philadelphia.
- 19 Radical Operation for Chronic Otitis Media Suppurativa. H. Smith, New York.
- 20 Early and Preventive Treatment of Acute Otitis Media. O. Wilkinson, Washington, D. C.
- 21 Aneurism of the Middle Ear, with Intact Drum Head. S. Spencer, St. Louis.
- 22 Serum Therapy. J. R. Bloss, Huntington, W. Va.
- 23 Massage in Dysmenorrhea, etc. G. Norstrom, New York.

16. Acute Articular Rheumatism.—Cole reports a case of polyarthritis of mild grade with marked effusion into only one joint, with streptococci cultivated from this joint, and rapid and complete recovery. Other cases are also reported to demonstrate that streptococci may induce a polyarthritis of very moderate grade. Cole thinks that there is one fact which seems to point to streptococci or some very closely related organisms as the cause of rheumatic fever. There are several diseases in which one attack predisposes to another; instead of immunity there follows heightened susceptibility. Among these diseases are erysipelas, tonsillitis, pneumonia and rheumatism. The very close relation of pneumococcus to streptococcus is now well recognized. While probably of no special value in arriving at a definite conclusion, this association of these four diseases is of interest.

Cole thinks that there are three possibilities: First, that acute articular rheumatism is a definite, specific, infectious disease, the cause of which we do not know, and that the cocci which have been isolated were secondary invaders. Second, that there is no such specific disease as acute articular rheumatism, but that the cases grouped under this term are those mild and moderately severe cases of general streptococcus infection in which the joints and heart are generally involved. Third, that acute articular rheumatism is due to a special form of streptococcus, which at present we have no accurate method of distinguishing from *Streptococcus pyogenes*, but which, owing to the specific character of the lesions induced in man, must possess special characteristics.

Boston Medical and Surgical Journal.

March 15.

- 24 Adenomyoma of the Uterus. W. P. Graves, Boston.
- 25 Bilateral Torsion of the Fallopian Tubes. M. Storer, Boston.
- 26 Open-Air Treatment of Tuberculosis. W. A. Griffin, Sharon, Mass.
- 27 Mixed-Fat Treatment of Tuberculosis. A. E. Rogers, Boston.

Lancet-Clinic, Cincinnati, Ohio.

March 10.

- 28 *Diagnosis and Present Status of Treatment of Congenital Dislocation of the Hip Joint. C. O. Thienhaus, Milwaukee.
- 29 *Retrospectus: A. D. 2061. G. Strohbach, Cincinnati.
- 30 Nasal Diphtheria. L. D. Brose, Evansville, Ind.
- 31 Case of Scorboutus, Recovering, and a Case of Gastroenteritis, Terminating Fatally. W. W. Bostwick, New York.

March 17.

- 32 Successful Extraction of Foreign Body in the Eye by Giant Magnet with Flexible and Adjustable Poles. J. Raully, Cincinnati.
- 33 Clefts. C. L. Boellfeld, Cincinnati.
- 34 Female Specific Infection—Duty of the Family Physician. J. T. Reddick, Paducah, Ky.
- 35 Plea for More Moral Restraint for Students in Medical Colleges. J. M. Batten, Downington, Pa.

28. Congenital Dislocation of the Hip Joint.—Thienhaus claims that congenital dislocation of the hip joint is as present perfectly curable in from 60 to 80 per cent. of all cases treated within the time limit by so-called bloodless or bloody methods. The best time for treatment is from the second to the fifth year. Patients over 8 years of age should only be subjected to a trial of reduction when examination has shown that the shortening of muscles, blood vessels and nerves is not so extensive as to make serious injuries inevitable, and that malposition exists between the head of the femur and the acetabulum. The bloodless methods of reduction should be tried first, and only after two or three attempts have been made without success or with bad functional results should the bloody methods be resorted to.

29. Retrospectus: A. D. 2061.—Strohbach's paper is an essay on sanitation, with comparisons of conditions existing in the beginning of the twentieth century with those existing in the year 2061. At that time medical colleges are owned and controlled by the government. State examining boards have been abolished. The President's cabinet numbers among its members a secretary of health who is not a physician, but a man who has studied sanitation and is conversant with the subject and its needs. He is responsible to the President. At the head of the army and responsible to the secretary is the chief sanitarian, a man who has risen from the ranks of the army, receiving promotion only by competitive examination and meritorious service. Uniformity reigns everywhere. Utopia has arrived. There is nothing left to be wished for.

St. Louis Medical Review.

March 10.

- 36 *Significance of Leucocytosis in Surgery. M. B. Clopton, St. Louis.
 - 37 *Berberl; an Address at the Harvard Medical School. B. Takaki, I. J. N.
- March 17.
- 38 Summary of the More Recent Work on Variola. R. L. Thompson, St. Louis.
 - 39 The Mother-in-Law; a Medico-Ethnologic Sketch. F. J. Taussig, St. Louis.

36. Leucocytosis in Surgery.—Clopton believes that the significance of leucocytosis in surgery, particularly in abdominal surgery, is not sufficiently appreciated. He says that if the leucocytes are counted frequently and the count weighed carefully as only one symptom of many, it may be of great value, but that a single count is not valuable for any serious decision. In patients requiring operation the objection to this measure is that several counts may be necessary for a decisive result and that this may delay intervention too long.

37. Address.—Takaki discusses beriberi and the Japanese medical schools.

Surgery, Gynecology and Obstetrics, Chicago.

February.

- 40 Adenoma of the Thyroid Gland; a Clinical and Pathologic Study. J. C. Bloodgood, Baltimore.
- 41 Procedure for Retrodilplacements of the Uterus. T. Tuffler, Paris.
- 42 *Has Experience Sustained the More Radical Operation for Cancer of the Uterus? J. G. Clark, Philadelphia.
- 43 The Gonococcus in the Puerperium. W. S. Stone and E. McDonald, New York.
- 44 Three Years' Experience with Pyloroplasty. J. M. T. Finney.
- 45 Foreign Bodies in the Esophagus. S. McGure, Richmond, Va.
- 46 Scopolamin-Morphin-Ethyl Chlorid-Ether Anesthesia. H. A. Forster, Raleigh, N. C.
- 47 Gonorrheal Exostosis of the Os Calcis. W. S. Baer, Baltimore.
- 48 *Two Cases of Aneurism. F. W. Parham, New Orleans.
- 49 Starvation and Locking the Bowels for from Ten Days to Two Weeks. H. A. Kelly, Baltimore.
- 50 Postoperative Cystitis in Women; Its Cause and Prevention. F. J. Taussig, St. Louis.

42.—See abstract in THE JOURNAL, March 17, 1906, page 833.

48. Aneurisms.—Parham reports two cases, one a case of popliteal aneurism treated by intra-aneurismal suture of the vessel orifices according to the method of Matas, and the other an aneurism involving the second and third portions of the left subclavian artery, beginning just behind the scalenus muscle and extending to the point of disappearance of the artery under the clavicle. The inner three-fourths of the clavicle were resected. The first portion of the artery just inside the scalenus muscle was ligated and the sac was incised. This was followed by severe hemorrhage which was finally controlled by suture of the proximal opening within the sac and distal ligation of the subclavian artery. Parham states that the operative indications for this procedure are: 1. The practicability of laying open and inspecting the interior of the sac. 2. The possibility of applying a constrictor, clamp or temporary ligature to the proximal side of the tumor. In the second case reported the suture was employed because proximal ligation failed to stop the bleeding completely. The operation of suture within the sac is to be preferred to ligation, because: 1. Every possible bit of artery is saved, except that actually forming the sac of the aneurism. 2. Suture accomplishes simple approximation of the intima, and does not cut

knowledge as best he may, and a large part of it he obtains from the advertising literature of the proprietary-medicine manufacturer.

Medicine, Detroit, Mich.

March.

- 69 *Changes in the Retina and Retinal Vessels as an Indication of Lesions in Heart and Blood Vessels. T. A. Woodruff, Chicago.
- 70 Erotic Symbolism. J. Ellis, Cornwall, England.
- 71 Chemie and Microscopic Study of Urine During Life Followed by Histologic Examination of the Kidneys of the Same Patients. J. Funke, Philadelphia.
- 72 Typhoid Fever and Its Treatment. L. F. Bishop, New York.
- 73 Antioxiolization: Its Factors, Results and Treatment. H. C. B. Alexander, Chicago.
- 74 Nephritis; Etiology. A. A. Eshner, Philadelphia.

69. **Retina and Circulatory System.**—Woodruff states that with the ophthalmoscope many a commencing general vascular degeneration can be detected in its incipency by noting the alterations in the retina and in the retinal circulation. A man apparently in good health, exhibiting no symptoms of disease apart from a slight defect in vision, may be the subject of vascular changes of the most serious character. Woodruff advises that the internist familiarize himself with the use of the ophthalmoscope and the normal appearance of the background of the eye. Negative evidence is often quite as valuable as positive. When no signs of capillary alterations are to be found in the retinal arteries, nor changes in the retina itself, the probability is that there are no advancing changes going on in the vessels elsewhere. When structural changes in the retina are found it is positive evidence that these are only a part of a fibrosis more or less extensive in the arteries and capillaries throughout the whole system. The retinal vessels possess no anastomoses but are terminal vessels, and for this reason the region which depends for its nutrition on these vessels is liable to show alterations in structure that are a reflection of widespread vascular degeneration.

St. Paul Medical Journal.

March.

- 75 *Correct Treatment of Syphilitic Cicatricial Adhesion Between the Soft Palate and Posterior Wall of the Pharynx. J. E. Schadle, St. Paul.
- 76 Buttermilk as an Infant Food. W. R. Ramsay, St. Paul.
- 77 The Dutch Clinic (1636-1738). E. Kierbas, Brookings, S. D.
- 78 Neglected Means for the Prevention of Disease. A. W. Dunning, St. Paul.

75. **Treatment of Syphilitic Cicatrices in the Mouth.**—The plan of treatment described by Schadle consists of the construction of a suitable device to be worn continuously by the patient with a view to keep apart permanently the opposing surfaces of the velum palati and the postpharyngeal wall. The apparatus, preferably made of vulcanite, ought not to be introduced in recent cases until the acute symptoms of inflammation and tissue necrosis have subsided under appropriate local and constitutional treatment. In old chronic cases in which either partial or total adhesions exist and no inflammation or ulceration is present, the device should be employed immediately after complete detachment of the adherent soft palate. The device is composed of an obturator and a palatine plate which is designed to hold the obturator firmly in place by means of metallic dentary clasps. The intermediary operation and the details for making the obturator are described in detail.

Texas State Journal of Medicine, Fort Worth.

March.

- 79 The Church and Hygiene. A. G. Lyle, San Francisco.
- 80 *Pernicious Malarial Fever. W. L. Crosthwait, Holland, Texas.
- 81 First Aids to Injured Eyes. J. H. Harrison, San Antonio.
- 82 *Simple and Efficient Cure for Nasal Catarrh. J. W. Torbett, Marlin.
- 83 Treatment of Malignancies by the X-Ray. E. M. Rabb, San Antonio.
- 84 Relation of the Medical Profession to the Public. D. H. Fly, Amarillo, Texas.
- 85 Treatment of Rheumatism. J. W. Carey, Whitesboro.
- 86 Conditions Existing Between Physician and Druggist. J. M. Martin, Hillsboro.

80. **Pernicious Malarial Fever.**—Crosthwait reports four cases of pernicious malarial fever, one an example of the comatose form, a second illustrating the rigid variety, and two cases of hemorrhage. In one of the hemorrhagic cases there appeared during the course of an attack of remittent malarial

fever a most alarming case of hemorrhage, profuse nose bleeding, hemoptysis, hemorrhages from the buccal membrane and from the bowels. The hemorrhages were controlled, but reappeared promptly on the administration of quinin. The second case of hemorrhage was one of quinin hemoglobinuria. The patient died, not from the effects of the hemoglobinuria *per se*, but from the complex result of quinin poisoning and uremia.

82. **Cure for Nasal Catarrh.**—Torbett calls his treatment divergent hyriatic gymnastics or massage. He devised the method for the purpose of training the capillary circulation to maintain an equilibrium in the mucous membrane and skin to resist the effects of sudden change in the temperature. A dairy thermometer, a glass nasal douche and two glasses are needed. To one glass of warm water, at a temperature of 98 F., one-half teaspoonful of bicarbonate of soda is added. To the second glass of water, at a temperature of 96 F., the same amount of sodium chlorid is added. The patient is shown how to use the douche with the soda solution in the mouth, also as a gargle and over the face, to be followed immediately by the colder salt solution. This should be used at least once daily for from three to six days, when the soda solution should be raised one degree and the salt solution lowered one degree until the soda solution is from 115 to 120 F., while the salt solution is down to 75 or 80 F. The face, neck and arms should be bathed with cold water every morning, and the entire body given divergent temperature baths at least once a week. The ordinary precautions as to diet and personal hygiene must also be observed.

Wisconsin Medical Journal, Milwaukee.

February.

- 87 *Points Learned from Experience with Appendicitis. F. E. Walbridge, Milwaukee.
- 88 Blood Examination as an Aid to Diagnosis. M. Dvorak, La Crosse.
- 89 *Relation of Chronic Appendiceal Disease to Neurasthenic Conditions. L. H. Prince, Fairbury.
- 90 Evils and Abuses of So-called Lodge Practice. P. J. Chlvy, North Fond du Lac.
- 91 Pneumonia. P. L. Scanlan, Prairie du Chien.

87. **Experience with Appendicitis.**—Wallbridge states that it is impossible to predict, with any degree of certainty, the outcome of an acute attack of appendicitis in any stage of the disease, no matter how mild the symptoms. He treats every acute appendicitis as an emergency case and operates at once, night or day, if the opportunity is offered early.

89. **Chronic Appendicitis and Neurasthenic Conditions.**—Prince is fully convinced that chronic appendiceal disease is responsible for a not inconsiderable percentage of cases of so-called neurasthenia, ranging from ordinary crankiness through nervous prostration and hysteria to actual insanity. Three cases are reported illustrating a number of factors bearing on this subject.

Archives of Ophthalmology, New York.

January.

- 92 Eyeball Injuries by Iron Foreign Bodies. (To Be continued.) Salt Solution. L. Alexander, Nuremberg.
- 93 *Injuries to the Eye Following Subconjunctival Injection of Salt Solution. L. Alexander, Nuremberg.
- 94 Are the Anomalous Trichromates Fit for Service on Railroads? H. Fellenstein, Berlin.
- 95 Hemolytic Injections for Recurrent Hemorrhages into the Vitreous. E. Schenig, Vienna.
- 96 Congenital Orbital Cyst Associated with Microphthalmus. R. Conner, Detroit, Mich.
- 97 Plaster Operation on the Eyelids by Means of Skin Flaps Taken from the Neck. E. F. Snyder, Chicago.

93. **Eye Injuries Following Subconjunctival Injections.**—Alexander reports three cases which show that the subconjunctival injection of 5 and 10 per cent. salt solution may be followed by injuries to the eye. The injuries noted in these three cases were adhesions between the bulbar conjunctiva and sclera, partial gangrene of the conjunctiva and transient changes in the cornea and lens.

Illinois Medical Journal, Springfield.

February.

- 98 *The Medical Library. C. E. Black, Jacksonville, Beck.
- 99 Anglo-Eudothelloma of the Middle Ear. J. C. Beck, Chicago.
- 100 Present Status of Otology. J. Hollinger, Chicago.
- 101 Congenital Clubfoot. J. Eldon and C. F. Eikenberry, Chicago.
- 102 *Four Cases of Prostatic Obstruction. W. T. Bedford, Chicago.

98. Medical Library.—In this paper Black discusses the function and scope of a medical library owned and controlled by a county medical society; the relation of the medical library to the community at large; the growth of the library and how it can be made an active agency for good in the daily work of the physician.

102. Prostatic Obstruction.—Belfield reports four cases. The first patient suffered from sclerosis of the gland, which was treated by channeling a canal through the fibrous vesical orifice by means of the galvanic cautery introduced through a median perineal urethrotomy. The second patient had a hypertrophy of the prostate. A large middle lobe and two lateral outgrowths were removed by the same median perineal urethrotomy performed for galvano-prostatotomy in the first case. The third patient, the victim of carcinoma, was treated in a manner different from the usual custom followed in these cases. A simple puncture was made with a small trocar and cannula and a small soft catheter was then introduced through the cannula, which was withdrawn, leaving the catheter to drain the bladder. After three or four days the catheter was removed, cleansed and reintroduced through the fistulous tract. Thereafter the catheter is removed and cleansed daily and the bladder washed out by the patient himself. Belfield advises inspecting the vesical interior to determine the presence of calculi. If the cystoscope can not be introduced through the prostatic urethra, a straight cystoscope can be introduced through the suprapubic cannula at the time the puncture is made.

The fourth patient illustrates two of the common evils of perineal prostatectomy, viz., a permanent perineal fistula and permanent incontinence of urine. Belfield says that this operation, the removal of the prostate through its posterior surface, should be generally abandoned. He mentions three operations for the removal of prostatic obstruction: 1, galvano-prostatotomy for channeling a fibrous prostate; 2, enucleation of adenomatous masses from the mucous surface either (a) through a median perineal urethrotomy or (b) through a suprapubic incision, the former when the growths can be reached on the perineum, otherwise the latter. The suprapubic incision is best made in two stages—the first incision extending, but not through, the bladder; four or five days later the second incision—through the bladder—is made, and the prostatic masses are enucleated. In this way the chief danger of a suprapubic operation—septic infection of the suprapubic tissues—is minimized.

Journal of the Michigan State Medical Society, Detroit.
March.

Immunity in Theory, Experiment and Practice. L. Hektoen, Chicago.
*Vaginal and Uterine Prolapse. J. H. Carstens, Detroit.
Epilepsy. W. A. Polzella, Laporte.
Spirochaeta Pallida. E. H. Hayward, Detroit.
Present Methods in the Treatment of Pulmonary Tuberculosis. F. A. Johnson, Greenville.

H. Vaginal and Uterine Prolapse.—According to Carstens, prolapse is rare in nulliparae. If due to subinvolution and seen it can often be relieved by supports, with local and constitutional treatment. If due to lacerations, these can be fixed by plastic operations, but the mucous membrane must be reserved in women of child-bearing age. If there is pelvic relaxation these operations must be amplified by abdominal section. Carstens believes that an Alexander operation is indicated only in very rare cases, but when the abdomen must be opened on account of other conditions it is best to make one large intra-abdominal shortening of the round ligaments of one kind of ventral suspension. In older patients, those of the menopause, a plastic operation is of no avail. A vaginostereotomy will be less dangerous and gives better relief than an abdominal suspension.

The Postgraduate, New York.
March.

Recurrent Mastoiditis; Its Cause and Prevention. J. F. McKernon, New York.
What Is Kraurosis Vulvae? A. Brothers, New York.
Treatment of Syphilis with Intramuscular Injections of a New Preparation of Mercury Bimold. P. D. Littlejohn, New Haven, Conn.

111 Vulvovaginitis in Children. H. B. Sheffield, New York.
112 Unilateral and Conservative Operations on the Adnexa and Their Possible Sequelae. S. W. Bandler, New York.
113 Apparent Cure of Two Cases of Pulmonary Tuberculosis Treated in the Annex of the Post-Graduate Hospital. W. J. Merseureau.

109. Kraurosis Vulvae.—Brothers feels that he can not regard kraurosis vulvae as a disease independent of chronic pruritus vulvae. The clinical history of both affections is so suspiciously alike that he feels justified in declining to regard kraurosis vulvae as an established independent entity.

California State Journal of Medicine, San Francisco.
March.

114 Differentiation of the (So-called) Scrophulous Conditions of the Scalp. E. D. Chipman, San Francisco.
115 *New Etiology and Treatment of Chronic Bronchitis. A. W. Perry, San Francisco.
116 Indications and Contra-indications for Intra-Laryngeal Operation in Tuberculosis of the Larynx. C. E. Welty, San Francisco.
117 Partial Reduction in Dislocations of the Shoulder. R. Russ, San Francisco.
118 Spirochaeta Pallida (Treponema Pallida). L. S. Schmitt, San Francisco.
119 Gastric and Duodenal Ulcers. J. H. O'Connor, San Francisco.
120 Contamination of Water Supplies. N. K. Foster, Sacramento.

115. Etiology and Treatment of Chronic Bronchitis.—Perry attributes this form of bronchitis to a local edema of the bronchial mucous membranes. His treatment consists of the restriction of liquids to a proper proportion with the liquids excreted. The principle is to diminish the water in the body in the hope that any local accumulation in excess will also decrease. The chlorid of sodium in the food must be greatly reduced. Perry has treated twenty cases in the last three years according to this method, with good results. The treatment is best suited to patients with a rather abundant whitish viscid mucus, which is expectorated with difficulty, and who have some dyspnea and uneasy rest at night, with a cough.

Medical Fortnightly, St. Louis.

February 26.

121 Treatment of Fractures in General. E. A. Welmer, Pekin, Ill.
122 President's Address, Delivered Before the Medical Society of City Hospital Alumni. L. H. Behrens, St. Louis, Mo.
123 Sociologic Treatise on Biogenesis and Forces of Life. R. C. Bankston, Birmingham, Ala.

Medical Sentinel, Portland, Ore.

February.

124 Modern Technic in Prostatectomy. D. H. Rand, Portland.
125 Diagnosis and Localization of Brain Tumor. W. House, Portland.
126 Pre-Tuberculous Signs and Symptoms. J. N. Alley, Lapwai, Idaho.

Western Medical Review, Lincoln, Neb.

February.

127 Retrospect of Thirty-Three Years of Active Practice. W. F. Conwell, Neligh, Neb.
128 Proctitis and Sigmoiditis. R. D. Mason, Omaha.
129 Acute Articular Rheumatism and Acute Arthritis Deformans; Their Differential Diagnosis. C. W. Hargens, Hot Springs, S. D.
130 Conitant Convergent Strabismus. H. B. Lemere, Omaha.
131 Glanders. D. W. Beattie, Neligh.
132 Injuries of the Head. R. H. Rhoden, Fremont, Neb.

Medical Herald, St. Joseph, Mo.

February.

133 Prevention of Deformity. J. P. Lord, Omaha, Neb.
134 Is there a Rational Basis for a Scientific Therapy? W. F. Waugh, Chicago.
135 Etiology of Syphilis; with a Few Practical Points on Tertiary Cases of Several Years Standing. T. N. Bogart, Excelsior Springs, Mo.
136 Constipation. W. J. McGill, St. Joseph.
137 Prophylaxis and Sequelae of Venereal Diseases. C. G. Geiger, St. Joseph.
138 Need of Sexual Education. C. W. Fassett, St. Joseph.

Southern California Practitioner, Los Angeles.

February.

139 Enteroptosis in Women. L. G. Visscher, Los Angeles.
140 Why We Should Make Thorough Examinations of the Digestive System. B. Reed, Philadelphia.
141 Neurology and Psychiatry in 1905. R. Moore, Los Angeles.

Brooklyn Medical Journal.

February.

142 Intractable Menorrhagias of Arteriosclerosis of the Uterus. R. L. Dickinson, Brooklyn.
143 Medical Problems to be Solved by the Practitioner. L. C. Ager, Brooklyn.
144 Honors that Have Come to the Medical Profession in America. W. Schroeder, Brooklyn.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

March 3.

- 1 *Recent Surgical Methods in the Treatment of Certain Forms of Paralysis. A. H. Tubby.
- 2 A Case of Myxedema. T. Fraser.
- 3 *The Borderland of Insanity. G. H. Savage.
- 4 Treatment of Neurasthenia. G. Rankin.
- 5 Neurasthenia, Degeneracy and Mobile Organs. P. C. Smith.
- 6 *Pathology of Epilepsy. J. Turner.

1. **Surgical Treatment of Paralysis.**—The types of cases discussed by Tubby are those arising from anterior poliomyelitis, spastic paralysis, ischemic paralysis and some traumatic lesions of the nerves. The modern methods of treatment discussed are tendon and muscle transplantation, arthrodesis and nerve anastomosis. Among the cases reported by Tubby are the following: Grafting the extensor proprius pollicis into the tibialis anticus, and part of the extensor longus digitorum into the internal cuneiform bone for paralytic equino-valgus associated with paralysis of the tibialis anticus; partial paralysis of the extensor cruris; insertion of the ilio-tibial band into the patella, which was followed by complete recovery of the power of extension of the leg; grafting the distal facial trunk for traumatic facial paralysis into the hypoglossal.

3. **Borderland of Insanity.**—Savage shows that there are persons who are nervously or mentally disordered, but who are not to be considered or treated as lunatics. He pleads for a much greater freedom for the treatment of the insane who are not dangerous to themselves or to society by physicians in general practice, and urges the utility of having some system of notifications as well as of certification. For some patients greater control is needed, while in others much more freedom and a natural return to a simpler life is to be preached—a real consistent simple life, with plainer food and more regular occupation.

6. **Pathology of Epilepsy.**—Taken together, that is, the correlation of the defectively developed and probably unstable nerve cells, with the local status of the blood stream resulting from intravascular clotting, Turner submits are the conditions which constitute the pathologic basis of an epileptic fit. On the part of the nerve cells the most important changes are: (a) A form indicative of imperfect development; (b) retention of subcortical nerve cells, also an indication of imperfect development; (c) either an acute form of cell change, similar to that produced by ligation of the cerebral arteries in a dog, or (d) groups of darkly stained, shrunken cells, representing a more chronic change, and very likely, at all events in some cases, the sequel of that just described. On the part of the vascular system: (e) Large numbers of blood plates in the blood; (f) different forms of intravascular clotting, probably in large measure derived from amalgamation of the blood plates, but to some extent also probably due to destruction of red blood corpuscles; (g) small cortical hemorrhages, which in some cases can be traced to rupture of a vessel blocked up by the aforementioned clot.

The Lancet, London.

March 3.

- 7 Epidemic Disease in England.—The Evidence of Variability and of Persistence of Type. W. H. Hamer.
- 8 *Gastric Surgery. H. J. Paterson.
- 9 Two Cases of Bullet Wound of the Brain. R. L. Knaggs.
- 10 Diagnosis and Treatment of Tuberculous Pleurisy. S. Martin.
- 11 *New Method for the Production of Ultra-Violet Rays and Other Rays by Low-Tension High-Frequency Currents. J. C. Bowie.
- 12 Points in the Prognosis and Treatment of Croupous Pneumonia. C. H. Cuttle.
- 13 *Psychology of the Tuberculous. A. S. Gubb.

8. **Gastric Surgery.**—In this paper Paterson discusses perforation of a gastric ulcer, infantile hypertrophic stenosis of the pylorus and its treatment, the surgical treatment of cancer of the stomach, and the results, immediate and remote, of gastrectomy.

11. **Production of Ultra-Violet Rays.**—In order to overcome some of the objections to the present method of producing ultra-violet rays, Bowie employs various tubes and apparatus of glass and other materials. Of glass tubes he found one 9 inches long by 3 in diameter, gradually tapering toward one extremity, very suitable for general purposes. The end is fitted with a metallic cap, to which is fitted the terminal, and passing inward to a distance of one-third of the tube is the electrode, to end in the internal cathode (also anti-cathode). The latter is a disc of iron, and although other metals may be employed he has obtained the best results by using iron. In this form the body of the tube is encased in a metallic cylinder—the external anti-cathode (also cathode) which likewise carries its terminal. Interposed between the cylinder and tube is a porous material which can be kept cool for the purpose of absorbing any heat. On account of the small amount of heat rays present the free end of the tube may be fitted with a lens or lenses for concentrating the rays. The vacuum tube is connected with the secondary helix of the machine and can be approximated by a screw to the primary helix.

The working of the tube is as follows: Previous to turning on the current the secondary helix is placed at its furthest point from the primary and the condenser of the machine is raised so that the machine is working at its lowest capacity. The current is turned on and the tube glows. So sensitive is the tube that when *in situ*, and placed 12 feet from another machine which is working, the tube glows by induction. To obtain the greatest volume of ultra-violet rays the secondary helix is gradually approached towards the primary one, while the condenser is lowered to its greatest depth or capacity. The tube glows with great intensity and silently. From the internal cathode (also anti-cathode) is seen a corona of luminous points, while more distant from the corona it assumes pale violet or whitish-blue color which occupies the whole tube. These are the ordinary cathode and anti-cathode rays of Le Chatelier. Directly through the glass of the free end of the tube emerge the invisible ultra-violet rays. This radiation answers to all the known tests for ultra-violet rays. The tube when used can be held in the hand or adjusted to a stand. When the tube is worked with high tension, it also takes the place of a rectifier and can be handled with safety. This is of considerable importance when the ordinary x-rays are wanted, although it has to be noted that much better results can be obtained the employment of low tension.

13. **Psychology of the Tuberculous.**—Gubb states that there are presumably two principles of morbid process at work in determining the psychological changes which take place in the tuberculous, and they require to be distinguished from each other though clinically it can not always be possible to establish the distinction in the absence of the anatomic proof. They are (1) changes of mental temperament presumably due to the action on the nervous system of the toxins elaborated by the tubercle bacillus; and (2) modifications of character to mechanical interference with the cerebral functions secondary to the deposit of tubercle within or on the brain. A characteristic feature of the general psychology of the tuberculous is instability, feverish activity followed by periods of tense depression, phases of despair giving place to the elation of plans for a distant future, fits of hypochondria, from which is sought in intense application to work, a less indulgence in sensual pleasures and exaggerated ideas with a tendency to sentimentality and generalization. During the stage of invasion a certain tendency to refinement is manifest, both physical and mental, and under its influence artistic and imaginative faculties are often stimulated to unprecedented feats, doomed but too often to failure by a collapse of physical energy.

The tendency to take a sanguine view of things becomes more marked as the disease advances. When a patient learns that his lungs are affected he usually displays anxiety and is depressed. The mental depression, however, gradually subsides until at the terminal period, in spite of overwhelming evidence that his days are numbered, the patient obstinately makes plans or initiates enterprises incapable of achievement in the brief space of life that remains. The

are buoyed up by a hope that knows no contradiction and display impatience or even anger when attempts are made to get them to realize the seriousness of their plight.

The Practitioner, London.

March.

- 14 *Reducible Inguinal Hernia in Boyhood.—E. Owen.
- 15 Cerebral Manifestations of Hypertension in Sclerosed Arteries. W. Russell.
- 16 Current Theories Regarding the Causation of Arteriosclerosis. J. M. Cowan.
- 17 Unsuspected Tuberculous Peritonitis. R. Johnson.
- 18 Valvular Disease of the Heart. R. Crawford.
- 19 Gout and Its Causation. I. W. Hall.
- 20 Rheumatoid Arthritis. A. E. Garrod.

14. Inguinal Hernia in Boyhood.—The operation performed by Owen is a good deal like that of Mitchell-Banks, except that he never passes the sutures deeply through Poupart's ligament and the muscular inner wall of the inguinal canal so as to ring them and keep them in permanent contact. The stitches cause the deposit of a large amount of plastic exudation, which in due course becomes fibrous tissue and makes a splendid barrier.

19. Etiology of Gout.—Hall reviews the causes of gout, but does not offer any new theories.

Revue de Chirurgie, Paris.

Last indexed, page 758.

- 1 (XXV, No. 11.) Report of 18th French Congress of Surgery, 1905.
- 2 *Lésions du squelette chez un castrat naturel. F. Gross and L. Sencier.
- 3 *The Crush Stones in Common Bile Duct.—Ébroisement des calculs au cholédoque. L. Ombredanne.
- 4 *Appendicite et fièvre typhoïde (appendicite para-typhoïde de Dieulafoy). D. Perrone.
- 5 (No. 12.) Technique chirurgicale simple et aseptique. D. P. Allen.
- 6 Les kystes branchiaux du cou à structure amygdalienne (branchial cysts). F. Terrier and P. Lecene.
- 7 *De l'ostéoparathryosis. A. Broca and Herbinet.
- 8 Bipharyngoplasty, par la méthode italienne modifiée. F. LaGrange.

22. The Skeleton in Case of Undescended Testicles.—The inquiry in question is a man of 56 with empty, rudimentary testis. A testicle no larger than a grain of corn can be palpated in the right inguinal canal. A careful radiographic study was made of the different bones of this natural eunuch, calling the persistence of the epiphysal cartilages. The dog cast by the bones was like that of a child. The great chanter had been fractured at one time, probably from defective ossification of the epiphysal cartilage. The long bones longer than correspond to the height, and other special features of the skeleton corroborate the assumptions of Anel Bouin in regard to the results of defective functioning of interstitial gland of the testicle. (Their study of what we call "diastematic insufficiency" was summarized recently in these columns on page 690.)

1. Crushing Stones in Bile Duct.—Ombredanne has been treating the 53 cases on record in which a gallstone in the mon bile duct was crushed *in situ*. In 10 of the cases the attempted lithotripsy proved impracticable. Ombredanne has learned the operation successfully once and reports another published case. In 5 other cases on record the stone was crushed to facilitate its removal, but with success in only 2. Experience shows that, as a rule, the forceps fail when the stone cannot be crushed with the fingers; the hardness of gallstone is thus the principal point in the lithotripsy. In 10 of the 39 cases in which the stone was effectually crushed symptoms of retention of bile ceased at once. When conditions are favorable, choledocholithotripsy is a simple, mild and effectual procedure. If the stone does not crumble easily between the fingers the attempt to crush it should be abandoned. This procedure should not be attempted unless the stone is single and of moderate size, the walls of the duct are healthy, and in cases in which conditions are not promising for successful drainage.

2. Appendicitis and Typhoid Fever.—Perrone describes 3 cases of appendicitis during or following typhoid fever, the histologic anatomic findings demonstrating that the appendix is liable to be the seat of true typhoid lesions, and also that primary appendicitis is liable to develop in the course of or during convalescence from typhoid fever. Dieulafoy calls this

latter form "paratyphoid appendicitis," and Perrone's experience indicates that it is much more frequent than generally supposed, and may run its course unrecognized. The prognosis of this form of appendicitis, if operated on in time, is far better than that of typhoid perforation. The serious condition of the patient is no contraindication to an operation, although in the severer cases local should be preferred to general anesthesia.

27. Essential Fragility of the Bones.—Broca describes the cases of two children. One had six fractures and one seven, occurring from slight falls at various intervals; the bone healed readily and rapidly with perfect consolidation. Two other cases of this essential fragility of the bones are also related. The patients were sisters, about 20 years old. One had fractured her leg or arm ten times between the ages of 5 and 16, the other eleven times before she was 12. These two patients seem to have outgrown the tendency to fractures. They took calcium phosphate and cod liver oil systematically, with special regard to hygiene, and are now apparently in good health, although the shadows in radiography seem less dense than that of normal bone.

Beiträge z. klin. Chirurgie, von Bruns, Tübingen.

Last indexed, page 770.

- 23 (XIV, No. 3.) Position of Foot in Disease of Ankle.—Ursachen und Bedeutung der Stellung des Fusses in Pro- oder Supination bei fungöser Erkrankung des unteren Sprunggelenkes. M. Hofmann.
- 26 Erfahrungen über Appendicitis am Krankenhaus Heilbrunn. R. Hacker.
- 31 *Zur Statistik und Behandlung der Mamma-Carcinome. B. Schwarz (von Hacker's clinic, Graz).
- 32 *Ueber Nerven-Compression. E. H. van Lier (Lanz's clinic, Amsterdam).
- 33 Zur path. Anatomie des Carcinoma papillosum ventriculi. M. Matznoka.
- 34 Die chirurgische Behandlung von der Appendicitis. F. Bode (Rehn's service, Frankfurt).
- 35 Die Behandlung der appendicitischen Abscesse. W. Noetzel (Ib.).
- 36 *Passive Congestion in Treatment of Acute Inflammations according to Experience to date at von Bruns' clinic.—Ueber die Stauungsbehandlung bei akuten Entzündungen. M. v. Brunn.
- 37 (Supplement.) Report for 1904 of Czerny's surgical clinic. H. Edelberg.
- 38 (XIV, No. 1.) Ueber teleangiectatische Granulome. H. Kültner.
- 39 Ueber die operative Behandlung der Nasenrachen-Tumoren (in nasopharynx). Custodis.
- 40 Unterbindung von grossen Venen-Stämmen (ligation of trunk veins). E. E. Goldmann.
- 41 Zur Kenntnis der Heilung von Laugen-Wunden (healing of wounds in lye). L. Talke.
- 42 Zur Dauerheilung des Brustkrebses (permanent cure of mammary cancer). Steinthal.

31. Experiences with Mammary Cancer.—Summaries of the histories of 186 patients with mammary cancer operated on at von Hacker's clinic and followed to date are given, and various special points are emphasized. The total number of cases was 286. The proportion of married women (about 73 per cent.) is about that noted by other observers. Half the women had borne children, the average was four births. In only 4 cases was there a history of preceding mastitis in the breast affected, and in 1 of chronic eczema of the nipple. Trauma was blamed by the patients in nearly 10 per cent. of the cases. The lump had been first noticed at an average of nearly fifteen months before the operation, the intervals ranging from one month (10 cases) to one year (27 cases), and to ten years (1 case). Nineteen of the patients are still alive, in good health, and 4 died from an intercurrent disease after three years of health. Local recurrence was observed in 81 cases (43.54 per cent.) and 54 patients succumbed to metastasis (28.92 per cent.). In 27 cases recurrence was not observed until after an interval of from three to six and one-half years. There were nine tardy recurrences in each hundred cases of recurrence. The recurrence was operated on in 33 cases, the interval being from one month in one instance up to six and one-half years. Out of the 36 cases in which the supraclavicular glands were found already affected, 2 of the patients lived nearly four and five years, and 2 others are still alive, although 1 presents recurrence. Omitting these supraclavicular cases as practically inoperable, the proportion of permanent cures has been 25 in 150 cases (16.66 per cent.). The technic was that of Rother and Halsted as a rule. Four patients succumbed to heart failure during or soon after the operation, 12 to pneumonia, 2 to marasmus, and 1 each to sepsis and erysipelas.

32. **Compression of a Nerve.**—Van Lier reports a case of median paralysis cured by an operation which removed a tumor pressing on the nerve. The case shows that a nerve trunk which had lost its conducting power by pressure from some connective-tissue formation or a callus, is able to regain it as soon as the pressure is removed. The patient was a man of 27 with median paralysis resulting from the pressure of an arterial hematoma which had developed after he had cut himself in the arm two weeks before the operation was undertaken. The nerve was found flattened to a ribbon by the pressure, but it gradually regained its function so that the motor function of the hand became normal. The sensory functions have not returned during the 2 years since. Van Lier reviews the various communications that have been published bearing on this subject of compression of the nerves, and describes some experiments with frogs.

36. **Passive Congestion in Acute Inflammations.**—Von Brunn reports the details of 65 cases of acute inflammations treated by Bier's method of passive congestion or congestive hyperemia. The verdict is very favorable on the whole, but as the method is so young he urges publication of the mishaps and failures with it as possibly liable to prove more instructive than the successes. He states that it is best to allow as wide a space as possible between the lesion and the constricting band, which Bier also emphasizes.

Berliner klinische Wochenschrift.

- 43 (XLIII, No. 5) *Das Jodsäure Natrium und die Cerebrospinal-Meningitis. G. Edelfsen (Hamburg).
- 44 Masking of Grape Sugar and Glucosamin by Other Bodies in Suspension.—Verdeckung des Traubenzuckers und des Glukosamins durch andere in Lösung befindliche Körper. J. Lewinski.
- 45 *Ueber die radiologische Untersuchung des Magens im allgemeinen und ihre Verwertung für die Diagnose des beginnenden Carcinomes im besonderen (radiology of stomach in differentiating cancer). G. Holzknecht.
- 46 *Klinische Erfahrungen über Anämien. F. Rollin (Stettin).
- 47 Die Pubotomie. W. Stoeckel.

43. **Iodin in Treatment of Cerebrospinal Meningitis.**—Edelfsen advocates the use of iodic acid and its sodium salt (sodium iodate) rather than the halid salts of iodine in treatment of cerebrospinal meningitis and in all cases in which energetic action by iodine is desired. In his experience it prevented the development of serious sequels of meningitis. He supplements it by application of ice to the back of the neck as well as to the head, and he also gives potassium bromid in large doses to control the cramps and the tendency to vomit. Lumbar puncture and injections with silver salts are also useful adjuvants, he states. The sodium iodate, he declares, has also done good service in cases of chronic glandular enlargement.

45. **X-Ray Examination of the Stomach.**—Holzknecht is privat docent of medical radiology at Vienna and radiologic expert to the Austrian courts. In his x-ray work on the stomach he has come to the conclusion that the truly normal stomach is small and has the pylorus at the lowest point. He remarks that this is the way an engineer would build the stomach to perform its functions properly. Very few persons, however, have this normal type of stomach. The majority of mankind, even persons entirely free from any gastric disturbances, have distended, sagging stomachs with the pylorus some distance above the lowest outline of the stomach. They thus have a mild form of gastroptosis. Civilization has made man the controller of machines to do work instead of his doing the work himself. His muscles have lost their tonicity from lack of use, especially the muscles of the abdomen and intestines. The flabbiness of the muscles causes the intestines to sag, and this deprives the stomach of the cushion of intestines on which it normally rests. The stomach is thus compelled to sag too, but the pyloric region is fastened so that it cannot sag. The result is the bagging down of the lower part of the stomach. It is so common that the text books give it as the normal type. He then describes the important information that can be derived from fluoroscopy of the stomach after the patient has ingested a suspension of bismuth in water. The peristalsis can be seen and watched and deviations from normal detected. If the shadow is indented at some point, or if there is a gap anywhere, or the outline is like a picket fence at some part, it

is easy to diagnose a tumor or other anomaly in the stomach wall. If the peristaltic waves stop at a certain point or if the movements are atypical, the information thus obtained is of great importance, especially the finding of insufficiency of the peristalsis in the antrum. It is sometimes easy to palpate foreign body when its shadow can be seen, although palpation before was impossible. Another important finding is the discovery that a palpable tumor, supposed to be in the stomach, lies outside of the stomach shadow. In conclusion he refers to Sahli's desmoid test of the stomach functioning (mentioned in these columns on page 760). He calls attention to the possibility of erroneous conclusions from various eventualities that might arise with this test, but adds that they can be entirely avoided if the little bag is filled with bismuth, instead of a stain, and then watched with the fluoroscope. It is easy to note the exact moment when the little bag opens from dissolving of the catgut with which it is tied, or the bag can be found, still tied up, in the small intestine.

46. **Anemia and Defective Gastric Juice.**—Rollin does not attempt to theorize but merely relates his clinical experience of the effect that in patients with insufficient or lacking secret of gastric juice there was always evidence of anemia. In hypochlorhydria the hemoglobin was above normal, and in nervous dyspepsia it was practically normal. Only in the cases ranging from subacute gastritis to gastric achylia was anemia the constant finding. His experience further demonstrated that administration of natural gastric juice from the dog, supply the missing element for gastric digestion, was followed by the subsidence of the anemia. The supplementary gastric juice insured proper nourishment for the elements of blood.

Mitteilungen a. d. Grenzgebieten d. Med. u. Chirurgie, Jena. Last indexed, page 512.

- 48 (XV, No. 5). *Ueber lokale Anästhesie und über Sensibilität in Organ und Gewebe. K. G. Lennander (Upsala).
- 49 *Entstehung und Rückbildung traumatischer Aphasie. J. Hammer.
- 50 Gutachten über eine traumatische Verletzung des Conus terminalis. Adam Loeb.
- 51 *Ueber Leber-Abcesse (of liver). C. Goebel.
- 52 *Ueber die epidemische Natur der Peritiphilitis und die Beziehungen zu Influenza und anderen Infektionskrankheiten. I. Rostowzew.
- 53 Zur Frage der Darm-Desinfektion (of intestines). A. Mann.
- 54 *Zur Symptomatologie und Therapie der sich im Umkreis der Rückenmarksnerven entwickelnden Neubildungen (neoplasms growing on spinal cord). H. Oppenheim.
- 55 Die Peritoneal-Nerven der vorderen und lateralen Bauchwand und des Diaphragmas. M. Ramström (Upsala).
- 56 *Ueber Appendicitis larvata. Korach (Posen).
- 57 Zur pathologischen Anatomie der chronischen Appendicitis. S. Oberndorfer.
- 58 Vegetations-Felder bei Magen-Darm-Erkrankungen (of stomach and intestines). R. Schmidt.

48. **Local Anesthesia in Regard to Sensibility of Organ Tissues.**—Lennander has long made a study of the sensibility of the different tissues and organs, his conclusions having been duly chronicled in THE JOURNAL as they have appeared since 1901. He asserts that if the surgeon will only take the time to induce proper local anesthesia it is possible to perform extensive operations with the minimum of the anesthetic without pain or after effects from the drug. He relates a number of convincing examples from his own experience never surpasses the dose of 3 or 4 cc. of cocaine, using a 1:125 or .25 or .5 per cent. solution, generally the first, and two drops of 1 per thousand solution of adrenalin to increase the effect of the cocaine solution. He points out that where skin possesses four kinds of sensibility, to pain, pressure, cold, and heat, the muscles and aponeuroses have comparatively little sensibility. Inside the body all the serous and mucous coverings over the large cavities of the body and the coverings of the bones and joints possess the sense of touch. They probably have no sensibility for pressure, heat, or cold, but pulling or stretching them, or pressing them against a substance beneath causes pain. On the other hand, the internal organs lack all kinds of sensibility. They are not sensitive to pain, pressure, heat nor cold. He regards this as an established fact in regard to the stomach, intestine, and gall bladder, and almost certain in the brain, the lungs, cartilage, lungs, heart (according to several o

ions, the blood vessels when they are isolated from their surrounding connective tissue, the thyroid gland, liver, spleen, pancreas, parenchyma of the kidneys, the female internal genital organs and the serosa-enclosed parts of the testicles. It is hitherto been generally assumed that these internal organs possess little if any sensibility in health, but that they become highly sensitive in case of acute inflammation. Lennander, however, is convinced that the observations here related and his former experiences have shown that this assumption is incorrect. He thinks it is a wise economy that these internal organs are not burdened with sensibility, while their envelopes are extremely sensitive and are thus able to give warning of impending danger and the possibility of warding it off. Injurious influences affecting these internal organs from within could not be thrown off directly, and consequently it would be of no use for them to be subject to sensations of pain, pressure, heat and cold. None of the organs innervated by the sympathetic nerve below the branching of the recurrent nerve assesses any sensibility for pain, pressure, heat or cold. The consequence is that general anesthesia is not required for operations on tissues which are incapable of any sensation of pain. Among the numerous instructive examples cited is one which shows the complete lack of sensibility on the part of a gray and white substance of the brain to the thermocautery, faradization and to various operative measures. The incision in the dura mater was not felt as pain. Another patient had no sensation of pain when the actual cautery was drawn along the side wall of the vagina. In the amputation of the leg of a medical student the incision under cocaine-adrenaline anesthesia was painless down to the layers of the fascia, when few whiffs of ether were given. The operation was concluded without general anesthesia as the bone substance and bone marrow were free from sensibility, and the local anesthesia of the soft parts from the injection of the cocaine lasted until the operation was completed. No constriction was applied to the limb above. The Griggs amputation in this case was done on account of paralysis and atrophy, resulting from poliomyelitis in infancy. The particulars of this expert observation are instructive. In conclusion Lennander comments on the fact that so long as a lesion developing in the spine does not reach the periosteum, it must develop without causing local symptoms. When pain can be induced at the spot pressing on the spinous process or on the head, this is a sign that the bone has been destroyed so that there is abnormal action on ligaments and periosteum. Before this sign can be observed evidence of the presence of the lesion might be obtained by bending and stretching the trunk and thus exerting traction which will be experienced as pain when the ligaments and ligaments have begun to be affected by toxins, although the process is not yet far enough advanced for cure alone to elicit pain.

Traumatic Aphasia.—In the case described a circumferential injury of the skull was followed by complete aphasia. Speech was gradually regained as the lesion healed. The report illustrated and adds several points to our knowledge of traumatic disturbances of the speech center.

Liver Abscess.—Goebel's article is a study of tropical abscesses based on 23 cases observed in Egypt. He deprecates that exploratory puncture is indispensable. In operative treatment he prefers local anesthesia. The lesion should be opened wide, and for this purpose he advises resection of about one or two ribs. He cites some instances from his experience to show the disadvantages and danger of too small incisions and inadequate intervention. The dressings should be changed often and the cavity rinsed with salt or boric acid solution. The liver has a tendency to slide upward when its position is reduced. For this reason it is wise to resect a rib above the lesion. In some cases he had to make a secondary incision of a rib above on this account. He sometimes wipes the walls of the cavity with 10 per cent. solution of nitrate. Only 2 of the 23 patients on whom he operated were women. He could not detect that race, malaria, or any other factor had any influence on the occurrence of suppuration. The abscesses perforated into the lungs or bronchi in a number of cases, requiring plastic operations, and the abscesses were frequently multiple. Chloroform should be

avoided on account of the accompanying tendency to fatty degeneration of the liver.

52. Discussion of the Epidemic Nature of Appendicitis.—Rostowzew analyzes a bibliography of 117 references and extensive personal experience to prove that appendicitis is not an epidemic affection and that no connection between it and epidemics of influenza is discoverable.

54. Tumors Encroaching on Spinal Cord.—Oppenheim gives an illustration of five tumors developing on the inner aspect of the spinal dura which he successfully removed in the five cases. The tumors are all of about the same size, round or ovoid in shape. All were diagnosed during life and the exact location determined, with one exception, in which it was located too high. The specimen from a sixth similar case is not included in the illustration. One of the patients has been cured for nearly four years, another for several months to date, another was relieved of all symptoms for a number of months, but the other patients succumbed in a few days or weeks after the operation. If infection could have been prevented, 2 of the latter would probably have been cured like the first patient. He is convinced that the chances of operative treatment are much better for tumors of the spinal membranes than for brain tumors, but the indications must be carefully observed. In a recent case he advised against operating as the diagnosis of the exact location of the tumor was uncertain. Another surgeon performed the operation, which gave no results and was fatal. The details of 8 cases are given. In one the symptoms had been those of a growth encroaching on the spinal cord in the lower dorsal region. It was an extravertebral, malignant neoplasm developing from the seventh rib; it had destroyed the vertebra and made its way into the spinal canal. The preceding stage of neuralgia was probably due to compression of the intercostal nerves. Roentgen examination during the neuralgic stage would have revealed the extravertebral growth, but the patient was not seen until this stage had passed, and the symptomatology later was then merely that of the ordinary benign, intradural tumor. It has been his experience in several instances that these malignant tumors originating in the vicinity of the spine first make their presence manifest when they begin to encroach on the spinal roots and cord. The results of partial removal of the tumor were surprisingly good. The previously decrepit, paralyzed man was able to walk without a cane and to visit his place of business; this improvement persisted for four months. In a second, similar case, the growth was totally removed and the patient is still in good health, eight years afterward. This patient was a woman of 27 who had noticed for four years a lump in her neck, apparently originating in the fourth or fifth cervical vertebra, and becoming increasingly painful. During the last year there was paresis of the arm and leg on that side and numbness in the other leg. The muscles in the region of the cervical plexus were atrophied, and the response to electric tests was abnormal. The tumor proved to be a spindle-shaped enlargement of a nerve root, and it extended into the spinal canal. As the tumor was seen to be a sarcoma the surgeon (Bardleben) regarded it as inoperable, and dismissed the patient. A surgeon in her home town later removed the growth, permanently curing all the pains and tendency to paralysis, although a briefly transient mental disturbance followed the radical operation. Oppenheim urges those who have published cases of successful removal of malignant tumors of this kind to report on the ultimate outcome. The differential points in the symptomatology of Oppenheim's various cases are reviewed and discussed in detail.

56. Appendicitis Larvata.—Korach applies this term to a form of chronic appendicitis which belongs in the category of chronically recurring rather than that of chronic residual appendicitis. He reports 5 cases and describes masked appendicitis as a combination of two factors, namely, a chronic affection of the appendix and a neurosis affecting the viscera. The neurosis usually is the result of hysteria or hysteroneurosthenia. Treatment which cures one of the factors alone but allows the other to persist, is inevitably ineffectual or is liable to aggravate the persisting factor. He classes this form of appendicitis in the group of the hard-to-cure myxoneuroses, which includes bronchial asthma and mucous colitis.

Monatsschrift f. Geb. u. Gynäkologie, Berlin.

Last indexed, page 165.

- 59 (XXII, No. 2.) Transposition of Large Parts of the Body by Constriction from Amniotic Bands.—Vare and scheinbarer Transposition grüsserer Körperteile nach Abschneuerung durch Amniotische Stränge. F. Albfeld.
- 60 Zur Physiologie der Neonatorum. F. Landols.
- 61 Zur Kenntniss der Adenomyome des weiblichen Genital-Apparates. H. B. Semmelink and R. J. de Jong.
- 62 Fall von vaginaler Ovariotomie (Dermoidcyste) Intrapartum. F. Gelstboevel.
- 63 (No. 3.) Die antizipierte Klimax und ihre nächsten Folgen für den Organismus. F. Pollak.
- 64 Zur Kenntnis der Cysten des kleinen Labium. A. Marx.
- 65 Zur deciduellen Reaktion der Cervix. F. Holmeier.
- 66 Zur Methodik der Sterilisation der Frau. A. E. Neumann.
- 67 Sollen wir die Neimplantation des Uterus intra- oder extra-peritoneal vorziehen? K. Lichtner.
- 68 *Zur abdominalen Ureter-Implantation. P. Rissmann.
- 69 (No. 4.) Repeated and Twin Tubal Pregnancy.—Wiederholte und Extrauterin-schwangerschaft in ein und derselbe Tube; Zwillinge. P. Michl.
- 70 Fall von Gravidität bei Uterus bicornis duplex. H. Pelham.
- 71 *Ueber Dammanhalt (suture of perineum). O. Baum.
- 72 Erfahrungen über Spinal-Analgesie mit Tropakokain. II. Völkel.
- 73 *Fall von intrauterin erworbener Pneumonie. K. Bochenki and M. Gröbel.
- 74 Struma ovarii. K. Ulesko-Stroganowa.
- 75 *Metastases in Brain from Uterine Carcinoma.—Hirnmastasen nach Uteruscarcinom. O. Baum.
- 76 *Remote Results After Ovariectomy, especially in case of anatomically dubious tumors.—Dauererfolge der Ovariectomie. Polano.

63. Results of the Prematurely Induced Menopause.—Pollak ascribes to imperfect oxidation of fat the morbid phenomena observed after the anticipated climax. The lack of the internal secretion of the ovary causes a reduction in the oxidation of fat. The unoxidized fat accumulates and overwhelms the parenchymatous organs and also the heart. It is deposited in the muscle fibrils in the heart, interfering with their physiologic function as long as it remains there. These, at least, are the conclusions justified by his extensive experimental research and study of the subject in the clinic and in the literature. The disturbances of the premature menopause, consequently, he thinks, may be regarded as the results of this temporary over-accumulation of fat in the organism.

68. Abdominal Implantation of Ureter.—Rissmann believes that a ureteral fistula of long standing is generally accompanied by such changes in the parts that nephrectomy is the best treatment. In case the ureter is to be implanted, he advises cutting the end very slanting. It is then implanted as usual in the wall, and the long pointed tip is drawn up inside and sutured to the wall of the bladder, a short distance from the implantation. This allows the ureter to be firmly sutured without necessity for stitches in the part still serving to carry the urine. Sutures in this part are liable to cause suppuration and to drop through into the lumen, or the stitches may be taken too deep. In either event stenosis of the ureter is liable to follow, all of which is avoided by suturing merely the long sloping end below the point where the intact ureter passes through the bladder wall. The article is illustrated.

71. Suture of Perineum.—Baum uses a large curved needle and passes it entirely around, outside of the laceration, never allowing it to make its appearance in the wound. The suture thread thus introduced is tied just below the lower end of the laceration. The effect is that the tear is made smaller, all the parts having been compressed together by the thread as it is drawn up and tied. Another thread is then passed around the gap still left, and tied in the same way, and still another after this. The illustrations readily show how these three concentric threads gradually reduce the size of the laceration without leaving a chance for any recesses to form. The small gap then left is sutured like any wound. The walls of the tear in the vagina are brought so close together that they do not require suturing. In case the perineal laceration has included the anus, he first passes a thread entirely around the laceration in the sphincter and anus, inserting the needle at one end of the broken ring formed by the torn anus, and bringing it out at the other end of the ring. When the thread thus inserted is tied, the rest of the laceration is treated as above described.

73. Intrauterine Pneumonia.—A woman presented evidences of croupous pneumonia during the last days of pregnancy and gave birth to a male child exhibiting cyanosis and dyspnea

with findings in the lungs typical of pneumonia. The child died in eleven hours and the pneumococcus was cultivated from the lung tissue. It was not discovered elsewhere in the child's organs.

75. Metastasis in Brain of Uterine Carcinoma.—The tumor in this case was in the left temporal lobe, and was accompanied by much edema and evidences of cerebral hemiplegia. In second case there was metastatic endocarditis, but no brain findings, although the diffuse carcinomatous endocarditis might have favored the spread of cancer elements to the brain.

76. Treatment of Ovarian Tumors in General.—Polano has been studying the latest statistics of various operators in regard to the ultimate results of operations for ovarian tumors. They suggest that women with tumors in the ovaries, even apparently innocent ones, seem to display a tendency to tumor formation in other organs. In case of malignant disease, extragenital organs, the ovaries seem to be the favorite sites for metastatic affections. The symptoms emanating from the ovaries in such a case may easily mask those of the primary growth. He is convinced that when it is necessary to operate on an ovarian tumor of a malignant or dubious nature, it is wise to remove the uterus with both ovaries. In case of bilateral ovarian tumor this should always be done, unless metastases in the peritoneum contraindicate further intervention. Extirpation of the primary tumor and of the cancer ovaries at the same time may be followed by long survival. In von Franqué's case the patient lived six months after section of the stomach and ovariectomy in one sitting. If ovary seems sound he advises leaving it as the removal of sound second ovary is liable in some cases to impair general health very much. The danger of involvement of sound organ is actually not so great as is generally supposed. It can be left in place without concern if it be re-examined from time to time. The majority of European operators seem to prefer the vaginal route in operating on these patients. Ott of St. Petersburg has a record of more than 2 vaginal ovariectomies. Polano's conclusions are based mainly on the reports and discussions at the German Congress Gynecology last year. The ultimate results were better in cases of sarcoma than of carcinoma, and poorest in case of papilloma.

Therapeutische Monatshefte, Berlin.

Last indexed XLIV, page 1324.

- 77 (XIX, No. 1.) Agglutination Test with Dead Typhoid Bacteria.—Anwendung abgetöterter Typhus-Bakterien zur Anfeindung der Gruher-Widal'schen Reaktion. G. Klein.
- 78 Ueber tonisierende Weingeistpräparate (tonic wines). O. Liebig.
- 79 Ueber Methyläthylpyruvat-Säure (acid). A. Nicolard.
- 80 Leysin Sanatorium.—Behandlung der Tuberculose in den Sanatorien von Leysin. Morlin.
- 81 *Veronal. Kress.
- 82 Zur Frage der Zellmast. W. N. Clemm.
- 83 Chemical Reaction in Intestinal Canal and Its Therapeutic Significance.—Chemische Reaktion im Darmkanal unter therap. Verwendbarkeit. J. Goldschmidt.
- 84 (No. 2.) Atropin-Anwendung in der Gynäkologie. Kuhn.
- 85 Behandlung schwerer blutiger Hand-Verletzungen (injuries of hand). G. W. Schiele.
- 86 Indikationen für Keil-Gebräuch. A. Hirsch (Nigiz).
- 87 Erfahrungen der Landpraxis mit Veronal. F. Frösch.
- 88 Zur operativen Öffnung der Mittelohrräume (of middle ear). Kian. (Concluded.)
- 89 (No. 3.) Aetiology der Tahes. O. Rosenbach.
- 90 Das Gesetz des osmotischen Gleichgewichts im Organismus (law of osmotic balance). H. Kienpe.
- 91 Meist Eitling Among the Masses.—Erbitzt unser Volk Fleisch? F. Goldstein. Id. F. Joklik.

81. Veronal Poisoning.—Kress reports symptoms of narcosis in 3 out of 12 neurasthenic patients to whom he had been giving veronal. The dose was .5 gm. veronal on an empty stomach. A cumulative action was apparent by the third or fourth day. Extreme somnolence, inability to get up out of bed, or proper food were the main symptoms.

84. Atropin in Gynecology.—Drenkhahn expresses the opinion that greater use is not made in gynecology of the power of atropin to relax the muscles and to hold them relaxed. In case of a wound infection of the uterus, and if the infection can be kept still the infection remains localized and heals. Atropin, he thinks, is an ideal drug for the control of holding the uterus still. He thinks that the contraction of the uterus entail toxemia and bacteremia from this. Even in case other organs are already affected the

is useful as it checks the absorption of toxic substances from the surface of the puerperal uterus. He relates a few examples from his experiences to show the benefit from atropin in not too far advanced puerperal fever. The only by-effect noted besides the disturbance in accommodation, was the occasional paralysis of the bladder. Catheterization should not be deferred too long. The patients do not perceive that the bladder is distended. The dosage recommended by Drunkbalm is from 12 drops of a 1 per thousand solution of atropin three times a day, to 20 drops every six hours. He kept this up in the case he describes in detail for nine days, giving a total of .06 gm. of atropin, that is, about .006 gm. a day, fully twice the maximum dose. Although the puerperal fever was severe the patient recovered in two weeks without other treatment.

Virchow's Archiv, Berlin.

Last indexed, page 698.

- 92 (CLXXXI, No. 1.) Ueber diffuse Myokarditis. S. Saltykow.
- 93 Zur Pathogenese der gonorrhoeischen Epididymitis. M. Oppenheim und O. Löw.
- 94 Congenitale Atresie des Kehlkopfes (of larynx). O. Frankenberg.
- 95 Zur Pathologie gutartiger Tonsillar-Tumoren. E. Glas.
- 96 Zur Kenntnis der Cystadenome des Pankreas. L. Edling.
- 97 Ueber Gallerkrebs der Harnblase (colloid carcinoma of bladder). L. Hauenbusch.
- 98 Weitere Untersuchungen über Oxyuris vermicularis in der Darmwand des Menschen (in intestinal walls). O. Wägenar.
- 99 Development of Elastic Fibers and Their Relation to Tissue Function.—Entwicklung der elastischen Fasern im Organismus und ihre Beziehungen zu der Gewebefunktion. M. Nakai.
- 100 (No. 2.) Ueber das Aneurysma des rechten Sinus Valsalvae der Aorta und seine Beziehungen zum oberen Ventrikel-Septum. K. Hart.
- 101 Phlebitis migrans (non syphilitica). G. Schwarz.
- 102 Pinguicula.—Der Lidspalteudeck und sein Ilyalium. S. Fuss.
- 103 Hypophysitis-Tuberkulose bei einer Zwergin (in a dwarf). C. Hueter.
- 104 Riesenzellen bei angeborener Syphilis (giant liver cells). R. Oppenheimer.
- 105 Ueber die erste Entstehung von Leber-Abcessen durch retrograde Embolie des Hais.
- 106 Doppelseitige Nieren-Sarkome mit chromaffinen Cell-Nestern. B. de Vecchi.
- 107 *Experimenteller Beitrag zur Erkenntnis der bei Nephritis auftretenden Hypertrophie des linken Herzens (of left heart). M. Katzenstein.
- 108 Ueber Nieren-Amyloidose (of kidneys). I. Ranbischek.
- 109 Ueber den Fettgehalt der Nebenniere (fat in suprarenals). O. Napp.
- 110 (No. 3.) *Paraffin-Injektionen in menschliche Gewebe. I. Kirschner.
- 111 Ilyalinhäutchen kollagene Kugeln als Produkte epithelialer Zellen in malignen Strömen. R. Zipkin.
- 112 Der Greisenbogen (arcus senilis). S. Fuss.
- 113 Fülle von pathologischer Blutbildung bei Kindern (blood affection in children). G. Swart.
- 114 Injuries of Kidneys and Intestines in Sublimate Poisoning of the Kidneys.—Die Nieren und Darmveränderungen bei der Sublimatvergiftung des Kindes in ihrer Abhängigkeit vom Gefäß-Nerven-System. Elbe.
- 115 Ueber eine Entwicklungstörnung im Kleinhirn in einem Fall von Spina bifida lumbosacralis (defect in cerebellum). M. Predig.
- 116 Origin of Cavities in Spinal Cord.—Zur Lehre von der Entstehung von Höhlen im Rückenmark und über symptomlose Hydromyelia. A. Bittorf.

07. Hypertrophy of Heart in Nephritis.—Katzenstein found that the blood pressure was not raised in his experiments on rabbits and that the renal artery or pedicle of the kidney was ligated. In some instances the pressure was lowered, the other hand the pressure was decidedly increased when the kidney was not tied off but was left in communication with the general circulation, although with some obstruction to the normal circulation through the kidneys. When the tie was only slightly twisted or when a ligature was tied very loosely to the renal artery, the result of this obstruction to the circulation was a decided increase in the blood pressure, persisting for hours. He does not attempt to explain this remarkable difference in the results when the relation through the kidneys was merely obstructed or cut altogether.

10. Histologic Study of Paraffin Injections.—Kirschner's researches demonstrate that paraffin injected into the tissues is absorbed like catgut, nor does it become encapsulated, like a foreign body. Connective tissue grows into and through both the soft and hard paraffin with the ultimate absorption of the injected foreign body. A number of examples are related. The organization of the paraffin proceeded with much more facility in some patients than in others, probably from the high pressure on the tissues in the different cases.

Archivio per le Scienze Mediche, Turin.

Last indexed XLV, page 1286.

- 117 (XXIX, No. 4.) Ricerche sopra un bacillo del gruppo B. *Pseudotuberculosis* (H. Heller). C. Sacerdotti.
- 118 Sulla particolare struttura di alcuni grossi leucociti monocelati della cavia, colorati a fresco (structure of guinea-pig's leucocytes). A. Cesaris-Demel.
- 119 Tumori della sella turcica. U. Parodi.
- 120 Intorno a qualche proprietà del siero anticarbonchioso Sclavo (certain properties of antianthrax serum). B. Cler.
- 121 Flebite produttiva della Vena cava e delle Vene sovraepatiche con cirrosi del fegato (of liver). F. Vanzetti.
- 122 Traspiantazioni di Salivary Glands.—Sul trapianto delle ghiandole salivari mucose. V. Marzocchi and E. Bizzozzo.
- 123 Legatura del dotto di Wharton nel cane (in the dog). Id.
- 124 Produzione di una tossina tiflica solubile (soluble typhoid toxin). G. Moreschi.
- 125 (No. 5.) Sul comportamento delle cartilagini nelle ferite (behavior of cartilage in wounds). G. Fasoli.
- 126 Contributo allo studio delle terminazioni nervose nei muscoli striati di "Ammonoetes branchialis." R. Fusari.
- 127 Sul potere di dissociazione dei tessuti paratiroidei. L. Fiori.
- 128 Ulteriori osservazioni sul processo infiammatorio delle membrane sierose. R. Vigliani.
- 129 Sul fenomeni di agglutinazione dei batteri. G. De Rossi.

Riforma Medica, Naples.

Last indexed, page 314.

- 130 (XXI, No. 35.) *Del riconoscimento degli albumosoidi urinari. E. U. Fittipaldi.
- 131 Occlusione intestinale da diverticolo di Meckel. L. Robbio.
- 132 *Delio intervento nelle ferite penetranti del torace (stab wounds of thorax). F. Gangitano.
- 133 Mal Perforans Cured by Nerve Stretching.—Male perforante del piede guarito collo stramento del nervo plantare interno. A. Gerezzzi.
- 134 Considerazioni cliniche ed anatomico-patologiche a proposito di un caso di morbo di Recklinghausen (multiple neurofibromatosis). G. Monzardo.
- 135 (No. 36.) Experimental Study of Influence of Ligature of Jugular on Success of Ligature of Arteries in Neck.—Influenza dell'alacciatura delle giugulari sugli esiti della legatura dei grossi tronchi arteriosi del collo. P. Fiori.
- 136 *Conseguenze e cura del rene mobile (movable kidney). D. Bianchi.
- 137 *Studio di alcune quistioni relative alla rabbia (rabies). C. Fermi.
- 138 Caso di myxedema congenito. A. B. Glanasso.
- 139 (No. 37.) Sul tumori primitivi delle borse sierose (bursae). Jugular on Kidneys, Pulse and Blood Pressure of Bandaging the Legs.—Effetti prodotti dalla fasciatura espulsiva degli arti inferiori sulla secrezione dell'urina, etc. A. Piessi.
- 140 Caso di sclerosi del pancreas. E. de Magistris.
- 141 Paralisi facciale periferica da tumore. A. Salerni.
- 142 *Siero antinfettivo ed erisipela. C. Mastri.
- 143 (No. 38.) Chimismo urinario in 2 infermi operati di gastro-enterostomia. B. Menotti.
- 145 Action of Caffein on Pulse Tension.—L'azione della caffeina sulla pressione del polso. G. C. Mirano.
- 146 (No. 39.) Studio dei tumori muscolari (fenomeno del Capozzi). M. Landolfi.
- 147 *La gastropylia nella dilatazione dello stomaco. A. Laffranchi (Brescia).
- 148 (No. 40.) L'ubicazione del parassita malarico (location). C. Serra.
- 149 Contributo alla resezione intestinale primaria nelle ernie inguinali con suppurazione periantriale. M. Dardanelli (Concluded).
- 150 *Contributo clicoale all'uso del siero antitattico a scopo preventivo e curativo. M. Pergola.
- 151 Sulla gastro-enteroecia post-operatoria. E. Cartolari.
- 152 Degli effetti prescittici nella cirrosi epatica. T. Silvestri.

130. Determination in Urine of Bodies Resembling Albumoses.—Fittipaldi adds 5 drops of a saturated solution of trichloroacetic acid to 5 c.c. of urine and heats to boiling, then sets aside for five or six hours. The precipitate may contain albumin alone or mixed with nucleoalbumin, or albumosoids may be present. To determine the presence of the latter the supernatant fluid is decanted, filtered and treated with mercuric iodid and potassium. If the fluid becomes turbid this is due to the presence of albumosoids unless it can be explained by the presence of an alkaloid (quinin). The precipitate is suspended in alcohol and centrifugated. The alcohol is then expelled and the precipitate is dissolved with the minimum of caustic soda at 31 to 32 per cent. In another test tube a mixture of 0.5 c.c. of a 5 per cent. solution of nickel sulphate with the same amount of ammonia is shaken up and poured out. The alkaline solution of the precipitate is then poured into the same tube. If it contains albumosoids the fluid turns an orange tint. To make the test still more exact 25 c.c. of urine can be precipitated with six times the amount of absolute alcohol. The alcohol is then decanted and the precipitate is examined as above. With this technique all the proteid substances are retained in the precipitate and the test is more exact.

132. Operative Treatment of Stab Wounds of the Thorax.—Gangitano discusses 3 personally observed cases of stab wounds of the chest, and such injuries in general. His conclusions

are all in favor of prompt surgical intervention. It is the only means, he thinks, of locating the cause of the hemorrhage and of checking it. Wide opening up of the chest is not such a dangerous procedure, he is convinced, as is generally assumed. It should be done with greater confidence and not merely as a last resort. It is an easy matter to suture a stab wound of the lung, and this effectually arrests the hemorrhage.

136. Fixation of Kidney.—Biondi has had occasion to perform nephropexy in 45 cases, and early became convinced that the various technics proposed to date have each some serious disadvantage. He devised a method which he has successfully applied in a number of cases and commends as being entirely harmless, fastening the kidney securely and permanently, while not injuring the renal tissue. He removes the fatty and fibrous capsule of the kidney, and then holds the organ in its place by packing with a long strip of gauze. The gauze is packed to fill all the space in front of and below the kidney. He first passes a strip of gauze around the lower pole of the kidney; an assistant pulling on the ends of this strip of gauze raises and holds the kidney in place. He then sutures the end of the long strip of gauze to the center of this first loop of gauze, and the rest of the long strip is packed in place, filling the space in front of the kidney with zigzag folds and then the space below the lower pole, bringing the end of the strip out through the lower angle of the incision. The two ends of the first loop of gauze are brought out through the upper angle of the incision. The most energetic tamponing never produced any disturbance in the kidney or adjacent organs. After eight or ten days he commences to withdraw the gauze, a little at a time, and the kidney is invariably found firmly fastened in its place. No disturbance with function has ever been noted, not even in two women who were treated by this technic, both kidneys being thus fastened in place in a single sitting. The results were equally good in the case of a male patient whose left kidney had been fastened in place in this way. One month later the right kidney had to be removed, six months after nephrotomy had been done on this kidney for calculi. In numerous experiments on dogs he found the results equally satisfactory when one kidney was removed and the other packed in place in this way with the tampon. The new formation of connective tissue was not very extensive; it did not invade the tissue of the gland, and caused neither anatomic nor functional disturbances. The adhesions holding the kidney in place were evident by the fourth day, and reached their maximum by the twentieth day. After this the adhesions loosened up a little, which allowed the kidney its physiologic excursions with the movements of the diaphragm, as in normal conditions.

137. Experimental Study of Rabies.—Fermi remarks that the rabbit, guinea-pig, dog and cat are almost totally insensible to hypodermic injection of fixed rabies virus, but that rats are especially susceptible. He describes numerous experiments undertaken to solve various problems of treatment of hydrophobia. In his attempts to produce a Pasteur vaccine that will keep indefinitely he found that a number of mercury and silver salts were able to keep the emulsion sterile in his tests, as also 1 per cent. carbolic acid and 1 per cent. malachite green.

140. Effect on Heart and Kidneys of Bandaging the Legs.—Mossi has been making a number of tests of healthy persons and of those with other than vascular affections to determine the effect of blood-expelling bandaging of the legs. The subjects were kept in bed twenty-four hours and the pulse, blood pressure and urinary findings recorded. Then later they stayed in bed for another twenty-four hours or longer after a bandage had been wound around each leg from the sole to the groin. Comparison of the findings showed a remarkable effect on the kidney functioning. The amount of urine increased from 50 to 100 per cent. or more. The specific gravity of the urine, the pulse and the blood pressure did not show any appreciable difference, although the elimination of chlorids was increased. The bandages were tolerated without any disturbance by healthy subjects, but they had to be removed in six and seven hours in the case of one patient with mitral stenosis and of another with polyserositis, on account of the development of precordial oppression and palpitation. Even in this brief

space of time the diuresis was considerably augmented in each case. This effect is probably the result of the active hyperemia in the kidneys.

143. Antidiphtheria Serum in Erysipelas.—Mastri reports from Rome 3 cases of erysipelas which seemed to be cut short or very favorably influenced by two injections of antidiphtheria serum. He injected 500 units in children and 1,000 in a man of 60 and a woman of 35, repeating the injections two in the course of one or two days.

147. Gastropexy.—Lafranchi has coined this term from the Greek to apply to an operation by which the stomach is made smaller by a series of threads passed nearly parallel through its outer coat from the upper to the lower margin of the organ on the anterior aspect. Drawing up the thread makes the organ smaller. Instead of "taking up a tuck" as by the usual technic for such operations, the organ is "shirred." This technic interferes less with the tonicity and peristalsis of the stomach, while it leaves the pylorus intact. The outcome was extremely satisfactory in the case of a man of 3 whose chronically dilated stomach extended four fingerbreadth below the umbilicus.

150. Preventive and Curative Use of Antitetanus Serum.—Pergola relates experiences with 30 patients who were given prophylactic injections of antitetanus serum, and also with 2 patients already presenting evidences of tetanus. He states that the action of the serum is especially pronounced when the disease runs a protracted course. He found that prognosis was more favorable the longer the period of incubation. The intracerebral or intravenous use of the serum did not appear to have any advantages over the subcutaneous route. In conclusion he adds that between 1887 and 1902 an average of 750 persons died annually of tetanus in Italy. In the last few years it has become much less frequent, and his annual material of about 1,800 patients he has not counted a case except the two mentioned above with tetanus already under way when first seen.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sent them. A selection from these volumes will be made for review dictated by their merits, or in the interests of our readers.

SELF-PROPELLED VEHICLES. A Practical Treatise on the The Automobiles. By J. E. Homan, A.M., with Upward of 500 Illustrations and Diagrams. Giving the Essential Details of Construction and Many Important Points on the Successful Operation and Various Types of Motor Carriages Driven by Steam, Gas and Electricity. Cloth. Pp. 652. Price, \$2.00. New York: T. A. DeLay & Co., 1905-1906.

CASE TEACHING IN MEDICINE. A Series of Graded Exercises in the Differential Diagnosis, Prognosis and Treatment of All Cases of Disease. By R. C. Cabot, A.M., M.D., Instructor in Medicine in the Harvard Medical School and Physician to Patients at the Massachusetts General Hospital. Cloth. Pp. Price, \$1.50. Boston: D. C. Heath & Co., 1906.

RECENT ADVANCES IN PHYSIOLOGY AND BIO-CHEMISTRY. Edited by Leonard Hill, M.B., F.R.S. Contributors: B. Moore, M.A., J. J. R. Macleod, M.B., L. Hill, M.B., F.R.S., M. S. Pembrey, M.D., and A. P. Reddard, A.M., M.D., with Diagrams. Cloth. 744 pp. Price, \$5.00 net. New York: Longmans, Green & Co., 1906.

PROFESSIONAL EDUCATION, with Special Reference to Medical Address Delivered at King's College, London, on Oct. 3, 1905. By T. C. Allott, M.A., M.D., F.R.S., Regius Professor of F in the University of Cambridge. Cloth. Pp. 80. Price, 75 New York: The Macmillan Co., 1906.

PHARMACOLOGY AND THERAPEUTICS. By R. W. Wilcox, M.D., LL.D. Sixth Edition. Based on the Fifth Edition of and Wilcox's "Materia Medica and Therapeutics." Cloth. Pp. 1010. Price, \$3.50. Philadelphia: P. Blakiston's Son & Co., 1906.

CHEMISTRY OF THE PROTEINS. By G. Mann, M.D., B.Sc., formerly Demonstrator of Physiology, Oxford. Based on Prof. Cohnheim's "Chemie der Eiweisskörper." Cloth. Pp. 604. \$3.25. New York: The Macmillan Co., 1906.

DIE NIERENLEIDEN. Ihre Ursachen und Bekämpfung. G. verständliche Darstellung von Dr. H. Enzel, Kurarzt in I. (Augsburg), mit einer Abbildung im Text. Paper. Pp. 80. M. Verlag der Aerztlichen Rundschau, 1906.

RADIUM UND RADIOKTIVITÄT von Dr. med. Ernst Sommer. Inlart für physikalische Therapie, Winterthur (Schweiz) Mit Abbildung im Text. Paper. Pp. 52. Munich: Verlag der iliten Rundschau, 1906.

THE FIFTH ANNUAL REPORT OF THE TRUSTEES OF ST. I HOSPITAL FOR THE DEAF AND DUMB. Spokane. Pp. 28.

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